ANALYSIS OF COMMUNITY PARTICIPATION IN THE PROJECT CYCLE MANAGEMENT OF AFFORESTATION ACTIVITIES IN RIVER NYANDO BASIN, KENYA

By

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ABSTRACT

Past studies indicate that limited data on community participation in afforestation projects constitutes a major constraint to rural development, frequently, leading to incorrect assessment of the forestry sector needs of rural people. The objective of this study was to analyze community participation in the project cycle management of afforestation activities in River Nyando basin. The basin continues to suffer from environmental degradation, despite having one of the highest concentrations of Non-Governmental Organizations involved in environmental conservation efforts. The key hypothesis of the study was that local communities' participation in afforestation projects' activities was not determined by benefits obtained by the communities from the afforestation projects. Data was collected from 150 households selected from a study population of 1,928 households using systematic sampling technique. Key results from the study indicated that two factors largely determined community participation in the afforestation projects. Community participation was significantly determined by the benefits that the communities obtained from the projects (X^2 α 0.05 = 0.000); implying that the communities were dependent on the projects, which is not suitable for sustainability of afforestation activities. Community participation was also determined by environmental factors, especially, soil erosion (X^2 α 0.05 = 0.001); implying that soil erosion was one of the major environmental problems in the study area. The hypothesis that communities' participation in afforestation projects' activities was not determined by benefits obtained by the communities from the projects was, therefore, rejected. The study concluded that community participation in the afforestation projects was largely determined by the benefits that the beneficiaries obtained from the projects. The study, therefore, recommended that afforestation projects should involve beneficiaries in 'cost-sharing' of afforestation development ventures so as to, not only ensure sustainability of afforestation activities but also avoid the problem of dependency by beneficiaries.

CHAPTER ONE: INTRODUCTION

Background to the Study

mmunity participation has now come to be recognized as an important and integral part of l development. The concept of community participation derives, largely, from the Alternative elopment Paradigm (ADP). The alternative development paradigm postulates that local ple should be involved in decision–making processes on issues of development of their areas. alternative development paradigm emerged in response to inadequacies of the 'community elopment' approach of the 1950s and 1960s. The 'community development' approach ulted in exploitation of the masses while trying to pursue rural development through local f-help initiatives. Development programs through the 'community development' approach re largely, 'top-down' in decision-making, compartmentalized along disciplinary lines and sustainable (Karki, 2001). These experiences have, therefore, led to the adoption of the ternative development approach' and hence, the emphasis on community participation in rural velopment initiatives. Development agencies, especially, governments and Non-Governmental ganizations (NGOs) have now taken steps to pursue community participation through policies ch as decentralization, privatization and good governance. There has been a realization that overnments' and development agencies' policies and programs are unlikely to succeed unless e local people are supportive (Karki, 2001). Hoben *et.al.* (1996) observed that rural evelopment and natural resource management projects in Africa cannot succeed without local ommunity participation. However, the extent to which meaningful community participation in evelopment process has been achieved is debatable (Karki, 2001).

Community participation in rural development initiatives is, usually, anticipated to lead, not only o beneficiary empowerment but also, to ownership and sustainability of development initiatives. However, this has rarely been the case because local communities have always tended to be brought on board in projects or programs that have been planned without their participation. In the case of River Nyando basin, for instance, local community members feel that most of the projects 'ignore the people' (Onyango, 2002). Yet River Nyando basin is an important catchment for Lake Victoria. The basin supports an estimated population of 746,515 people who directly or indirectly depend on the Lake Victoria drainage basin (Mungai and Nyakango, 2004). However, River Nyando basin has been identified as one of the main sources of sediment into Lake

)ria. Sediment load from River Nyando is 423 tons/km^2 while that from River Sondu-Miriu, xample, is approximately 150 tons/km^2 (Chin, *et.al.,* 2000). This sediment load is a result of re environmental degradation caused by deforestation and poor natural resource use tices in the upper areas of the River Nyando basin. The reduction of forest cover, for nce, is severely impacting on human population in the River Nyando basin as evidenced in frequent flashy floods (Noordin and Bashir, 2000). Due to continued environmental radation in the basin, a number of organizations have initiated environmental management rventions to address this degradation. However, the activities of these organizations are her coordinated nor collaborative (Onyango, 2002).

ile studies have been conducted on farmer uptake of various land management and icultural technologies in the basin, little has been done to address local community ticipation in the afforestation projects i.e. their participation in the various stages of the)ject cycle of afforestation projects with a view to establishing sustainable afforestation ivities. Effective community participation in the identification, planning, implementation and)nitoring and evaluation of afforestation projects could lead to sustainability of afforestation tivities in the River Nyando basin and hence, help alleviate most of the environmental gradation problems.

.2 Problem Statement

roject approaches to development remain a vital instrument by development agencies to reach nd assist poor communities in the developing world. Development interventions in the past have :nded to focus on resource and knowledge transfer to beneficiary communities through the 'top-own' approach. However, several decades of development funding have demonstrated the ailures of the 'top-down' approaches to reach and benefit the rural poor. A possible reason for hese failures is attributed to the lack of local community participation in identification, planning, mplementation and monitoring and evaluation of development projects (FAO, 1991; Cernea and Ayse, 1997; Blackman, 2003; Shah *et.al.* (2000) cited in APO (2002). Even when an element of participation' is built into projects, it is all too often largely in terms of local investment of labor nd not in real decision-making. Beneficiary communities are only informed after plans have)een made and that this is done through formal meetings where the officers justify their plans but

lification is not considered. The purpose of this study, therefore, was to analyze community icipation in the project cycle of afforestation projects in River Nyando basin.

Objectives of the Study

main objective of this study was to analyze community participation in the various stages of project cycle of afforestation projects in River Nyando basin.

e specific objectives were to:-

(i) Carry out an analysis of local communities' participation in the project cycle management of afforestation projects in River Nyando basin,

(ii) Investigate the factors determining local communities' participation in the afforestation projects,

(iii) Explore mechanisms that the projects had put in place for the sustainability of afforestation activities.

.4 Research Hypotheses

his study was guided by the following hypotheses:

(i) Afforestation projects in River Nyando basin had not involved local communities in the various stages of project cycle management,

(ii) Local communities' participation in afforestation projects' activities in River Nyando basin was not determined by benefits accruing from the projects but by other factors,

(iii) The afforestation projects in River Nyando basin had not put in place mechanisms for the sustainability of afforestation activities.

1.5 Justification

Many studies done in the past indicate that low level of community participation in afforestation projects leads to poor adoption of technology by farmers (Adeola *et.al.,* 2001; Jansens and Wildemeersch, 2002). Besides, lack of reliable data on effective community participation in

restation projects constitutes a major constraint to rural development practitioners such as cy-makers, planners and managers. This frequently leads to incorrect assessment of the elopment needs of rural people hence, making it difficult for governments and development ncies to properly measure progress achieved by afforestation projects in improving elihoods of rural communities (FAO, 1991; Karki, 2001).

spite the high number of organizations involved in afforestation development, the nature and el of beneficiary participation in afforestation projects' activities in Kenya is not well cumented. River Nyando basin was selected for this study because it is one of the most graded basins in the Kenyan side of Lake Victoria despite having one of the highest ncentrations of Non-Governmental Organizations (NGOs) and other agencies involved in vironmental management efforts. Studies conducted in the basin indicate that it is one of the osion hot spots in the Lake Victoria basin (Walsh *et.al.,* 2004).

6 Scope and Limitations of the Study

he study was limited to community participation in all stages of the project cycle: project lentification, planning, implementation and monitoring and evaluation. Project financing was ot addressed separately because financial decisions are taken at different points in the cycle e.g. lentification or appraisal (Twigg, 2007). Community participation in project programming was lso not addressed separately because programming involves the establishment of general uidelines and principles for cooperation, agreement of sectoral and thematic focus and outlining f broad ideas for projects and programmes, which are always carried out at national and/or egional levels (Twigg, 2007; ITAD, 2001).

During the study, the researcher encountered a number of challenges. The researcher, for nstance, interviewed 150 households instead of 192 because 42 of the respondents lived in local urban centres and were not actively engaged in agriculture, despite their names appearing in the projects' lists of beneficiaries. These respondents would not give the information needed and were therefore excluded from the final sample. This was treated as a case of sampling error. Apart from sampling challenges, members of the local community also expected to be paid participation allowance during the Focus Group Discussions. The researcher was, however, able to convince them that this was an academic exercise and not a new afforestation project coming

ne area. In any case, giving cash handouts would set a bad precedence for future researchers he study area and would undermine the very principles of empowerment and sustainability ich this study advocates for. Since the research was carried out in a rural set-up, where ners are always engaged in daily livelihood chores, it was difficult to complete questionnaires ime, leading prolonged periods for questionnaire administration and consequent extension of field work exercise.

CHAPTER TWO: LITERATURE REVIEW

Concepts Underpinning the Study

1 Alternative Development Paradigm (ADP)

: Alternative Development Paradigm (ADP) has its origins in the 1960s and 1970s. ernative development paradigm was a response to dissatisfactions with mainstream velopment (Martinussen, 1997; Pieterse, 2001; Friedmann, 1992). Alternative development radigm embodies various development concepts and strategies such as 'bottom-up' and 'basic eds approach' which seek to empower communities through their involvement in development tiatives. Thus, alternative development seeks to empower the disempowered by trying to put rward, in the development agenda, their moral claims as a response to hegemonic processes at oppress them (Pieterse, 2001; Friedmann, 1992).

ccording to Martinussen (1997), among the earliest and central events which are often noted as ing, particularly, important for the emergence and consolidation of the alternative development radigm are a conference on 'human environment' in Stockholm in 1972 and a seminar in ocoyoc, Mexico, in 1974. The concluding declaration of the Cocoyoc seminar brought together vo major strands of alternative development: those who argued that highest priority should be ven to satisfying basic needs for food, water and shelter, and those who were primarily ncerned about the destruction of the environment and exhaustion of non-renewable natural sources (Martinussen, 1997).

While the conventional development approach places emphasis on economic growth and ssumes that the benefits of economic growth and development will 'trickle' down to the poor, lternative development seeks to put the table the other way round and instead of putting growth s the priority, the urge is to place economies at the service of the people. Alternative evelopment not only empowers the disempowered but also cultivates in them a culture of nclusiveness, where real participation through empowerment is the main issue at stake. In lternative development, the protagonists are the people and the beneficiaries are also the people ence, means and ends are people-centred (Korten, 1980; (Hettne, 1995) cited in Mweene 2006).

Alternative Development Paradigm is used in this study as an analytical concept, icularly, in relation to its relevance as a 'bottom–up' approach to development. It would be resting to find out how the afforestation projects in River Nyando basin have embraced this roach in terms of involving members of the local communities in the project cycle nagement of afforestation activities.

.2 Sustainable Livelihood Approach (SLA)

stainable Livelihoods Approach (SLA) is a number of conceptual frameworks which take an ets/vulnerability approach to analysis of the livelihoods of poor people. Sustainable elihoods approach (SLA) emphasizes understanding of the vulnerability context and the ganizational environment within which poor people draw upon assets of different types in der to implement a livelihood strategy (DFID, 2001).

stainable livelihoods approach (SLA) is centred on people and their livelihood strategies and developing an understanding of them: of how they change and develop; of the impact of fferent policy and institutional arrangements upon them; and to tailor development that fectively builds on them. Sustainable livelihoods approach is holistic, people-centred and tegrates multiple actors including communities, private sector, NGOs and government thorities (DFID, 2001). Sustainable livelihood approach highlights ways in which programme project activities are directly or indirectly affecting people's livelihoods and the context that apes them, whether people's own livelihoods priorities are being addressed, how people's velihood strategies are affecting their participation in and benefit from a project or programme nd, how activities can be adapted to enhance livelihood impacts for target groups (DFID, 2001).

he sustainable livelihood approach is relevant to this study because sustainable afforestation evelopment in River Nyando basin could only be achieved if external support (government, GOs and private sector) and local communities work together to develop and prioritize ntervention packages that address local communities' livelihood strategies in view of their ocio-economic, environmental, cultural and political situation.

