

## CHAPTER 6

# Issues in the Application of Participatory Environmental Management

*Lucy W. Maina<sup>1</sup> and Daniel M. Muia<sup>2</sup>*

## 6.1 Introduction

Current thinking in the field of environmental management recommends application of integrated mechanisms that include utilizing local, regional, traditional and scientific knowledge in the identification, assessment and prioritisation of problems relating to the environment and for proposing effective solutions to those problems. Hence, the term Participatory Environmental Management (PEM) has entered the scene and is currently used to mean the active and full participation of local communities and indigenous people in the adoption and application of decisions related to the use and management of the environment for sustainable development.

The PEM philosophy underscores the fact that the participation of all sectors in sustainable environmental management optimises human, economic and social resources and can therefore contribute significantly to proper resource management, reducing poverty and improving the quality of life. According to Sharma (1997), participatory approaches in environmental management should be culturally and traditionally induced or may emanate from facilitated efforts by development agencies. PEM has been discussed and conceptualised in a variety of forums. For instance, at the 8<sup>th</sup> Meeting of the Convention on Wetlands titled 'Wetlands: Water, Life, and Culture' held in Valencia, Spain, 18-26 November 2001, resolutions were adopted for integrating PEM in sustainable wetlands conservation. In other major environmental conventions such as the Johannesburg Declaration on Sustainable Development and the Rio De Janeiro Declaration on Environment and Development, PEM as a method of involving many social actors (the public and private sectors, non-governmental organizations and local communities, among others) has been acclaimed.

Further, the convention on Bio-diversity and Inland Water Ecosystems, Annex 1, paragraph 9(e), recommends parties engaged in managing water ecosystems should involve as much as possible, and as appropriate, local communities and indigenous people in the development of management plans and in projects that may affect inland water biological diversity. Hence, though PEM denotes an all-inclusive

<sup>1</sup>Department of Sociology: lucyschola@yahoo.com

<sup>2</sup>Department of Sociology: dmmuia@yahoo.com

methodology in environmental management, it endeavours to particularly utilize community participation as a critical part of this exercise.

The concept of community participation therefore goes hand in hand with PEM. It emanates from the logic that communities have both the right and the responsibility to be involved in the planning, implementation and evaluation of programmes that directly affect them. In any case, community participation advocates for the involvement of people in active and decisive roles. It seeks to combine the vibrancy and first hand knowledge of local communities in designing and implementing projects. Consequently, community participation is today recognized as one of the major ingredients of successful development intervention, by most development agencies.

According to the World Health Organisation (WHO) (1986), community participation in water and sanitation projects constitutes involving communities in assessing the local water situation, defining problems relating to water shortage and its impacts, setting priorities to step-up water supply and sustainable utilization, making decisions pertaining to use of water resources, planning of action programmes to solve problems arising due to misuse, sharing responsibility and benefits in project implementation, operation and maintenance and evaluating and modifying projects in due course. Hence, community participation in this case becomes a key element of the PEM methodology.

## **6.2 Rationale for Promoting PEM**

The popularity of PEM is tied to the many benefits that have been realized in its application within differing localities and contexts. These benefits attest to the fact that PEM has been proven viable for improving joint capacities for study and action among all those involved in environmental management. This is more so because the incorporation of all actors (the public and private sectors, local communities, universities and others) taps into their significant and unique contributions in strengthening and synthesising efforts for environmental management. It also promotes local capacity building through training and sharing at local level. In addition:

- ③ PEM facilitates a coherent definition of needs in accordance with the context and reality of each region thereby departing from traditional methods of generalizing and prescribing solutions without due regard to localized differences and or abilities.
- ③ PEM optimises resources and makes management more effective. Indeed PEM pulls together technical, financial and cultural resources available in communities for environmental management strategies. Most past methods sidelined especially local people thereby ignoring the rich and indispensable resources and indigenous technical knowledge they have. In this regard PEM

promotes capacities from the base and enables cultural appropriate environmental management.