3 Project Cycle Management (PCM)

ject Cycle Management (PCM) is a term given to the process of planning and managing jects and programmes. Project management is based on principles of project cycle ackman, 2003; Twigg, 2007; ITAD, 2001). According to ITAD (2001), Project Cycle nagement (PCM) was introduced by the European Commission in the early 1990s to improve quality of project design and management and thereby improve the effectiveness of velopment aid. Project cycle management was necessitated by a realization that development jects were performing poorly due to poor project planning and preparation, irrelevance of jects to beneficiaries, underestimation of project risks, ignorance on project sustainability ues and inability to learn and incorporate lessons from past experiences into new policy and actice.

is realization, therefore, created a new approach to designing and managing projects. This proach was built around the project cycle: project cycle being a 'sequence of inter-related ogressive phases' in a project including programming, identification, appraisal, financing, plementation and evaluation (Twigg, 2007; ITAD, 2001; Bryant and White, 1982). The oject Cycle Management concept, basically, underpins this study. Using PCM as an analytical ncept, it would be interesting to find out the extent to which the afforestation projects in River yando basin have involved the local communities in the various stages of the project cycle, ith a view to establishing sustainable afforestation activities in the basin.

.1.4 Community Participation

ommunity participation has been a constant theme in development dialogues for the past 50 ears. However, despite its widespread usage, there is no universally agreed-upon definition of he term (Taylor, 2004; WHO, 2002; Midgley, 1986; Rifkin, 1985; Zakus and Lysack, 1998; Oakley, 1989).

Community participation concept has its roots in democracy and civil rights movements of the 1960s and 1970s (Pateman, 1970; Brieland, 1971). However, since the 1950s, notable developments on community participation have taken place. For instance, in 1953 the UN started institutionalizing participation in community development projects (Warburton, 1997). In 1973,

World Bank also started institutionalizing people's participation in development initiatives ıite *et.al.*, 1994). In 1980, International Union for the Conservation of Nature (IUCN) ɔgnized the importance of community participation in conservation projects (IUCN, 1980). l, perhaps, a major landmark on community participation occurred in 1987 when the World mmission on Environment and Development (WCED) report detailed the need for public ticipation in sustainable development (WCED, 1987).

1992, the Earth Summit Conference in Rio de Janeiro, Brazil, formally established community rticipation as a central element in sustainable development by including it in several clauses in ;enda 21 (Kelly, 2001). Community participation literature now abounds in many works. any authors such as Arnstein (1969), Pretty (1994) and Cornwall (1995) have written widely community participation and have, even, attempted to identify different typologies of rticipation. While these authors have come up with different types of participation, though, ost of them have basically modified Arnstein's (1969) typology of participation. Arnstein 969) is, perhaps, the most well known for extensive work on typologies of participation. rnstein's (1969) work on typologies of participation is now widely quoted and/or adopted in search. The concept of community participation is the major theme of this study and, therefore, ns through all the sections of the thesis.

.2 Community Participation in the Project Cycle of Development Projects

'arious studies indicate that development projects rarely create space for community articipation in all stages of the project cycle. Many projects have failed in the past because of ack of or limited community participation in project activities. For instance, reporting on rrigation schemes in India, Shah *et.al.* (2000) cited in APO (2002) observed that projects, pecifically, intended to enhance farmers' capacity for management failed in the past because of erious project design and implementation weaknesses. The same view is shared by Bastidas 2004) who observed that water and sanitation projects in Colombia had, largely, failed in the past due to lack of community participation in design, implementation and management of the projects. Bastidas (2004) recommended that it is important to involve the communities in every phase of the project in order to ensure ownership and user's responsibility for facilities.

tanga (2000) in his study of Non-Governmental Organizations (NGOs) in Western Kenya derscores the importance of community participation in the project cycle. Using data collected m primary and secondary sources through use of a structured questionnaire, documental iew and interviews, Matanga (2000) observed that although the NGOs involved beneficiaries the initial project stages e.g. determining their development needs, there was no emphasis on mbers' participation in the planning of the projects' activities. However, Matanga (2000) served that there was good community participation in the implementation stage because 92% the respondents indicated that they participated in decision-making processes, 90% were nsulted on matters to do with further improvement of project activities, 61% did cost-sharing project activities, while 55% provided labor to project activities. Matanga (2000) also served that 74% of the respondents participated in trainings organized by NGOs. Matanga 000) concluded that although the NGOs, to a fairly large extent, involved beneficiaries in velopment projects, they did poorly on community participation in planning of the projects.

a related study by Wanyama (2003) on Community-Based Organizations (CBOs) and local lf-help groups in Western Kenya, and in which he critically examined the contributions of ese organizations to local level sustainable development with special regard to the 'bottom-up' pproach, Wanyama (2003) observed that community participation was skewed towards project rmulation. Using data collected from 350 respondents through primary and secondary sources y use of a structured questionnaire, interviews, Focus Group Discussions (FGDs) and ocumental review, Wanyama (2003) observed that in those projects directly supported by GOs, only 48.7% of the respondents participated in project identification whereas 51% did not. n project formulation, 66.7% indicated they participated while 33.3% indicated they 'would' be nterested to participate in the projects upon learning what they stood to gain from them. In the mplementation stage, Wanyama (2003) observed that 94.6% of the respondents participated while 5.4% did not. Wanyama (2003) observed that community participation in CBOs and self-help development projects tended to be minimal in the project identification stage, but rose in the project implementation stage, partly due to the availability of resources from external assistance. Wanyama (2003) recommended that other area-based studies be conducted to establish the impact of the social, economic and physical environments on the contribution of CBOs to sustainable development, particularly, in Western Kenya.

owever, Wanyama (2003) did not provide data on monitoring and evaluation so as to give a mplete picture of beneficiary participation in all stages of the project cycle as stated in his jective. Kerkhof (1990) observed that information on monitoring and evaluation is important cause without the information, it is difficult to measure project impact. The current study ndeavors to fill such knowledge gaps by providing data on community participation in all stages f the project cycle.

Manikutty (1998) extensively examined community participation in stages of the project cycle in ater and sanitation projects in India. Using interviews, structured questionnaire, Focus Group Discussions and documental review, Manikutty (1998) collected data from 15 villages with the oal of generating lessons on: integration of community participation into the project at the time f planning; mechanisms for interfacing with the community; the design of the project rganization for participation and the mechanisms devised for sustaining participation and lastly, he learning mechanism employed to enable the project officials and the community to learn rom their experiences and utilize this learning to effect the necessary modifications. Manikutty 1998) observed that while project documents in all the projects talked about the importance of ommunity participation, the clarity with which community participation was conceptualized, the lanning of how it was to be elicited and at what stages, and how it was proposed to be ntegrated into the overall project differed greatly across the projects. Manikutty (1998) noted hat in Kerala state where the local community contributed ideas to design of project omponents, the projects were successful. Manikutty (1998) observed that if the nature of participation is not planned early in the project, it could lead to fragmentation of effort and create a serious problem in integration of the activities implemented at different stages. Manikutty (1998) concluded that failing to have a systematic approach to and understand the factors that facilitate or inhibit participation can lead to waste of time, energy and funds in the name of community participation.

On his part and related to Manikutty's (1998) observation, Drinkwater (1999) in his article on participation in the project cycle cited three major common reasons for lack of active participatory process throughout a project cycle: lack of understanding of what it entails, inappropriateness of the term and lack of training of development practitioners. Drinkwater (1999) recommended that to improve the performance of projects through community

cipation, it is important that project management improve their self-awareness of the tive and interactive nature of project processes.

ers *et.al.* (1994) recognize the importance of community participation in planning and lementation of projects. Sowers *et.al.* (1994) writing a paper on the impact of USAID orted activities in land productivity conservation in Nepal, argued that due to poor ormance of the projects, USAID was forced to change from 'top-down' technical service very to a more 'grass-roots' approach in which farmers participated in the planning and lementation of natural resource conservation. Consequently, projects implemented later wed some degree of improvement over the past ones.

their part, Nair and Krishnakumar (2004) in their study of Pezhumkamukal water supply ject in India observed that the project was successful because 100% of the beneficiaries ticipated in the formulation and execution of the project. Nair and Krishnakumar (2004) again their study of Chevalakkonam water supply project also in India observed that the project was cessful because 100% of the beneficiaries had participated in the selection and execution of project. Nair and Krishnakumar (2004) observed that all other related projects failed because beneficiaries never actively participated in any stage of the projects.

aafas and Philleo (1992) while doing an anlytical review of successful stories of women vironmental projects in India observed that those projects which were succeessful had active rticipation of beneficiaries in the identification and implementation stages. However, Mweene 006) in his study on community participation and empowerment among the rural poor in wembe Valley Zambia observed that community participation remains a challenge to evelopment practitioners. Collecting data through use of semi-structured questionnaire, terviews, Focus Group Discussions (FGDs), direct observation and documental review, Mweene (2006) observed that people's participation in World Vision project activities in wembe Valley was poor because people felt that they were not being involved well enough. hus, whereas World Vision management believed they had facilitated people's participation rocess, Focus Group Discussions (FGDs) revealed that beneficiary participation was more mited to elementary processes and more general issues while main and specific decisions about e programme were still a preserve of the NGO (Mweene, 2006).

.1 Community Participation in the Project Cycle of Afforestation Projects

estaneys and Woodley's (1998) evaluation of 12 afforestation and social forestry projects in rthern Nigeria recorded various reasons why some projects succeeded and others failed. estaneys and Woodley (1998) observed that afforestation and social forestry projects were ccessful in Kano and Jigawa states because the states had used lessons learned from the early ars to increase community participation in decision-making during project implementation. uring later project phases, there was renewed emphasis on beneficiary participation in planning d implementation of the social forestry projects. Westaneys and Woodley (1998) commended that it is important to identify and involve all stakeholders in planning and nplementation of afforestation and social forestry projects in order to, not only create a sense of wnership but also, ensure support for implementation and sustainability of the afforestation fforts.

imilar findings were arrived at by Adeola *et.al.* (2001) in their study on farmers' participation n social forestry in the semi-arid zone states of Bauch, Borno, Jigawa, Kano, Katsina, Kebbi, lateau, Sokoto and Yobe, Nigeria. Using a structured questionnaire to conduct a household urvey on 475 respondents Adeola *et.al.* (2001) observed that lack of local community articipation had led to poor adoption of technology during implementation of the projects. Thus, lthough nursery establishment was one of the core activities of social forestry, only 47% of the armers owned private nurseries.

ratap (2007) in his study of community participation in forest management in Doon Valley, Nepal observed that joint forest management was not as successful as envisaged. Collecting data rom primary and secondary sources using interviews, Focus Group Discussions (FGDs) and locumental review, Pratap (2007) observed that joint forest management was not successful because of communication gaps with regard to the actual parameters of joint forest management in terms of responsibilities and ownership. Pratap (2007) recommended the need for transparency and larger community participation in the planning as well as in decision-making processes in joint forest management. Similarly, Inoue and Hyakumura (2002) writing a paper on Laos' forest policy recommend that local community participation should be incorporated into forest management policy decision-making and that it should entail genuine empowerment.

ka and Sharda (2002), in their paper on land and water care through participatory watershed nagement in India, observed that participatory planning and implementation of watershed nagement programmes is imperative but has largely been missing from India's watershed nagement. Sikka and Sharda (2002) recommended that people's participation should run rough pre-planning of watershed programmes to implementation and management. A similar servation was made by Kumar (2007) on watershed management in Tamil Nadu, India. Kumar 007) discussed community participation in various stages of the project cycle of watershed anagement projects and gave reasons why some projects fail. Kumar's (2007) evaluation of 60 ater user groups in 15 watersheds in the Coimbatore District observed that community rticipation rate was 55% in the planning stage, 44% in project implementation stage and 27% the maintenance stage.

imilarly, Mural *et.al.* (2003) in their evaluation studies of joint forest management projects in dia, observed that lack of community participation in planning process led to gaps in joint rest management. Mural *et.al.* (2003) recommended that in order to make joint forest anagement successful, community participation should be addressed. Eleswhere, Kerkof 1990) observed that the following projects had failed because of lack community participation project identification and planning: Nyabisindu Agroforestry Project, Rwanda; Rural fforestation Project, Zimbabwe; Village Afforestation Project, Tanzania and Turkana Rural evelopment project, Kenya.

hubhain *et.al.* (2008) in their study on social impacts of forestry in five case study areas of rigua, Shillegah, Newmarket, Causeway and Brosna and Kerry in Ireland observed that lack of ommunity participation during implementation makes social forestry projects fall behind chedule. Using data from interviews with stakeholders who were sampled using the 'snowball ffect' method, Dhubhain *et.al.* (2008) observed that there was lack of community participation in project planning in one of their case study areas (Newmarket). This had made Newmarket lag behind the other areas in forest management. Dhubhain *et.al.* (2008) recommended that future sustainable forest management should involve local communities and other stakeholders in terms of consultation in the entire project planning process.

related case, Jansens and Wildemeersch (2002) writing a paper on social learning, active enship and policy making in urban forest planning in Flanders, Ireland, observed that lack of munity participation in prioritizing project needs can lead to improper targeting of project ventions. Jansens and Wildemeersch's (2002) findings indicated that the planning process in n forest projects in Flanders was limited to administrators and policy makers. Citizens and eholders were not actively involved in the localization of new project sites. Based on the lts of the study, Jansens and Wildemeersch (2002) recommended a social learning approach articipation, involving various societal groups throughout the project cycle of urban forest jects.

rly related to Jansens and Wildemeersch's (2002) work though, somewhat different in roach, are Pandey's (2007) and Chokkalingam *et.al.* (2006) findings. Pandey (2007), in his er on community participation in forest conservation, observed that the practice of forestry s changed dramatically over the last 30 years and that in addition to its traditional role in the tection and management of trees, forestry now takes a holistic approach to resource use and esses the need for the participation and active involvement of local communities and keholders in all aspects of design and implementation of forestry programmes. Chokkalingam *al.* (2006) in their paper on China's forest rehabilitation recommended that any sustainable forestation project should actively involve the local communities as key participants in cision-making, implementation and monitoring to ensure that they have a stake in the tcome. Similarly, Bharati and Datta (2008) who, in their paper on community participation in habilitation of watershed ecosystems in India observed that in the past local communities were either actively involved nor consulted in the planning and implementation of watershed rojects, recommended that public participation should be sought in watershed planning and anagement.