- ⊙ PEM improves communication and exchange of information, contributing significantly to a reduction of environmental conflicts and hence promoting continuity and sustainability of management activities.
- ⊙ PEM promotes the participation of local communities and indigenous people in the preparation of management plans and in the decision-making process. PEM is now considered to be a process that can contribute to overcoming poverty in many regions because it supports joint implementation of activities that promote sustainable use of natural resources in a systematic manner that empowers the communities. Moreover, PEM renders itself a tool that helps to help reduce poverty and improve the quality of life because it identifies efficient, effective and lasting solutions in economic, social and environmental terms, thus creating collateral benefits.
- ⊙ PEM promotes efficient and effective utilisation of resources. This is achieved by incorporating knowledge from many sources and points of view into an integrated formula that is adaptable and workable is brought in, thus facilitating efficiency and sustainability. Besides, enabling communication and exchange of information among actors creates an environment of confidence, which directly relates to efficiency and sustainability of projects.
- ⊙ PEM sets a forum for resolving environmental conflicts and promoting opportunities for participation in other areas of development. This is because it enables the discovery of potentials and common needs and brings together all relevant parties in mutual undertakings that translate into benefits at the community level.

### **6.3 Some Essentials Considerations in the Application of PEM**

Although PEM renders itself applicable in any context and area, there are various essentials that promote its efficiency as an approach and which should be taken into account for its effective application. Among the most essential requirements are general environmental awareness and sensitivity, which is important because even though local people have diverse knowledge, this knowledge must be articulated and harnessed to give relevance to the reality of environmental challenges facing the local area.

Secondly, application of PEM often makes it imperative to conduct initial training of participants with regard to how their knowledge and resources can be tapped and used. Thirdly, using PEM requires joint identification of needs and how they are conceptualised in order to assign specific resources for activities aimed at managing the environment. This may entail articulating clearly how external and internal resources can be mobilized and synergized for efficiency. The various tools of PEM generated by research and experiment need to be brought to the fore and adapted.

to local realities. These may include Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA).

Fourthly, there is need to identify local or regional leaders who become critical catalysts for community and local mobilization and for the application of participatory mechanisms. Finally, in almost all cases of applying PEM, participatory research on the socio-cultural context, integrated analysis for identification of priorities and possible lines of action, and early detection of conflicts are critical imperatives. This is because without valid information, proper design of programmes and roles cannot be achieved.

## **6.4 The Case for PRA as a Tool for PEM**

PEM as a philosophy incorporates various approaches and must therefore not be seen as a definitive prescription. The way various actors utilize PEM will differ and hence the need to discuss some methods and tools that go with applying PEM in environmental management. This section focuses on Participatory Rural Appraisal (PRA) being one tool that has gained prominence and to a large extent become the tool of choice whenever popular participatory processes are required. It is one tool that has characterised environmental management initiatives across countries.

### **Defining Participatory Rural Appraisal**

Participatory Rural Appraisal (PRA) is one type of Participatory Action Research, which has been used primarily by development workers seeking to engage economically and/or socially marginalized groups in identifying and investigating local problems, with the goal of catalysing action (Chambers 1997; Webber and Ison 1994). Fundamental to PRA is the use of hands-on methods, such as participatory mapping and diagramming resources flows, which are thought to overcome communication barriers that may exist between researchers and community members.

The term PRA was first used and applied in Kenya to describe village-level investigations, analysis and planning undertaken by the National Environment Secretariat (NES) in association with Clark and Egerton Universities in the late 1980s. PRA can be defined as a semi-structured process of learning from, with and by rural people about rural conditions. It shares much with its parent, Rapid Rural Appraisal (RRA) but is different from it in that its practice aims at correcting two common errors: the supremacy of the investigator and rapid/hurried learning. Moreover, PRA shifts more of the presentation and analysis of information to the researched people more of which is undertaken in the field aspects that typified RRA.

Participatory Rural Appraisal (PRA) is hence a further development of RRA. The mode of RRA, as indicated in the textbox below, was mainly extractive where researchers go to rural areas to gather data and then leave to analyse it. "The major advantage

of RRA is its ability to generate, in a short time, information that can then be used by development planners” (Chambers 1997). Some issues that characterise PRAs are outlined in Box 1.