.3 Factors Determining Community Participation in Development Projects

A number of factors influence the extent and nature of people's participation in development projects. These include economic, social-cultural, environmental, political and project implementation related factors. Various researchers have done studies on the subject and come up with important findings. For instance, Jakariya (2000), carrying a study on community

icipation in water projects in India, observed that peoples' participation was influenced by cational level, occupational structure, economic benefits and age of respondents. Jakariya 00) observed that economic benefits greatly influenced peoples' participation in the projects. haps this, to some extent, justifies Oakley *et.al.* (1997) observation that people are usually ling to participate in projects because of anticipated project benefits such as rewards in cash materials. It would be interesting to find out how the results of Jakariya (2000) compare with ults of the current study.

ji (2007), doing a study on socio-cultural factors associated with the participation of local men's associations in rural community development projects in Nigeria, observed that provision of rewards to women's associations highly influenced their participation in velopment projects. Using data collected from 60 purposively selected women's associations rough use of structured interview schedules and Focus Group Discussions (FGDs), Deji (2007) ncluded that provision of rewards to community development associations is a vital means of couragement and motivation for mobilizing self-help efforts in community development. Deji 007) recommended that self-help efforts should be mobilized and encouraged through award of wards for active beneficiary participation. Deji (2007) claimed that this would enhance stainable development at the community level. But unlike Deji (2007) who recommended that rticipation should be encouraged through rewards, the current study argues that participation in roject activities should not be pegged on rewards but rather on beneficiaries' self-initiative ased on a genuinely identified problem and only aided with facilitation from project sponsors. ncouraging rewards for participation will only encourage and nurture the dependency syndrome haracteristic of many rural communities.

Khanye (2005) in his study on issues affecting participation of the poor in Inkosikazi communal ands in Bubi, Zimbabwe, noted factors that influence beneficiary participation in development rojects. Using data collected from simple randomly selected respondents through a household questionnaire and Focus Group Discussions (FGDs), Khanye (2005) observed that only 5% of the poor households participated in Heifer and Dairy Goat projects with the simple reason that they could not afford to pay back the money for the heifers and dairy goats. Based on his results, Khanye (2005) made one key recommendation: outsiders should not hurry to facilitate development projects in any area but should spend time, probably up to two years, relating with

ble so that they have a profound understanding of the issues that affect them, particularly, the r people's participation in development projects.

shinya (2007), carrying out a study on participation and devolution in Mahenye and minyami in Zimbabwe's Communal Areas Management Programme for Indigenous ources (CAMPIRE) program, observed that people's participation in CAMPFIRE projects minimal. Using Focus Group Discussion (FGD), interviews and documental review tools to lect data, Mashinya (2007) observed that local people's participation in the projects was imal because there were no proper structures for project management in terms of ponsibilities. Mashinya (2007) concluded that local community participation was lacking in projects and consequently recommended that projects must, as a matter of priority, foster the ergence of resilient, legitimate, transparent and accountability institutions in future planning d implementation of community based natural resources management initiatives.

nwaja (2001) writing a paper on the effects of community participation on project performance derscores the function of participation in decision-making. Using data collected from 132 frastructural projects in 99 randomly selected rural communities in Bastistan, Pakistan, through e of a questionnaire, Khwaja (2001) set out to provide 'a complete theory' of participation i.e. comprehensive explanation for the poor performance of development projects. Khwaja (2001) bserved that greater community participation in non-technical decisions of infrastructure rojects was associated with higher project outcomes whereas the opposite held for technical ecisions. Khwaja (2001) concluded that communities should never be given ownership over ertain project decisions because they may be too large a burden placed on community articipation as a cure-all. Although Khwaja's (2001) argument may hold for highly technical rojects, the researcher argues that the same may not apply to afforestation projects, which have heavy bearing on social capital and networks and therefore call for community involvement rom the very start of the projects.

Matanga (2000) in his study on Non-Governmental Organizations (NGOs) and the politics of rural development in Western Province Kenya observed that benefits from NGO projects enhanced beneficiary participation in project activities. Collecting data from primary and secondary sources through use of structured questionnaire, documental review and interviews,

itanga (2000) observed that 85% of the beneficiaries continued to participate in NGOs project ivities because they benefited from the projects in terms of income-generation.

milarly, Wanyama (2003) in his study on the contribution of local organizations to sustainable velopment in Western Kenya and using same methodology as Matanga (2000), and collecting ta from 350 respondents from 32 administrative sub-locations observed that 57.7% of the spondents participated in the projects because of the benefit motivation factor. Wanyama 003) observed that 94% of the respondents participated in the project implementation stage. cording to Wanyama (2003), the 'benefit factor' seemed to be the main explanation behind e increased rate of participation in the implementation stage. Wanyama (2003) observed that in e project identification stage where the likely benefits of the project were not certain, rticipation was low. But participation increased in the formulation and implementation stages here the benefits of the projects were at least probable or real. Wanyama (2003) concluded that rticipation of members in CBOs development projects tended to be minimal at the project entification stage, but rose in the project implementation stage, partly, due to the availability of sources from external assistance. Wanyama (2003) recommended that other area-based studies conducted to establish the impact of the social, economic and physical environments on the ntribution of CBOs to sustainable development, particularly, in Western Kenya. However, the searcher feels that Matanga (2000) and Wanyama (2003) should have added more weight to eir valuable findings by discussing about community participation in the project identification d monitoring and evaluation stages. Although this study is different from Matanga's (2000) d Wanyama's (2003) studies in terms of focus, it has endeavored to generate information on mmunity participation at the various stages of the project cycle to bridge this important nowledge gap.

ebremedhin (2004) writing a paper on economic incentives for soil conservation in East frican countries observed that the soil and water conservation projects have not been ccessful. Gebremedhin (2004) observed that the adoption of soil conservation practices still mains low even after concerted efforts by government agencies because of lack of real rticipation of beneficiaries in soil and water conservation in many of the East African untries. Gebremedhin (2004) singled out Kenya and remarked that implementation of soil and

r conservation efforts have been hampered by the lack of involvement of beneficiaries in the ning and implementation of conservation projects.

somewhat related study by Suda (2000) on gender, culture and environmental conservation lyando and Kericho districts of Western Kenya, the author observed that farmers with small es of land on very slopping terrains tended to participate more actively in conservation vities than those with larger pieces in less slopping areas. Suda (2000) concluded that efforts ncrease the level of community participation in environmental conservation should seek to ance the capacity of rural families and communities, promote equitable access to productive cultural valuable resources, raise environmental awareness and encourage greater ticipation among all the development partners dealing with environmental issues in River ando basin.

. 1 Factors Determining Community Participation in Afforestation Projects

ctor and Bakare (2004), in their study on rural livelihood benefits from participation in the *ngya* agroforestry system in Ondo state, Nigeria, observed that farmer participation was high the implementation stage of plantation forestry. Collecting data from 115 randomly selected mers through use of a structured questionnaire (drawn in English and translated into Yoruba), ctor and Bakare (2004) observed that the local people participated in the *taungya* system cause of benefit factor. Through the *taungya* system, the farmers were able to get other portant livelihood sustaining products from the forests. Victor and Bakare (2004) also served that most farmers within the 35–54 year age bracket participated more in the *taungya* stem than other categories because they are able to plant trees and harvest them within their espan.

laskey *et.al.* (2003), carrying out a study on participation in community forest management in udi-damgade, Nepal, explored in detail the factors that affect farmer participation in community rest management. With the major objective of determining which socio-economic factors ffect levels of farmer participation in Ludi-damgade community forest management, Maskey *t.al.* (2003) used a two stage model to estimate community participation level as a function of cial status and benefits received from forest management. An ordered probit model was used determine the effect of socio-economic characteristics upon participation. A linear model was

o used to identify the relationship between the benefits received from forest products and the el of participation from the predicted level of participation. In the first model, participation s taken to be a function of age, caste, gender and landholding. Level of education was dropped m the equation as it was determined by the caste and gender and was, therefore, highly rrelated with those variables. The second model (Linear) posited forest product benefits as a nction of participation. Survey data were obtained from 443 households and 10 key informants rough use of interviews and questionnaire (developed in Nepalese and translated into English). laskey *et.al.* (2003) observed that age was a determinant of participation. Maskey *et.al.* (2003) bserved that older people tended to participate more in the community forestry programme than unger people. Maskey *et.al.* (2003) attributed this to the fact that older people are retired and ve free time to participate in meetings. Maskey *et.al.* (2003) also observed that women rticipate more in forest management than men across the different levels of participation.

n ethnicity, Maskey *et.al.* (2003) observed that caste distinctions were not related to the level of rticipation. However, landholding was positive and statistically significant; the hypothesis eing that wealthier people are more likely to participate in higher levels of management and the ssumption that they have to maintain their influential status and perceive higher benefit with ss opportunity cost of participation. Maskey *et.al.* (2003) two-stage model results indicated that orest products such as fuelwood and fodder were a factor of participation. Maskey *et.al.* (2003) oncluded that age, gender and household income had significant effects on participation in ommunity forest management and recommended that research be carried out to determine why vomen participate more than men at different levels of community forest management. However, Maskey *et.al.* (2003) remarked that the study was conducted only on one site of the ommunity forest and during a limited time. As such, the results were constrained by the small sample and lack of survey data from other forest communities.

One salient feature though, between Victor and Bakare's (2004) and Maskey *et.al.* (2003) methodologies is that their data collection tools were designed in local languages making it easier for, even, illiterate respondents to comprehend. The current study differs slightly from Victor and Bakare's (2004) and Maskey *et.al.* (2003) methodologies because the questionnaire was designed in English. However, during the administration of the questionnaire, explanations were done in *Kiswahili,* Kenya's national language. However, by Maskey *et.al.* (2003) indicating

t the study was conducted in one community forest and in a limited time period limits the eralization and applicability of the results. Maskey *et.al.* (2003) results though, have greater evance to the current study because the researcher was also looking at the factors determining mmunity participation in afforestation projects. Unlike Maskey *et.al.* (2003) the researcher ed Chi-Square statistic to test the relationships between participation (dependent variable) and ferent variables such as economic, environmental, and socio-cultural factors (independent riables).

elated to Maskey *et.al.* (2003) work is Chowdhury's (2004) study on people's participation on social forestry project in Zathila and Betaga villages in Gazipur District, Bangladesh. Setting it to explore the relationship between farmers' socio-economic background and their extent of rticipation in social forestry and obtaining data from 52 respondents through questionnaire, terviews and documental review, Chowdhury (2004) observed that people's level of education fluenced their participation in the social forestry project. Chowdhury (2004) also observed that 00% of the respondents in Zathila had joined the social forestry project because of anticipated conomic benefits, 69% joined because of anticipated environmental benefits while 39% joined ecause of social status. From Betaga, 100% of the respondents had joined because of nticipated economic benefits, 100% joined because of anticipated environmental benefits while % joined because of social status. Chowdhury (2004) also observed that poor socio-economic ackgrounds of farmers in Zathila in terms of occupation and level of income influenced the xtent of their participation in the social forestry project. Thus, Chowdhury's (2004) and Maskey *t.al.* (2003) findings have significant relevance to this study as one of the objectives was to investigate the factors determining community participation in afforestation projects in River Nyando basin.