**Box 1: Some of the features that characterised RRA include:**

- Learning rapidly and progressively, with flexible use of methods, opportunism and improvisation without particularly following in a strict sense, the phases of conventional research and learning.
- The principle of offsetting traditional biases surrounding space, people, seasons and other features perpetuated by ‘rural development tourism’.
- Learning directly from and with rural people.
- Researchers collect data and analyse offsite.
- Triangulating: in which case more than one method or sources are applied in research mainly to cross check and compare findings.
- Optimising of resources which involves relating costs of learning to the usefulness of information, with particular reference to quantity, relevance, accuracy and timeliness. In RRA, measurability and reductionism- often desired in conventional research are done with utmost care.
- Reflection on what is apparent or hidden, those involved and those not involved, what is said and not said, as critical components in the process of leaning.

PRA application is also associated with the correction of anomalies perpetuated over time by both scholars and policy makers. For instance, the past is littered with erroneous and inaccurate data regarding wood fuel forecasts in Africa where it was projected that severe wood-fuel crisis would be experienced in most countries beginning 1980s. The reality in most countries has contradicted these estimates. The anomalies arose as a result of gross underestimation of trees, failure to account for natural regeneration, rising reforestation efforts and other factors. At the same time the consumption patterns of wood-fuel were misrepresented especially because it was believed that the rise in population would be proportional to consumption without factoring in the changes that would occur over time between wood-based fuel and other kinds and also the adoption of energy saving mechanisms (Chambers 1997). Many of these processes and outcomes could not be captured without a participatory learning process.

Another past anomaly worth noting occurred with regard to effects of population increase on the environment. The common belief that increase in population always poses danger on the environment was challenged by research carried out in Kenya beginning 1980s in Machakos district. In this study, findings indicated that a six-fold

rise in population did not occasion a paralleled deterioration in environment due to intervening factors (Tiffen *et al*, 1993). These and other past errors call for a re-evaluation of tools and mechanisms of learning and interventions.

## **Key features of PRA**

### **Popular participation**

The PRA approach regards popular participation as a fundamental ingredient in project planning and integrates local technology for social, political and economic development. The first PRA pilot project launched by the then Kenya's National Environment Secretariat (NES)<sup>1</sup> in collaboration with Clark University and Egerton University in 1988 proceeded from the rationale that effective village resource management must be undertaken in partnership with communities. The project identified communities that were already implementing ecologically sound efforts and learned from the motivating factors involved in such efforts to design participatory tools and share experiences for replication in other areas.

### **Flexibility**

A further strength of the PRA approach lies in its flexibility in applicability. While it initially targeted rural communities, its methods and tools can easily be tailored to suit urban communities. It presupposes that communities are a critical reserve in curbing natural resource degradation and stepping-up effective environmental management. Hence, in its applications, communities mobilize their own natural resources, define problems affecting them, learn from previous successes, evaluate local institutional capacity, prioritise opportunities and prepare a systematic and site-specific plan of action - a Village Resource Management Plan for a community to adopt and implement (NES, 1990).

### **Multi disciplinary teams**

PRA also allows a multi-disciplinary approach to tackling problems whereby rural leaders work with technical specialists such as economists, sociologists, engineers, and environmentalists in various relevant areas.

### **Role Reversals**

PRA aims at changing and reversing situations, roles, behaviour, relationships and learning in that professionals cease to be all knowing or catalysts and become

<sup>1</sup>The functions of NES have since been vested with the National Environment Management Authority (NEMA)

### Key features and principles of PRA

- Popular participation is a fundamental ingredient in project planning;
- Flexibility;
- Outsiders are facilitators rather than dominating know-it-alls;
- Multi-disciplinary approach to tackling problems;
- The normal balance shifts from closed to open, from individual to group, from verbal to visual and from measuring to comparing;
- Continuous generation and analysis of data;
- Teamwork, partnership and sharing of information, experience, food and training between insiders and outsiders, and between organizations is enhanced;
- Reversals in learning with professional learning from communities;
- Triangulation.

joint learners. The former patterns of outsiders domineering and lecturing to local communities about what they ought to do are abandoned, as professionals become facilitators who sit, listen and learn from the wide reserve of knowledge and techniques that communities possess. Further, professionals share their methods with local people, which they can therefore utilize for their own appraisal, analysis, planning, action, monitoring and evaluation. The realities of the local situation are brought into clear focus as outsiders cease to impose their reality and encourage enable local people to express their own. PRA extends beyond learning, into analysis, planning, action, monitoring and evaluating and becomes a process of synergizing action and learning as communities continue to apply it in future endeavours. Hence, PRA extends beyond learning, to action and evaluation.