2.4 Mechanisms for Sustainability of Activities in Development and Afforestation Projects

The term sustainability was originally coined as sustainable development and defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their needs (WCED, 1987; Brudtland, 1987). Since then, the term has been applied to a wide range of development initiatives. Concerning development projects, Honadle and Sant (1985) define sustainability as the ability to manage post-project dynamics.

ording to Waafas and Philleo (1992), sustainability is the ability of the project to support lf over the course of time. Waafas and Philleo (1992) argue that training and skill-building ects are key factors in the sustainability of a project.

hough there has been a lot of emphasis on sustainability in development initiatives, not many mples abound to show successful achievement of the same. Projects, most often, fail to vive beyond phase-out because they do not put in place effective mechanisms for project tainability during project planning and implementation. Those projects, which develop chanisms for sustainability, not only achieve their objectives and goals but also, make impact d serve as examples for replication in other areas and/or design of future projects.

me authors have written on successful and failed projects and the mechanisms that they have ployed to be sustainable. Kerkhof (1990), for instance, observed that when afforestation tivities in 'model farms' in Nyabisindu, Rwanda, were found to have little impact, project anagement changed approach and recommended widespread scaling up of activities at dividual farmers' level. From the project's viewpoint the 'model farms' had, not only been latively easy to control but had also, been convincing to the visitors and re-assuring to the nders. However, their impact was dismally low hence, the change.

a related case, Kerkhof (1990) observed that in a soil and agro-forestry project in Usambara, anzania, project staff realized that although centralized tree nurseries had impressive-looking edling production figures, the nurseries had little chance for sustainability because people were ot trustful of village leadership. There was also the danger of unpaid village nursery attendants eaving their jobs if village funds were scarce. Because of this realization, project staff ecommended for de-centralization of the nurseries. This way, individuals would be encouraged o raise seedlings for commercial purposes hence, generating income for the sustainability of the nurseries. Kerkhof (1990) further observed that when managers in a rural afforestation project in Zimbabwe realized that the project was not achieving intended outputs in the first phase because of emphasis on central tree nurseries, they changed approach to individual and communal nurseries and shifted emphasis from *eucalyptus spp.* tree seedlings production to indigenous and fruit trees production.

hof (1990) also noted that an erosion control and afforestation project in Gursum, Ethiopia, l because of three reasons. Firstly, not only were the tree nurseries categorized into fruit , coffee seedlings and forestry seedlings, but were also scattered making it difficult for le to access seedlings. Secondly, the Ministry of Agriculture staff, rather than encouraging initiative, provoked resistance by trying to force the villagers to create nurseries. Thirdly, illagers did not see the reason in setting up their own nurseries when they could get most of seedlings free of charge from central nurseries. These disappointing results forced project agement to explore other options such as providing farmers with the means to grow more able seedlings such as coffee and fruit trees and also by letting the nurseries become the onsibility of an interested group in the village rather than the whole community.

ewhere, Kerkhof (1990) observed that the following projects were successful and had proved tainable: PAFSAT (Promotion of Adapted Farming System based on Animal Traction) in meroon where change of approach in farm trials from non-participation of farmer to active mer participation led to successful adoption of technology by other farmers and Nyabisindu roforestry project in Rwanda where approach from involving refugees to involving local mmunities led to large scale adoption of technology. Kerkhof (1990) recommended that long- m interventions such as afforestation and reforestation should not be targeted at highly mobile d unpredictable populations but should involve long-term inhabitants.

estaneys and Woodley (1998) in their evaluation of 12 afforestation and social forestry ojects in Northern Nigeria observed that the projects were successful in only two states ecause the states had used lessons learnt from the early years to increase community articipation in decision making and to develop programmes to address the role of women in fforestation efforts. Thus, one of the lessons learnt was that it is important to identify and nvolve stakeholders in planning and implementation of afforestation projects in order to create a ense of ownership and to ensure support for sustainability of the afforestation efforts. Sikka and Sharda (2002) writing a paper on land and water care through participatory watershed management in India observed that project sustainability can be achieved through the formation of local level people institutions for the day to day running and management of project affairs. Local level institutions can take over the project activities after donor/sponsor withdrawal or phase-out of the project.

imilalry, Kumar (2007) in his paper on why community participation fails after agency ithdrawal observed that watershed management projects in Tamil Nadu, India, fail because the rojects have no formal or informal organizations to run the affairs of the projects nor do they ave provisions for payments for local level infornal organizations' leaders. Mural *et.al.* (2003) n their evaluation reviews of joint forest management in India recommended that for watershed anagement to be sustainable, there is need to instill a sense of effective leadership in all levels nd also that there should be statutory institutional support and tenurial rights.

Dhubain *et.al.* (2008), carrying out a study of the social impacts of forestry in Ireland, observed hat in one area where stakeholders were involved in the implementation of a social forestry roject, social forestry was successful and sustainable but other areas were not successful ecause stakeholders were never involved. Sowers *et.al.* (1994) observed that USAID was forced o change approach in natural conservation projects in Nepal from 'top-down' technical service lelivery to a more 'grassroots' approach in which farmers participated in every aspect of the project. USAID realized the important role of local institutions in project management and hence, facilitated the formation and institutionalization of these institutions.

Waafas and Philleo (1992) in their paper on 'women and the environment' projects observed that training and skill-building aspects are key factors in the sustainability of projects; meaning that projects' survival should not depend on continued external support but on locally trained implementers. Waafas and Philleo (1992) further observed that projects which incorporate income-generating components enhance chances of sustainability. Kerkhof (1990) in an evaluation of afforestation and agroforestry projects in Africa observed that an ambitious reforestation project in Norhern Senegal failed in several phases because of lack of consultation and contribution from the local people. This realization led to change of tact and project management recommended that tree planting be undertaken after thorough consultattion with the community and when there is significant financial contribution from the local people.

In a related case, Kerkhof (1990) observed that a village agroforestry project in Koro, Mali, failed to make impact because the government and the forest service used coercive methods of windbreaks establishment. While these tactics could ensure that seedlings were planted, they provided no motivation for protecting them hence, poor survival rates. This made the

vernment and the forest service to diversify activities by placing emphasis on initiatives which e local people felt were relevant. Initially seedlings were also given free of charge but perience showed that people did not take much care of seedlings. Consequently, the vernment introduced charges on seedlings and also encouraged decentralization of tree rseries and stepped up the promotion of micro-nurseries owned by individual farmers. After is, the project became successful and sustainable. This study borrows immensely from the ove literature for interpretation of findings because one of its objectives was to explore the echanims that the affoerstation projects in River Nyando had put in place for the sustainability f afforestation activities.

.5 Literature Gaps

here is still lack of good appreciation of community participation in the project cycle anagement of afforestation projects. Although some researchers have generated valuable data n community participation in projects, their emphasis has been on project identification and mplementation while planning, monitoring and evaluation have been overlooked. Yet, planning rovides the basis for formulating project indicators and monitoring and evaluation form the ackbone of projects by providing lessons for future improvement. This study aims to generate nformation on community participation in the project cycle of afforestation projects, especially, n the monitoring and evaluation stage where there is a literature gap. Again, failure to recognize he importance of factors that determine community participation in afforestation projects often eads to poor targeting of interventions because project managers fail to understand the socio- ultural, economic, political and environmental settings of the target communities; a gap which his study endeavors.

2.6 Conceptual Framework

River Nyando basin supports a population of about 746,515 (Mungai and Nyakango, 2004). The basin is, however, experiencing high levels of environmental degradation, particularly deforestation, soil erosion and water pollution (Noordin and Bashir, 2000). The desired situation, therefore, is one of alleviating environmental degradation through 'bottom-up' (alternative development paradigm) approach to conservation measures such as afforestation. This study is, therefore, of the view that the solution lies in community participation in all the stages of the

cle of afforestation projects. When people participate they, not only know best what they need t also, understand what the project entails, take responsibility and control (own the project) nd hence, make it sustainable (Nampila, 2005; Oakley, 1991; Kok and Gelderbloem, 1994).

the context of River Nyando basin, community participation in the project cycle of forestation projects has been taken to mean: project management carrying out community onsultations to ensure that community needs are properly assessed and prioritized and project ites well identified (project identification); project management and local community doing oint project planning meetings, project management, creating awareness among community nembers about duration of the projects and community contributing to the implementation of the rojects (project planning); project management and beneficiaries ensuring that the projects are mplemented in an organized way so as to achieve intended objectives, goals and impacts hrough tree planting and nursery establishment, capacity-building, constituting of strong local evel management institutions and holding of regular stakeholder forum meetings (project implementation); and project management and beneficiaries learning lessons together, reflecting and making necessary adjustments and shifts in relation to relevance of project objectives, efficiency, effectiveness and sustainability through participatory monitoring and evaluation, joint development of monitoring and evaluation tools and community's accessibility to monitoring and evaluation reports (monitoring and evaluation).

The study hence, recognizes the central role of the community in the whole process of the project cycle. The framework for this study borrows heavily from the concept of project cycle management (PCM). Project cycle management is anchored on the premise that sustainable development would occur when members of the local community, where a project is implemented, participate in all stages of the project (Blackman, 2003; CORE, 2006). Community participation in afforestation could also be achieved if the community is adequately consulted and actively involved in the entire process of afforestation development through the 'bottom-up approach to decision-making' (ADP).

The study also borrows greatly from the sustainable livelihoods approach (SLA). Sustainable livelihoods approach is centred on people and their livelihood strategies. Sustainable livelihoods approach is holistic, people-centred and integrates multiple actors including communities, private

ctor, NGOs and government authorities (DFID, 2001). The sustainable livelihoods approach is remised on the assumption that a community would participate in afforestation development ased on the benefits they would draw from afforestation vi-avis others factors affecting their ves. The interplay of the actors and processes has been captured in the framework (Figure 2.1). n the framework below, for sustainable afforestation development in River Nyando basin to ccur, various actors (Government, Non-governmental organizations and local communities) hould work hand in hand through three processes. First, there would be need to assess the assets f the beneficiaries in the basin through the sustainable livelihoods approach (SLA). Secondly, here would be need to fully involve and empower the local communities in all decisions egarding afforestation development through the alternative development approach (ADP). Thirdly, there would be need to actively involve local communities in the afforestation activities hrough the project cycle management approach (PCM). It is envisaged that when this has been chieved, the outcome would be effective community participation in afforestation development, consequently, resulting into sustainable afforestation activities.