### Triangulation

There is continuous cross checking of data through use of different methods, different sources of information (people, places, events) and skills from different people.

### Principle of local facilitation

The marginalized actively take part and air their views. In PRA practice, local people become analysts, mappers, diagrammers, observers, researchers, historians, planners and actors taking the place of facilitators or professionals. Further, local analysis of secondary sources such as aerial photos and maps is enhanced. This principle can be applied in resource management and mapping. For instance, local people can analyse and group soil types, land conditions and land tenure systems. In

mapping, drawing and modelling, local people visualize and generate maps, which they can effectively recognize and interpret. Such maps (Figures 1) may represent their ideas of what they regard important resources, how such resources relate to others and their interpretation of what is adequate or inadequate.

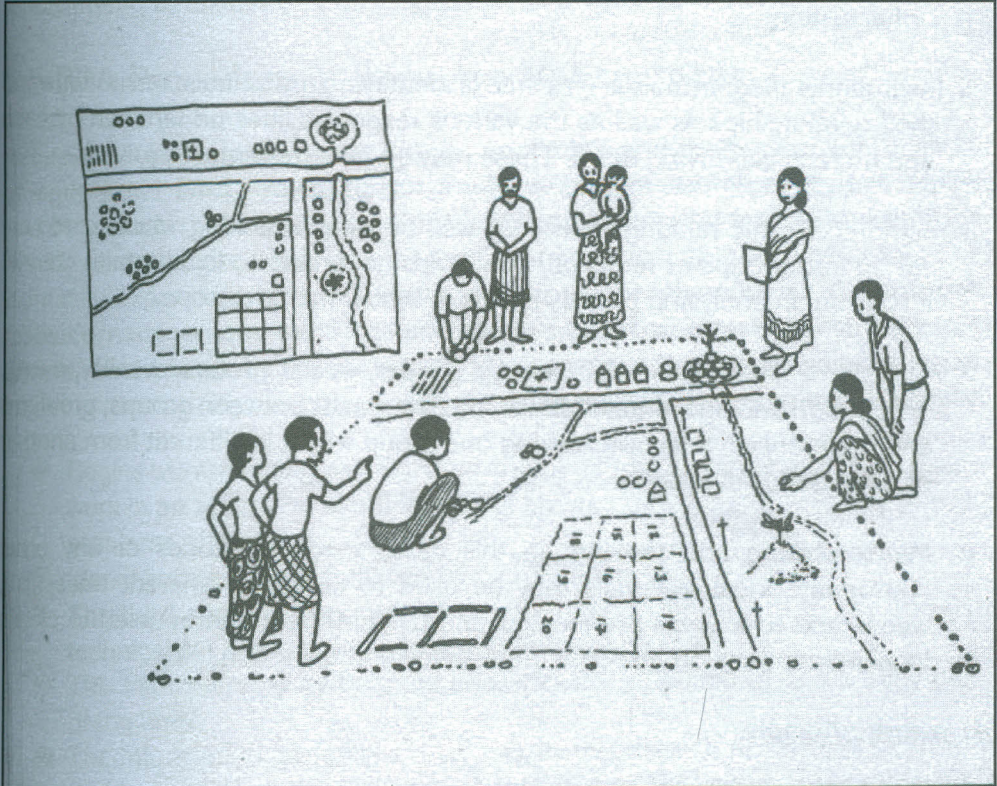


Figure 1-Villagers sketching a landscape<sup>1</sup> during a PRA Session

<sup>1</sup> From IIED, (1995)

- ii. Drawing seasonal calendars, which outline monthly distribution of rain, amount of rain, soil moisture, crop cycles, varying women's roles, diet and food consumption, sources of income, expenditure and other patterns. Such calendars can also include details of different livelihood options in each season. Illustrating daily time analysis can help capture time-patterned activities while factoring seasonal variations such as clearing vegetation, planting, weeding or harvesting.
- iii. Institutional diagramming. This entails identifying individuals, institutions and their relationships as well as the various responsibilities undertaken by each and thereby classifying them. These may be governmental or private.
- iv. Socio-economic ranking. This may well be wealth ranking where cards are sorted into groups or ranks of households according to local wealth criteria. It is useful in analysing poverty trends and how the poor cope.
- v. Analysis of differences especially by gender, social groups, wealth/poverty, occupation and age, entails identifying differences between groups, problems and preferences. It involves asking one group why it is different from another or does things differently.
- vi. Matrix scoring and ranking. In this case, seeds or stones or any other appropriate local materials may be used to compare different trees, fruits, weeds and to express preferences and usefulness. It can be used to obtain local perceptions on resource importance and utilization.

### **Teamwork principle**

- i. Shared presentations and analysis: maps, models, diagrams and findings are presented by local people/outsideers especially at community meetings and checked, corrected and discussed. In such cases, issues of who talks, how much they talk, whose ideas dominate are critical.
- ii. It also involves sketching team contracts and interactions whereby people draw contracts among themselves with agreed norms of behaviour, mutually designed modes of interactions and sanctions to be applied if a member breaches these.
- iii. Participatory planning, budgeting, implementation and monitoring: local people prepare their own plans, budgets and schedules, take action, monitor and evaluate progress.
- iv. Team work in drama and participatory video playing, which enables people to discover how they see things, and what matters to them, and to influence those in power.

## Continuous analysis of data

For facilitators and professionals, the instruments of research include short-standard schedules, which are used as alternatives to questionnaires to record data, in a standard and commensurable manner. PRA sessions are followed by immediate report writing to ensure that nothing is lost as the process goes on.

## 6.5 PRA Procedure in Resource Management

Natural resource management implies improving and managing resources such as agricultural land, water, forest; implementing measures to curtail depletion and degradation; optimising incomes from agriculture and forests and promoting friendly technologies that do not impact negatively on the environment; and ultimately expanding and increasing natural resource products. In participatory resource management, the dominant rationale is that communities are the principal decision-makers on issues pertaining to resource management. The process of involving communities in natural resource management is systematic. It usually:

- ⊙ Begins with selecting a site or area and obtaining administrative permission to work in an area. The identification of an area may be motivated by prevailing problems affecting it
- ⊙ Identifying an area is followed by a preliminary visit
- ⊙ The third step involves collecting information with regard to the social and technical set up as well as doing spatial analysis
- ⊙ This information may then be analysed and classified to give a fuller picture of the area
- ⊙ The information generated then sets the framework for identification of the problems and organizing for resources and opportunities to tackle them
- ⊙ Such opportunities can then be ranked and a Village Resource Management Plan can be prepared
- ⊙ The implementation framework is then laid out
- ⊙ Follow up, evaluation and dissemination of findings is the final step

According to NES (1990) resource management plans are the ideal way of initiating resource management projects. A Village Resource Management Plan (VRMP) records a community's priorities and potentials. It covers the community's development priorities, proposed actions and requirements, duties and responsibilities for individuals and groups, work schedules and identifies areas where the community needs external assistance. In making such a plan, a community may have a research team or persons acting as facilitators who are also consulted for technical information that may be needed.

## 6.6 Gender considerations in PEM

Participatory Environmental Management demands the inclusion and consideration of the concerns and roles of both men and women. Often, women have been overlooked in environmental management especially due to the myths and stereotypes surrounding their relationship to and interaction with the environment (Maina, *et al* 2006). Women have been sidelined especially due to the belief that both men and women benefit equally from such endeavours or that women are incompetent at certain activities such as forestry and use of appropriate technology. The involvement of women in PEM underscores the fact that in many areas women's roles dictate their direct relation, use and benefit from the environment. For instance, majority of farmers are women cultivating both cash and subsistence crops. Secondly, women are the major collectors and users of water, wood and other forest products.

The International Institute for Environment and Development (IIED) gives a guideline on how to mainstream gender in PRA for sustainable environmental management. In this kit, different experiences drawn from various areas show that men and women have various perspectives on natural resources and their utilization (Prentice *et al.* 1996).

The integration of gender into PRA demands gendered analysis such as resource mapping to show division of labour, use of the resources and determination of which gender has control. Seasonal activities, calendars and visual mapping may throw light on who is engaged in what activities at a particular time and species of trees or crops planted by each gender.