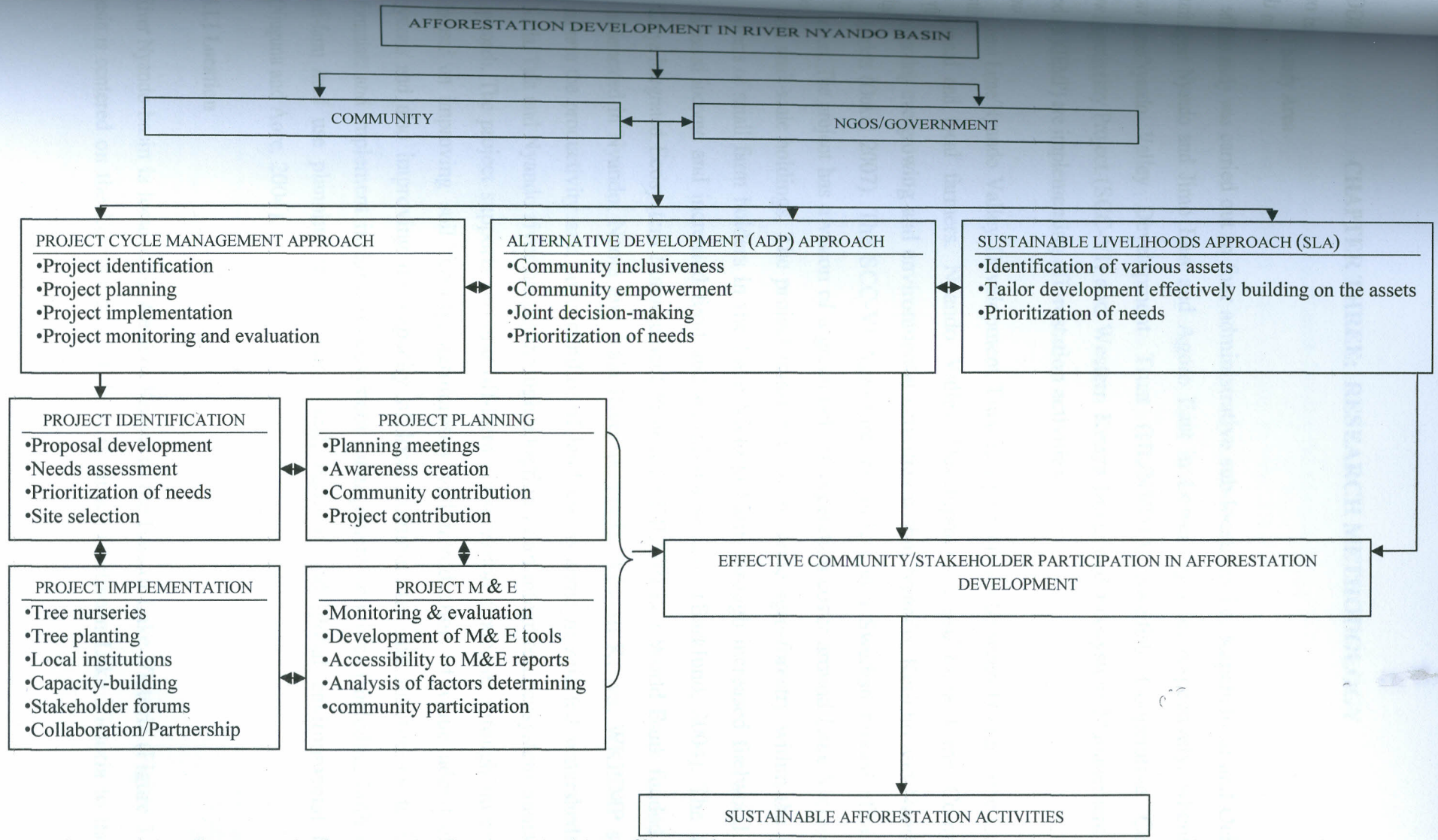

Figure 2.1: Conceptual framework for sustainable afforestation development in River Nyando basin: Source: *Author's conceptualization*

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Study Area

This study was carried out in four administrative sub-locations i.e. Kapchebwai and Ochoria in Upper Nyando and Jimo East and Agoro East in Lower Nyando, respectively, where Homa Lime/Nyando Valley Development Trust (HL/NVDT), Swedish Cooperative Centre/VI Agroforestry Project (SCC-VI) and Western Kenya Integrated Ecosystem Management Project (WKIEMP) are implementing afforestation activities.

Homa Lime/Nyando Valley Development Trust is a partnership between Homa Lime Company Limited and local farmers. Nyando Valley Development Trust/Homa Lime Company is promoting tree growing and environmental activities within Nyando, Kericho and Nandi South Districts (Ouko, 2007). The SCC-VI Agro-forestry project is a Swedish funded afforestation project. The project has a vision of a green belt of vegetation cover around Lake Victoria basin with small-scale holdings. The project mission is to integrate agro-forestry within the farming systems of small farm holders in the Lake Victoria basin through increased fuelwood supply, increased income and increased food and nutritional security (Barklund, 2004). The Western Kenya Integrated Ecosystem Management Project (WKIEMP) is a World Bank funded project implemented in Nyando, Nzoia and Yala River basins in Western Kenya. WKIEMP seeks to improve the productivity and sustainability of land use systems in selected watersheds in the Nzoia, Yala and Nyando river basins through adoption of an integrated ecosystem management approach. The project supports on- and off-farm conservation strategies through interventions focused on improving soil fertility, agroforestry and introduction of value added cropping systems and also improving the capacity of local communities and institutions to identify, formulate and implement integrated ecosystem management activities (including both on- and off-farm land use planning that capture local, national and global environmental benefits (Njuguna and Aore, 2004).

3.1.1 Location

River Nyando basin is located in Western Kenya to the East of Lake Victoria (Figure 3.1). The basin is centered on the Equator at $35^{0}10E$. It is situated between Lake Victoria to the West,

inderet Hills to the East, Nandi escarpment to the North and Mau escarpment to the South. The nd slopes, generally, in the Northeast–Southwest direction. Altitude varies from about 1000m bove mean sea level (amsl) at Lake Victoria to over 2000m (amsl) in the uphill regions. River yando and its tributaries drain the Nyando basin. River Nyando, rising from Mau escarpment, Western Mau) forms the main drainage channel. The river has a steep gradient in the upstream ut the gradient gentles downstream in the Kano plains. In the lower parts of the catchment, the iver dissipates in a swamp area and finally discharges into the Nyakach Bay in Lake Victoria. he Nyando catchment extends over an area of 3,600km^2. Thus, the longest stretch of River yando is 150km (Noordin and Bashir, 2000).

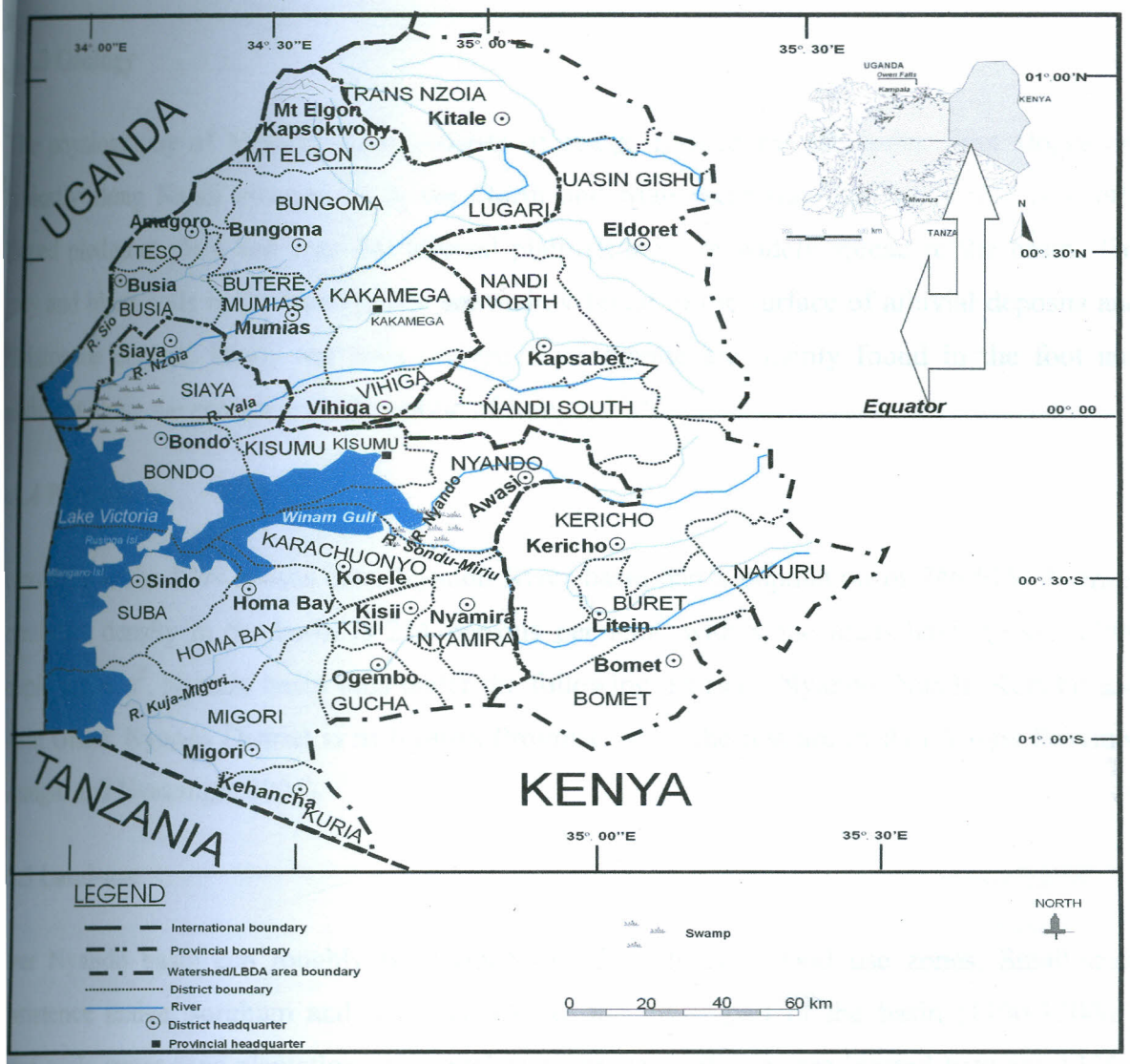

Figure 3.1: Location of River Nyando Basin. Source: LBDA, 2005

1.2 Climate

he climate of Nyando basin is sub-humid with a mean annual temperature of 23^0C. The mean nual rainfall varies from 1000mm near Lake Victoria to over 1600mm in the highlands. The nual rainfall pattern shows no distinct dry season. It is tri-modal with peaks during the long ins (March-May) and short rains (October–December). The third peak occurs in August. The infall is controlled by the northward and southward movement of the Inter-Tropical onvergence Zone (ITCZ). However, altitude, proximity to the highlands and nearness to the ke causes considerable spatial variations in rainfall. The areas with minimal rainfall are found round the plains and lakeshore while the highland areas have high rainfall (Republic of Kenya, 002).

.1.3 Geology

The physiography of Nyando basin consists of scarps formed by rift faults. Foot slopes are ypically along Nandi escarpment in the North and Mau escarpment in the South. A gently loped piedmont plain and very flat alluvial plain (Kano) are widely spread in the basin. The grey and black soils in the Kano plains are mainly found in the surface of alluvial deposits and Pleistocene deposit. Sandy red soils derived from granite are mainly found in the foot and piedmont along the escarpments (Republic of Kenya, 2002).

3.1.4 Population

According to the 1999 census data, Nyando River basin had a population of 746,515. Average population density in the basin is 214 persons per Km^2, with some areas having over 1,200 people per Km^2. Nyando basin falls under the following districts: Nyando, Nandi, Kericho and Uasin Gishu. Nyando District is in Nyanza Province while the rest are in Rift Valley Province (Mungai and Nyakango, 2004).

3.1.5 Land-use

River Nyando basin can roughly be divided into five different land use zones. Small-scale subsistence maize, sorghum and rice characterize the lower part of the basin (1100-1300m). Large-scale sugar cane plantations and smaller sugar cane schemes are located between 1300m

d 1700m. Coffee plantations are located between 1600m-2000m. Small-scale tea farms and ge tea estates are located between 1900m-2100m. Relatively large-scale maize and rticulture farming characterize the areas above 2100m. The main livelihood strategy in yando basin is farming with 48% of the households directly depending on agriculture. The ajor subsistence crops grown include maize 52.5% sorghum 42.3% beans 13.1% groundnuts 8% green grams 1.45% and cow peas 2.9%. Most of the basin is continuously cropped except the two remaining forest areas of Tinderet and Mau, which are getting heavily deforested Mungai and Nyakango, 2004).

3.1.6 Hydrology

iver Nyando has four major tributaries; Ainabngetuny and Mbogo, which originate from Nandi District and Nyando and Awach, which originate from Kericho District. The gradient of River Nyando is steeper upstream but gentle downstream. The river originates from areas of high ainfall and, therefore, has high stream discharge and floods are experienced in the lower course of the river. Flooding is an annual phenomenon, which has adverse effects on the community Mungai and Nyakango, 2004).

3.1.7 Soils

Various soil types are found in the basin. The soils of hills, plateaus and foot slopes are excessively drained and include *Phaeozems, Lithosols, Regosols and Cambisols*. The soils of uplands are well drained and include *Acrisols, Nitosols, Cambisols and Ferrasols*. The soils of the plains are moderately well drained to imperfectly drained and include *Vertisols, Planosols, Gleysols and Fluvisols*. The soils found in swamps are very poorly drained and include *Greysols and Histosols* (Mungai and Nyakango, 2004).

3.1.8 Vegetation

River Nyando basin does not have much variety in vegetation types. The Kano plains are covered in scrubby Savanna and croplands. The upper reaches or the highlands have natural evergreen forests, plantations of tea and cropland (Onyango, 2008; Mungai and Nyakango, 004).