Women involvement in decision making and planning often requires a particular form of empowerment to ensure that they can participate in sharing ideas. Participation in implementation requires providing technical inputs to women and men on an equal basis and publicly demonstrating faith in the productive capacities of women. Monitoring and evaluation also needs to be gender sensitive especially with regard to how women are benefiting after implementation.

## 6.7 Application of PRA in Environmental Management

In most cases where PRA has been applied, three-fold purposes have been served including; topical investigations and research. In this case the exercise is focused on a topical area of concern whereby the specific problem is identified and analysed towards generating a feasible approach and solution to it. Secondly, PRA has integrated a process of training for outsiders and local people on local situations, and lastly, PRA has often been an empowering process of appraisal, analysis, planning, action, monitoring and evaluation. As relates to PRA and the domain of environmental management, PRA has proved itself versatile in watershed

and soil/water conservation, land tenure and policy, forestry, coastal resources and fisheries, people, parks and bio-diversity and in the designing of community plans for resource management. There is evidence of its use across nations of the world. Some of the cases in which PEM has gained prominence are briefly outlined.

Foremost, at the international level, the United Nations Environment Programme (UNEP) has utilized active participation in environmental education geared at creating capacity for action and decision-making. This is tied to providing communities with appropriate knowledge and skills to engage critically in environmental and development problems (UNEP 2005). The integration of community participation is also evident in training programmes.

Globally, Asia appears to take the lead in applying participatory environmental management going by the diversity of programmes utilizing this methodology. In China for instance, many small watershed management centers exist, most of which involve local people in water, farm-land and forest management. Further, in Nepal, the Department of Forestry supports local participation in managing forest reserves and has handed over the responsibility to local user groups in the entire nation. The country is dotted with forest users' groups, which prepare their own constitution and objectives, list users and construct rules and regulations of use. This represents an institutionalised system of watershed management mostly utilizing RRA and PRA tools. Users take the major role of planning, implementing, monitoring, evaluating and maintaining forests and also sharing their benefits responsibly.

In the Mae Chaem watershed area of Thailand, local people have been trained to discuss and solve problems such as forest degradation, fires and soil erosion. Each village has a natural resource conservation group that makes rules and sanctions those who misuse natural resources. The communities also decide and prioritise their problems, then seek assistance from relevant organizations (Sharma 1997). Applying PEM in water-shed management often involves defining objectives of the integrated watershed management model, visualizing farmers as part of the process, empowering farmers as owners of the process, mainstreaming gender concerns and other disadvantaged groups and assuring the sharing of benefits. The empowerment of farmers should allow farmer-led facilitation, farmers' capacity building, farmer-led planning and management of watershed programmes, making use of farmers' own technology and knowledge and encouraging farmers to do their own monitoring and evaluation of watershed programmes.

The PRA tool plays an important role in watershed management because it brings to the fore local perception of natural resources and social development issues, enhances the exploration of local knowledge and identification of local technologies, enables the active participation of local people in needs assessment and decision-making. Specific PRA techniques that emerge as important in this regard include observational walks and transects, use of slide language for natural resource

management appraisal, past, present and future mapping of natural resources well as ranking of benefits from natural resources.

Regionally, a myriad of development agencies in the area of environment management are currently focused on integrating the participatory process their interventions in Africa. FARM-Africa, for instance, acclaims local community involvement in forest management as the best approach to ensuring sustainable use of forest resources. In its programmes in Ethiopia and Tanzania, Farm-Africa attempts to link community interests with those of protecting forest resources. This essentially involves working in collaboration with communities in developing forest management plans, articulating legal frameworks for the management, conservation and use of forest resources. Farm-Africa in turn endeavours to develop and document new models of community planning and forest management to ensure that regional authorities accept the principle of community forest management, encourage the development of a positive environmental policy, promote community forest management and to promote the community forest management model widely throughout Ethiopia and Tanzania.

The benefits of integrating this participatory approach in forest management is that in both areas of intervention, communities have begun to take responsibility of their forest reserves, In this regard, communities are actively involved in guarding and patrolling forest areas and monitoring use of forest products. Secondly, communities are taking it upon themselves to lobby government and other agencies to protect forest reserves and to link government policy with community responsibility (www.farmafrica.org).