1.9 Education

he drop-out rate at primary in Nyando district is 3% for boys and 6.2% for girls. At secondary, e drop-out rate is 3% for boys and 6.2% for girls. According to the 1999 estimates, there were dult literacy classes in the district with a registration of 221 males and 1,769 females. The drop-ut rate was 46.2 for males and 40.5 for females. The literacy levels are 91.3% for males and 7% for females, respectively (Republic of Kenya, 2002).

3.2 Research Design

A research design guides the process of collecting desired data (Mouton, 1996; Kothari, 2006). Mugenda and Mugenda (2003) define descriptive research as a process of collecting data in order to test hypotheses or to answer questions. This research was of the descriptive type and adopted the cross-sectional survey approach to data collection. Data was collected from a sample of 150 households representing a study population of 1,928 households. The study was carried out in three stages. Stage I involved the administration of a standardized questionnaire to sampled respondents (heads of households) in Ochoria and Kapchebwai sub-locations in Upper Nyando and Jimo East and Agoro East sub-locations in Lower Nyando. Stage II involved Focus Group Discussions (FGDs) with purposively selected community members. Stage III involved interviews with purposively selected key informants from SCC-VI, WKIEMP, HL/NVDT, Ministry of Agriculture, Forest Department, and Ministry of Planning and National Development. The researcher pre-tested 10% of the questionnaires before actual data collection. Pre-testing of the questionnaires was done in those sub-locations where the projects are implementing activities but which were not sampled for the study. In Upper Nyando, pre-testing was done in Homa Lime sub-location while in Lower Nyando, pre-testing was done in Asao sub-location. Pre-testing was necessary to allow the researcher make meaningful observations regarding time taken for giving responses, clarity of questions and possible repetitions and hence, subsequent mitigation of the same during actual fieldwork. The pretested questionnaires were improved in content and focus.

3.3 Study Population

The study population consisted of households participating in the activities of the three afforestation projects. Thus, the study population consisted of 1,928 households involved in

afforestation activities in the four administrative sub-locations from which the researcher selected the study sample of 150 households. The sub-locations were selected using simple random sampling. The administrative sub-locations were selected from the sites where the afforestation projects are implementing activities (Table 3.1).

Table 3.1: Project Focal Sub-locations

Upper Nyando	Lower Nyando
Homal Lime	Jimo East
Kapchebwai	Agoro West
Ochoria	Asao
Koitaburot	Achego
	Agoro East

Source: Field data - Reconnaissance survey - 2007

After simple random sampling, the selected sub-locations and study population were as indicated below (Table 3.2).

Table 3.2: Study Population

No	Section	Sub-Location	Number of Households
1	Upper Nyando	Kapchebwai	740
2	Upper Nyando	Ochoria	173
3	Lower Nyando	Jimo East	503
4	Lower Nyando	Agoro East	512
Total			**1,928**

Source: Field data - Reconnaissance survey - 2007

The study population was obtained from the lists of HL/NVDT, SCC-VI and WKIEMP projects and updated by the researcher during reconnaissance survey through the assistance of the provincial administration (Village Headmen, Assistant Chiefs and Chiefs).

3.4 Sample Size

Gay (1981) cited in Mugenda and Mugenda (2003) suggests a number of criteria for sample selection. For instance, Gay (1981) suggests that for correlational research, 30 cases or more are required; for descriptive studies, 10% of the accessible population is enough and for experimental studies, at least 30 cases are required per group. Since this study was descriptive, the researcher used Gay's (1981) cited in Mugenda and Mugenda (2003) methodology to select study sample from the study population of 1,928, with heads of households as the main respondents.

Thus,

$$\frac{10}{100} \times 1{,}928 = 192.8$$

According to Gay's (1981) 10% methodology, the study sample was, therefore, 192 respondents. However, the researcher worked on a sample of 150 households instead of 192 because some of the respondents resided in the urban centres and were not fully engaged in farming activities. They could not give the required information and hence, were excluded from the sample. The difference i.e. 42 households were treated as a sampling error. According to Kothari (2006), sample surveys do imply the study of a small portion of the population and as such there would naturally be a certain amount of inaccuracy in the information collected. In other words, sampling errors arise on account of sampling and they generally happen to be random variations in the sampling estimates around the true population values. The following formula was used to estimate the sampling error:

$$\pm t \times \sqrt{\frac{pq}{n}}$$

n this formula, t corresponds to the t-statistic, which is determined by the confidence level at hich the significance of the difference is tested. Typically, significance testing is conducted at he 95% confidence level and the corresponding t-statistic is 1.96. The value p represents the roportion of respondents who were included in the sample (150) and q represents the proportion f respondents (42) who were excluded from the sample. Finally, n represents the sample size.

.5 Sampling Procedures

After obtaining the study sample (150 households) the researcher used systematic random sampling technique to select the respondents through the following procedure: one household was selected randomly from among the first five households in each sub-location's list through he 'lottery technique' (Bless and Higson-Smith, 1995). The next and subsequent households were then selected based on the interval established. Thus, an appropriate sampling interval (I) was calculated by dividing the total sub-locational household size (N) by the required sample size (n) as follows:

$$I = {}^{N}/n$$

Where I = the interval; N = the total sub-locational household population and n = the sample size.

In Lower Nyando, SCC-VI and WKIEMP had 503 and 512 households, respectively, involved in afforestation activities. In Upper Nyando, HL/NVDT had 173 households and SCC-VI had 740 households involved in afforestation activities. The actual samples were, therefore, obtained as illustrated below.

Lower Nyando:

(i) The number of respondents interviewed for SCC-VI was 39; i.e.

$$\frac{503}{1928} \times 100 = 26.08 \text{ (percentage of households)}$$

$$\frac{26.08}{100} \times 150 = 39 \text{ (sample size)}$$

503

———— = 12.89 (13) interval

39

) The number of respondents interviewed for WKIEMP was 40; i.e.

512

———— X 100 = 26.56 (percentage of households)

1928

26.56

———— X 150 = 39.83 (40) sample size

100

512

———— = 12.85 (13) interval

40

Upper Nyando:

i) The number of HL/NVDT respondents interviewed was 13; i.e.

173

———— X 100 = 8.79 (percentage of households)

1928

8.79

———— X 150 = 13 (sample size)

100

173

———— = 13.31 (13) interval

13

(ii) The number of SCC-VI respondents interviewed was 58; i.e.

740

———— X 100 = 38.38 (percentage of households)

1928

$$\frac{38.3}{100} \times 150 = 57.57\ (58)\ \text{sample size}$$

$$\frac{740}{58} = 12.75\ (13)\ \text{interval}$$

3.6 Methods of Data Collection

3.6.1 Secondary Data

The researcher used documental review to collect secondary data from SCC-VI, WKIEMP, HL/NVDT, Ministry of Agriculture, Forest Department, Ministry of Planning and National Development and Maseno University. The sources of data included; project implementation documents, technical reports and publications on River Nyando basin. The researcher read, analyzed and interpreted the various reports and documents to extract relevant data for the study. Secondary data from the projects focused on; project goals, objectives, outputs and management structures. The researcher used this data for triangulation with data collected through primary sources. Mikkelsen (1995) observes that secondary data helps a researcher to get better insights of the issues under study.

3.6.2 Primary Data

3.6.2.1 Standardized Questionnaire

The questionnaire content, basically, contained 'open-ended' and 'closed-ended' questions on community participation in the various stages of the project cycle (identification, planning, implementation and monitoring and evaluation); factors determining community participation in the projects and mechanisms that the projects had put in place for sustainability of afforestation activities. The questionnaires were administered by the researcher and four trained research assistants. Each item in the questionnaire was developed to address a specific objective and/or hypothesis. The structured questions were accompanied by a list of all possible alternatives from which the respondents were able to select the answer that best described the situation. Where it was impossible to exhaust all categories, the researcher included a category named 'other

specify' to take care of those responses. In unstructured questions, the respondents were given the freedom of responses. These free response questions permitted the respondents to respond in their own words. Mugenda and Mugenda (2003) and Kothari (2006) recognize the importance of using both open-ended and closed-ended questions in a questionnaire and provide advantages and disadvantages of each. The standardized questionnaire used during the study has been presented in appendix I.

3.6.2.2 Key Informant Interviews

The researcher used structured interview guides to collect data from the following 14, purposively, selected key informants: Nyando District Agriculture Officer (DAO), Nyando District Forest Officer (DFO), Nyando District Development Officer (DDO), SCC-VI Project Manager, HL/NVDT Forest Officer and WKIEMP Community Development Officer. Apart from the above, the researcher also interviewed members of the projects' focal area committees i.e. 2 focal area committee members from Upper Nyando and 2 from Lower Nyando. The researcher sought information on project identification, planning, implementation and monitoring and evaluation. Interviews with project site committee members were, particularly, important because the project site committee members, usually, oversee the day to day implementation of project activities at project sites. Their experience and exposures in areas of management at the local level in matters relating to convening of meetings, decision-making, monitoring and evaluation and reporting and community mobilization, puts them at the centre as crucial managers of the projects at that lower level. The interview schedule used for key informant interviews is shown in appendix II.

3.6.2.3 Focus Group Discussions (FGDs)

The researcher used FGDs to collect qualitative data on how the communities participated in the afforestation projects and the factors determining their participation. This methodology was intended to collect data for triangulation purposes with data collected using the questionnaire and key informant interviews. During the FGDs, the following Participatory Rural Appraisal (PRA) tools were used for data collection: problem analysis, resource use and control, stakeholder analysis and group interviews. There are many PRA tools but the researcher opted to use the above particular ones because of their relevance to the study. Thirty (30), purposively, selected

cal community members participated in the FGDs. In Upper Nyando, twenty people were vited to attend FGDs but sixteen turned up while in Lower Nyando, twenty people were also vited but fourteen turned up. This number of participants was appropriate because a large roup is likely to distract focus on discussions, yet FGDs are supposed to be focused and brief. cNamara (1999) notes that a good FGD should have between 6 to 10 participants whereas morpfopoulou (www.shef.ac.uk- accessed on 02/02/08 and Limb and Dwyer, 2001) observe hat an ideal FGD should have between 4 to 10 participants. However, the researcher invited nany participants so as to forestall an eventuality of poor turn out.

1.6.2.4 Problem Analysis

Through problem analysis, the community is able to identify the most pressing problems hindering them from achieving development of their area. Projects are anticipated to address community's problems and hence, the importance of involving communities in the development process. The major aim of using this tool was to capture community's opinion of their development problems and find out whether these are the problems that the afforestation projects were addressing and also whether these were the factors determining their participation in the afforestation projects' activities. In order to get relevant data, the following procedure was used;

(i) The research team guided community members in discussing problems affecting their area – this was done on a problem analysis chart through brainstorming

(ii) The community listed down the problems facing their area on a flip chart

(iii) The community members listed those problems which presented the most pressing constraints to development in their area

(iv) The community ranked the problems in order to show their weight as they impacted on their lives

(v) The research team prepared a pair–wise ranking matrix of the problems on a manila paper

(vi) The research team and community listed the ranked problems from the matrix and noted them down and, thereafter, analyzed them in order of priority

3.6.2.5 Resource Use and Control

This tool helps one to understand resource use and control practices at the household level i.e. who makes decisions and/or controls resources within the household. This tool was used to find out who within the household controls household resources especially tree resources in terms of income and use. The following procedure was followed for resource use and control;

(i) The community listed resources available at the household level

(ii) The community indicated how various members of the household controlled or accessed the resources

(iii) The research team and community members then drew conclusions based on the responses

3.6.2.6 Stakeholder Analysis

Stakeholder analysis helps to identify whom to involve when designing a project or program. It allows implementers to find out whose information needs must be considered and to assess the interests of each stakeholder. It is also important in analyzing stakeholder relations (including cooperation, collaboration and conflicts). Further, it helps provide a foundation and strategy for participation throughout the project, thereby, making it easier for stakeholders to learn from each other. The analysis is also vital in understanding the social characteristics or differentiation of those involved or affected by the project, their interests and their importance and influence over the operation of the project. Such information is necessary to provide the basis, structure and strategy for their participation in the project and to help identify institutions and processes from which to build the project (APO, 2002). The procedure followed for stakeholder analysis was as follows;

(i) Research team clarified the main purpose of the stakeholder analysis and agreed with the community members on criteria for assessing stakeholders

(ii) The two teams then listed the criteria that were used for stakeholder analysis

(iii) The two teams then listed all the organizations that fitted the criteria e.g. afforestation CBOs, NGOs, FBOs, Government Departments etc.

(iv) The teams classified the stakeholders based on the criteria using a stakeholder matrix with stakeholders along one axis and the criteria along the other.