Locally in Kenya, a number of organizations have experimented with the community participation approaches, which have included use of PRA tools. A case in point is that of the Kenya Charcoal Working Group, which recommends a participatory framework in the regulation of charcoal production rather than the current government controlled-process of harassing charcoal producers, which often leaves room for corruption and discriminate practices (ESD Africa, 2005). The approach is also seen as a viable option for fostering better government/community relationships in environmental management, and a conduit through which environmental conflicts can be resolved.

The second case is that of the International Centre of Insect Physiology and Ecology (ICIPE), which has utilized PRA tools in conservation of habitats and insect biodiversity while improving community livelihoods. The community participation model provides opportunity for integration and harmonization of activities and objectives. ICIPE has used an integrative process to mainstream ecosystem conservation through collaborative management with communities. The specific projects are situated in various parts of Kenya including Kakamega, Sokoke and Mwingi forests. The Kakamega wild silk enterprise is part of these incentives for communities.

save the forest by integrating conservation within community livelihoods. ICIPE's approach has enabled among others an ecosystem management framework, active involvement of rural communities in ecosystem conservation and improved sustainable economic activities (Raina 2006).

Lastly is the case of an environmental education project undertaken in Machakos district the mid 1990s. The project was undertaken from March 1994 and completed in April 1995. The title of the project was "Beyond Environmental Education and Training". The project located in Kibauni Location, Machakos District was undertaken by Project Reach, a local NGO with the support of the Canadian International Development Agency (CIDA). The project utilised a PRA approach from the stage of needs assessment through to implementation. Prior to the needs assessment, all the necessary protocol issues were attended to including visit to the local government offices starting with a courtesy call on the District Commissioner, and then visits to local provincial administration offices. An introductory meeting was held with the community. This was subsequently followed by a series of joint meetings to gather data and analyse it to form the basis for the implementation of the project.

While Project Reach was the main facilitator, technical teams were constituted and expertise drawn from relevant government departments at the district and divisional levels. Community members and leaders from all the various offices and organisations represented in the location took part in the exercise. Since the project had a particular focus on the schools in the location, head teachers and teachers handling sciences were involved also. The participatory needs-assessment involved mapping of resources, observation, interviews as well as community interviews. The mapping sessions while facilitated by Project Reach, at appropriate points, leadership shifted to the community who would generate, discuss and analyse the data and report on consensus arrived at. One observation during the sessions was that the provincial leaders would initially take leadership but quite often, the community would assert their right to control the process and consequently the process would become community-driven.

The project was targeted at community education on environmental issues. Technical resource persons provided training on environmental issues to community members and teachers. Also in realisation of the gender dimensions involved in environmental management, gender awareness creation was done at the community level. The teachers were expected to transmit the same knowledge to their pupils. Environmental clubs were started in schools to act as the nucleus for environmental education and activities. The activities undertaken were mainly environmental education, which was augmented with setting up of tree nurseries and planting of trees.

Some of the achievements of the project included heightened environmental

awareness among school pupils, teachers and members of the community. Environmental improvement of the school compounds as trees were planted, increased interest in tree planting in Kibauni location. The main challenge faced by the project was that while the project support was for environmental education (identified in most sub-locations as priority) the priority need for water remained unmet. This being a rather dry area, tree survival rate was thus rather low. Secondly, at the end of the three-year project period, external support was not extended. In view of the fact that environmental matters are rather long-term issues, then the burden was left to the community to carry on with most of the trees being rather small. While the enthusiasm of all stakeholders was high, environmental awareness and practice needed to be given more emphasis and made a part of the routine activities of community members and schools. This remained a challenge as the project came to a close. The vital lesson learnt however was that communities valued their environment and understood what was required to effectively and sustainably manage it.