(v) Community members were allowed to discuss the perceived roles of the stakeholders in terms of their activities with the community and their challenges.

3.6.2.7 Group Interviews

The purpose of this tool was to assess local community members' participation in project activities, discuss the factors that determined their participation in the projects and assess mechanisms the afforestation projects had put in place for sustainability of afforestation activities. The expected outputs from this tool included; information on community participation in the activities of the three afforestation projects, the projects' achievements in terms of tree nursery establishment, tree planting and the social, cultural, economic, political and environmental factors determining community participation in the afforestation projects. The group interviews were conducted in the two study sites with 30 members of the local community in attendance. The benefits of a group interview are that individuals are free to challenge the interpretations or assumptions of other group members. This dialogic characteristic of the group interview gives the researcher access to multiple and transpersonal understandings that characterize social behavior (Mweene, 2006; USAID, 1996). The above tools have been presented in appendix V.

3.7 Data Analysis, Interpretation and Presentation

Primary data obtained through questionnaire method was edited, coded, analyzed and interpreted. The study variables were measured using nominal and ordinal scales. In the nominal scale, cases or responses were categorized based on commonality of characteristics e.g. sex, gender, ethnicity, marital status and occupation. Numerals were assigned to the various categories for the purpose of identification, with the statistic applicable for analysis being the mode. In the ordinal scale, the responses were grouped into categories and the categories were ranked in order – indicating the relative position or order among the values of the variables, with

the statistic applicable for analysis being the mode. Data analysis for objectives one (community participation in the various stages of the project cycle) and objective three (afforestation projects' mechanisms for project sustainability) was done using percentage proportions. Chi-Square (X^2) test was done to establish the relationship/association between community participation (dependent variable) and socio-cultural, economic and environmental factors (independent variables). Gamma measure of association statistic was used to test the strength of the relationships/associations. The study results were summarized in frequency (bar charts) and cross-tabulation (contingency tables) and interpreted and discussed in light of the research objectives and hypotheses.

3.8 Reliability of Results

The fact that the respondents were selected using the systematic random sampling technique could have affected the reliability of the results to some extent. To overcome this weakness, the researcher used FGDs for data collection. FGDs were able to generate information on the factors that determined people's participation in the afforestation projects, their participation in the various stages of the project cycle and their opinion about the mechanisms the projects had put in place for sustainability of afforestation activities in River Nyando basin. Their information was also used to corroborate information collected from the projects' management and other stakeholders on community participation in the activities of the afforestation projects in the basin. FGD information backed up data collected using the questionnaire and hence, the necessity of using triangulation between the different methods.

3.9 Criteria for Testing Hypotheses

The following criteria were used to test the hypotheses: hypothesis one was tested as indicated (Table 3.3), hypothesis two was tested as indicated (Table 3.4) and hypothesis three as indicated (Table 3.5).

Table 3.3: Criteria for testing hypothesis one

No	Community Participation	Score
1	Very meaningful community participation	80% - 100%
2	Generally meaningful community participation	65% - 79%
3	Meaningful community participation	50% - 64%
4	Less meaningful community participation	21% - 49%
5	Very low community participation	10% - 20%
6	Non-existent community participation	1% - 9%

Source: Adopted from Nampila, T. (2005)

Table 3.4: Criteria for testing hypothesis two

No	Dependent Variable	Independent Variable	Chi-Square Test of Significance Value	Gamma Measure of Association Value	Conclusion
1	Community participation	Benefits from afforestation projects			
2	Community participation	Project incentives			
3	Community participation	Cultural taboos			
4	Community participation	Household headship			
5	Community participation	Land tenure			

Table 3.5: Criteria for testing hypothesis three

No	Mechanism for Sustainability Level	Score
1	Very high mechanisms for sustainability	80% - 100%
2	High mechanisms for sustainability	65% - 79%
3	Average mechanisms for sustainability	50% - 64%
4	Low mechanisms for sustainability	21% - 49%
5	Very low mechanisms for sustainability	10% - 20%
6	Non-existent mechanisms for sustainability	1% - 9%

Source: Adopted from Nampila, T. (2005)

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Overview of the Afforestation Projects' Activities and Respondents' Bio-data

The three afforestation projects under study and for which results of this study are based, (Homa Lime/Nyando Valley Development Trust (HL/NVDT), SCC-VI Agro-forestry (SCC-VI) and Western Kenya Integrated Ecosystem Management Project (WKIEMP) are implementing afforestation activities in the River Nyando basin. Homa Lime/Nyando Valley Development Trust is promoting tree growing and environmental conservation activities in Upper Nyando. The SCC-VI Agro-forestry project is promoting agroforestry activities among small-scale holders through increased fuelwood availability, increased food and nutritional security and increased incomes in Upper and Lower Nyando. The Western Kenya Integrated Ecosystem Management Project (WKIEMP) is promoting improved productivity and sustainability of land use systems in Upper and Lower Nyando. The project supports on- and off-farm conservation strategies including soil fertility improvement, agroforestry and introduction of value added cropping systems.

4.1.1 Respondent's Background Information

4.1.1.1 Respondent's Age

Majority of the respondents interviewed were 40 years and above. At individual project level, HL/NVDT had majority of the respondents aged 60 and above whereas WKIEMP had the least number of respondents aged 60 and above (Figure 4.1).

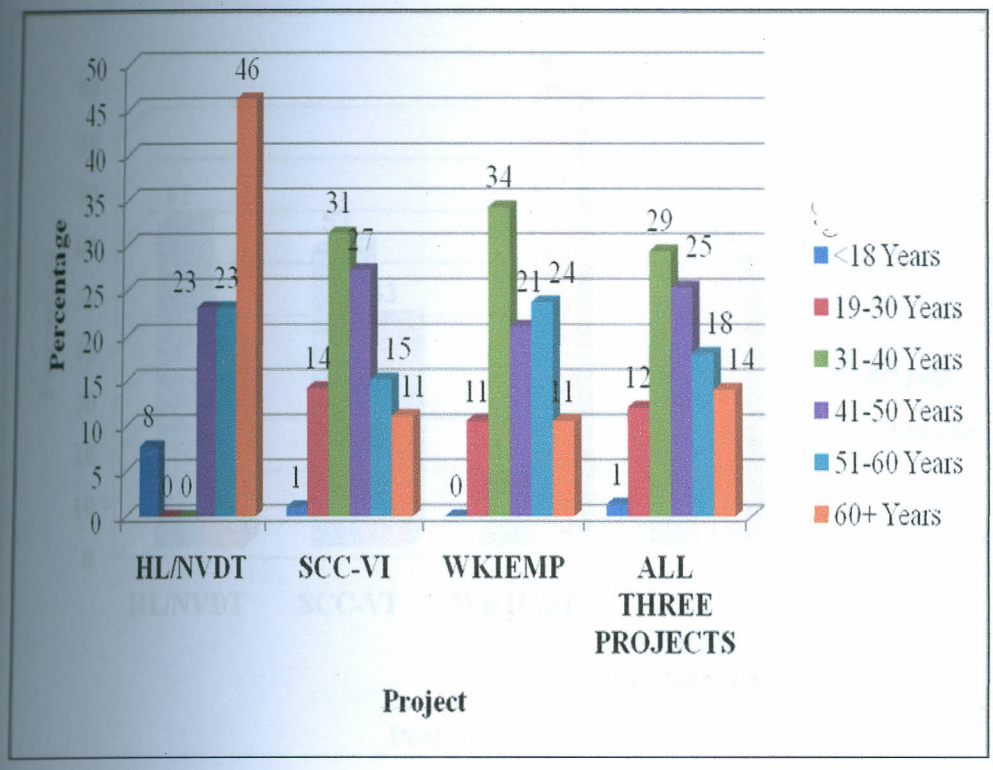

Figure 4.1: Respondents' Age

4.1.1.2 Respondents' Gender

Majority of the respondents interviewed across the three projects were female. WKIEMP had the highest number of female respondents whereas HL/NVDT and SCC-V- had higher numbers of male respondents (Figure 4.2).

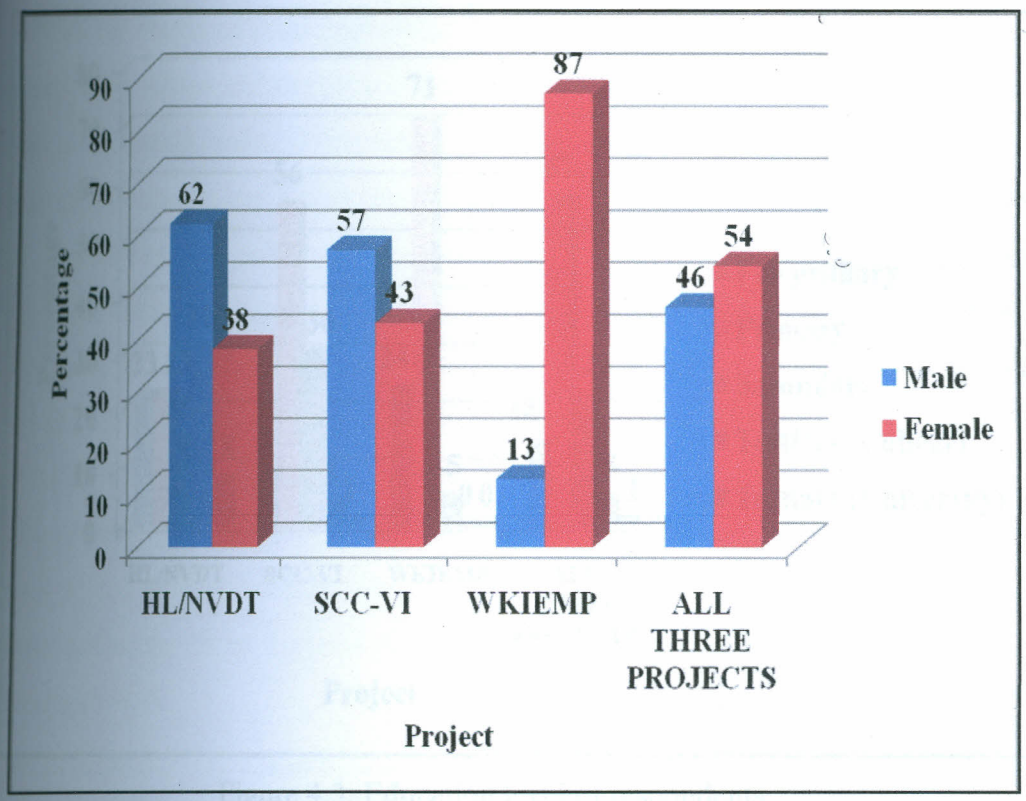

Figure 4.2: Gender of respondents

4.1.1.3 Respondents' Education Level

Majority of the respondents interviewed had primary level education. WKIEMP had the highest number of respondents with primary level education followed by SCC-VI (Figure 4.3).