## **6.8 Some Challenges in Using Participatory Environmental Management**

There are several challenges in using participatory approach in environmental management. Some of these include:

- ⊙ The results may only apply to the communities visited and thus may not allow for generalizations;
- ⊙ Participatory processes while desirable are time consuming. The question is how much more time could be realistically allowed while the environment and the very livelihood (and indeed lives) of human beings is under threat!
- ⊙ Bias may creep into the results given the intensity of interaction involved and the risk of undue empathy on the part of the facilitators and the technical people involved;
- ⊙ Sustainability is often a challenge where considerable external resources have been utilized to support the PEM efforts, as communities may not continue to support the projects at the same level. This is more so when there are other competing priority needs at the community level.
- ⊙ Environmental management issues are long term, but require immediate and day-to-day actions. Thus deliberate and often sacrificial action is required as the returns are not necessarily realizable individually and in some cases over one's lifetime.

## 6.9 Conclusions and Recommendations

The use of Participatory methodologies everywhere demands a re-evaluation of policy. Notably, most government policies in Africa and elsewhere appear non-committal to the potential of community participation in resource management. In Kenya, for instance, the Forest Act (2005) specifies that communities living adjacent to forests will be required to form Community Forest Associations (CFAs) to oversee and manage forest resources. However, the government still exerts undue control over forest reserves without due regard to the role of such committees. This points to a need to empower and entrust communities with resources and to make them accountable first to themselves and then, government. Such a move might demand formally licensing communities to exert control and creating benchmarks for future accountability. Tailoring environmental policies towards training and empowerment of communities would also an important step.

Integrating the community participation approach demands a thorough look at sustainability issues. The main concerns here include answering questions such as how community involvement is likely to be influenced by factors such as population growth, migration, and changing environmental concerns, among others. The sustainability of projects where donor or external sources of financing are used must also be taken care of since most projects have been known to collapse as soon as external intervention comes to an end.

In many instances, data on local perceptions and knowledge is not available. Also, not much of Indigenous Knowledge Systems (IKS) have been documented. In such cases, it becomes difficult to identify gaps and strengths among communities and no wonder, government and policy makers often hesitate to hand over resource management to communities. This calls for deliberate efforts for knowledge management and trust building between government and local communities

## 6.10 Review Questions

- i. Using practical examples, critically examine the differences and relationship between PRA and PEM
- ii. Discuss possible hindrances to the application of PEM in environmental management in your community
- iii. How does the principle of community participation enhance resolution of environmental conflicts and insecurity?
- iv. Participatory Environmental management is the single most important key for creating sustainable societies. Discuss using relevant examples

## **Bibliography**

- Chambers, R. (1997). *Whose Reality Counts: Putting the First Last*. Intermedia Technology Publications, Bath.
- ESDAfrica (2005). *National Charcoal Survey: Exploring the Potential for a Sustainable Charcoal Industry in Kenya*.
- Maina, L. (2006). *Gender and Environmental Management*. In *Environment and Sustainable Development: A Guide for Tertiary Education in Kenya*. Vol. 1. JSPS, Nairobi.
- National Environment Secretariat, (1990) *Participatory Rural Appraisal Handbook*. Government of Kenya; Clark University; Egerton University; and the Centre for International Development and Environment of the World Resource Institute. Natural Resources Management Support Series. No. 1.
- Pretty, N., Guijt, I., Scoones, I., Thompson, J. (1996). *Participatory Learning and Action: A Trainer's Guide*. IIED Participatory Methodology Series. London.
- Raina, S. K., (2006) *Commercial Insects and Natural Resource Management for Income Generation*. ICIPE. Paper presented at the annual KDSA workshop held in University of Nairobi, 2006.
- Republic of Kenya (2005) *The Forest Act*. Government Printers, Nairobi.
- Sharma, P. (1997). *Participatory Processes For Integrated Watershed Management (PWMTA-FARM) Field Document No. 7*. FAO, UNDP.
- Tiffen, M., Mortimore, M., Gichuki, F.N. (1993). *More people, Less erosion: Environmental Recovery in Kenya*, John Wiley and Sons, Chichester, New York, Brisbane.
- UNEP (2005). *UNEP Strategy for Environmental Education and Training*, UNEP, Nairobi.
- Webber, L. and Ison, R. (1994). *Participatory Rural Appraisal Design: Conceptual and Process Issues*, Agricultural Systems No. 47.
- World Health Organization (1986) *Guidelines for Planning Community Participation Activities in Water Supply and Sanitation Projects*. WHO Offset Publication. Number 96.
- [www.farmafrica.org](http://www.farmafrica.org) *Community Forest Management*. Accessed November 2006.