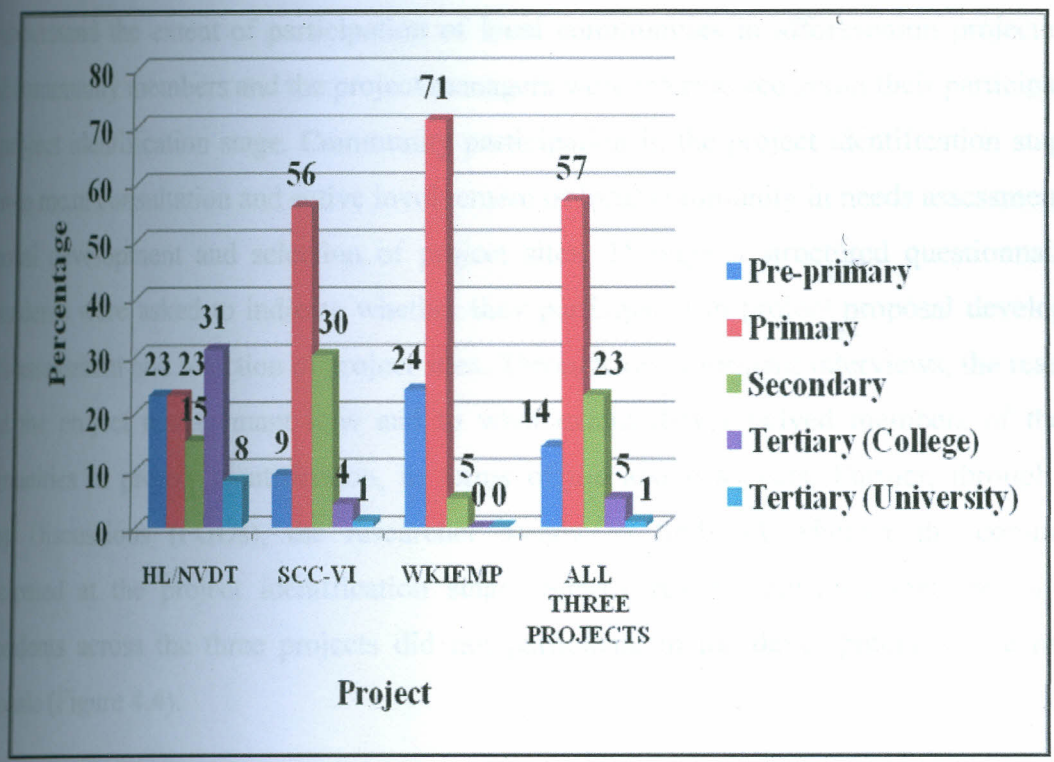

Figure 4.3: Education level of respondents

4.2 Community Participation in Afforestation Project Cycle

4.2.1 Community Participation in Project Identification

Project identification involves needs assessment i.e. to find out what the community needs are and whom they affect. Needs assessment gives people an opportunity to prioritize their needs. Needs assessment also ensures that a project is focused on real needs and that the project implementers understand these needs well (CORE, 2006; Twigg, 2007; ITAD, 2001). Well-conducted assessments act as a baseline and provide important information for monitoring and evaluation during and after project implementation. Farrington and Martin (1988) argue that beneficiary participation in project identification not only allows for easier project implementation but also, has a substantial cost-effectiveness advantage. Using participatory approach in project identification ensures that relevant stakeholders in the community are consulted about the community's needs.

To understand the extent of participation of local communities in afforestation projects, both, local community members and the project managers were interviewed about their participation in the project identification stage. Community participation in the project identification stage was taken to mean consultation and active involvement of local community in needs assessment, joint proposal development and selection of project sites. Through a structured questionnaire, the respondents were asked to indicate whether they participated in project proposal development, needs assessment and selection of project sites. Through key informant interviews, the researcher asked the project management how and to what extent they involved members of the local communities in project identification, in terms of the above aspects. Further, through Focus Group Discussions (FGDs), the researcher sought to find out whether the communities participated at the project identification stage. Survey results indicated that 99.3% of the respondents across the three projects did not participate in the development of the projects' proposals (Figure 4.4).

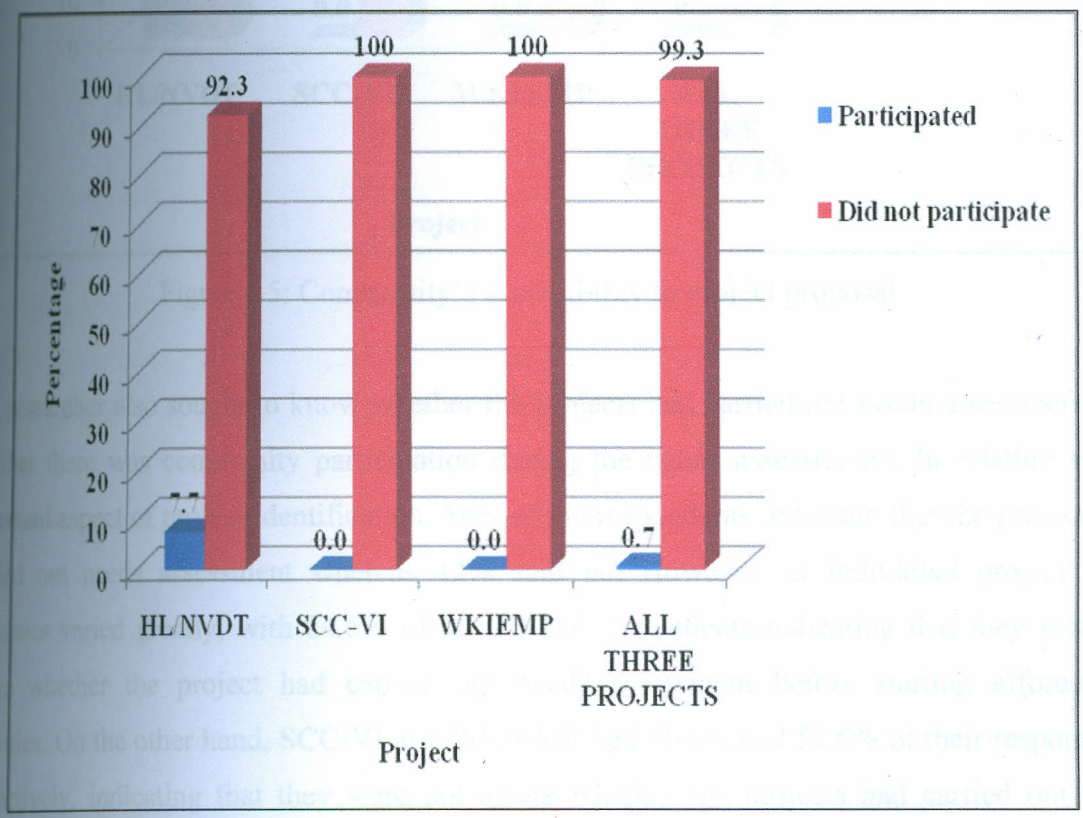

Figure 4.4: Community participation in project proposal development

Besides, when the respondents were asked whether they accessed the project proposals, again 99.3% of them said no (Figure 4.5).

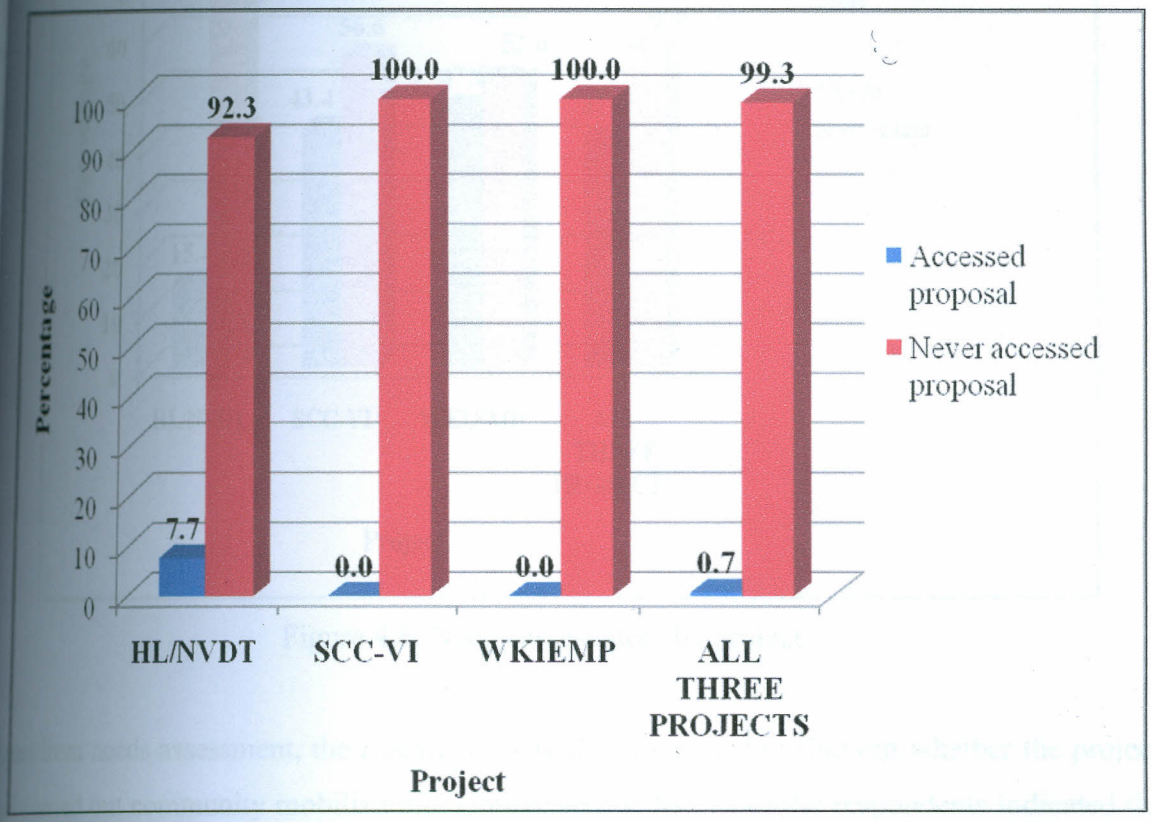

Figure 4.5: Community's accessibility to project proposal

The researcher also sought to know whether the projects had carried out needs assessments and whether there was community participation during the needs assessments. In relation to this important aspect of project identification, 58% of the respondents indicated that the projects had carried out needs assessment whereas 42% said no. However, at individual project level, responses varied greatly, with 84.6% of HL/NVDT respondents indicating that they were not aware whether the project had carried out needs assessment before starting afforestation activities. On the other hand, SCC-VI and WKIEMP had 56.6% and 52.6% of their respondents, respectively, indicating that they were not aware whether the projects had carried out needs assessments. Interestingly, an equally high number of SCC-VI and WKIEMP respondents, 43.4% and 47.4%, respectively, indicated that the projects had carried out needs assessments (Figure 4.6).

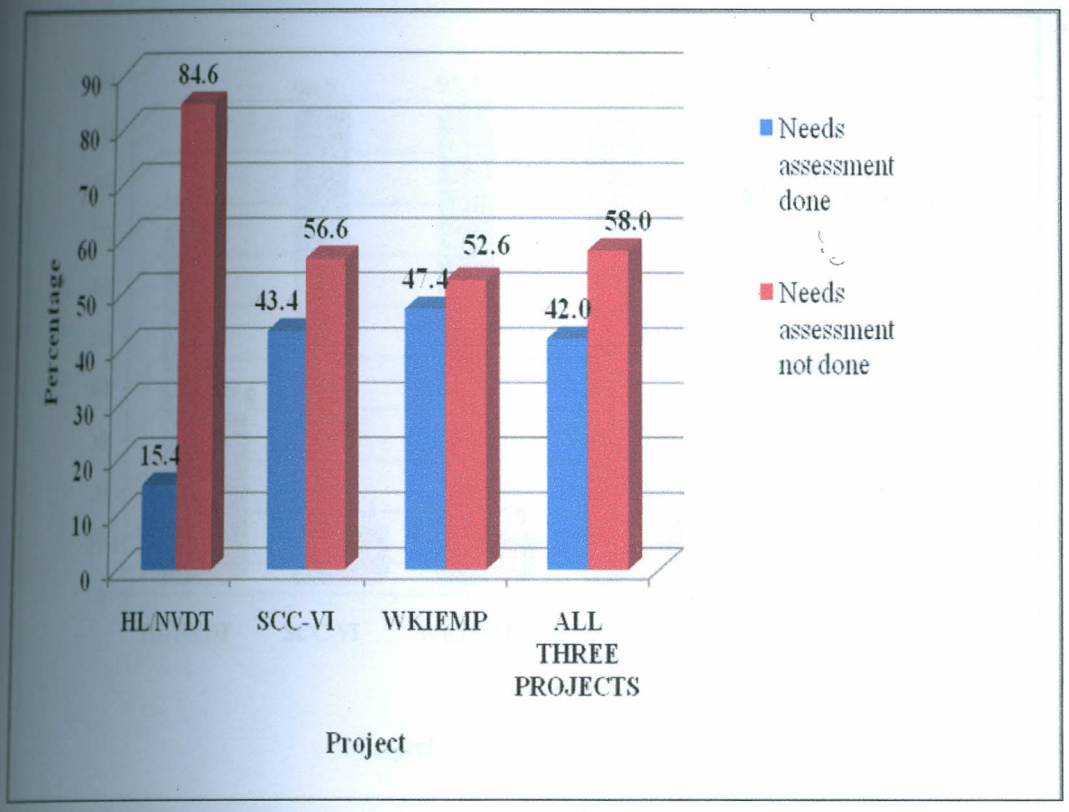

Figure 4.6: Needs assessment by project

Apart from needs assessment, the researcher was also interested to find out whether the projects had carried out community mobilization. Consequently, 89.3% of the respondents indicated that the projects had carried out community mobilization (Figure 4.7). Indeed, interviews with the projects' management revealed that two of the projects, WKIEMP and SCC-VI, had carried out community mobilization before starting up their activities.

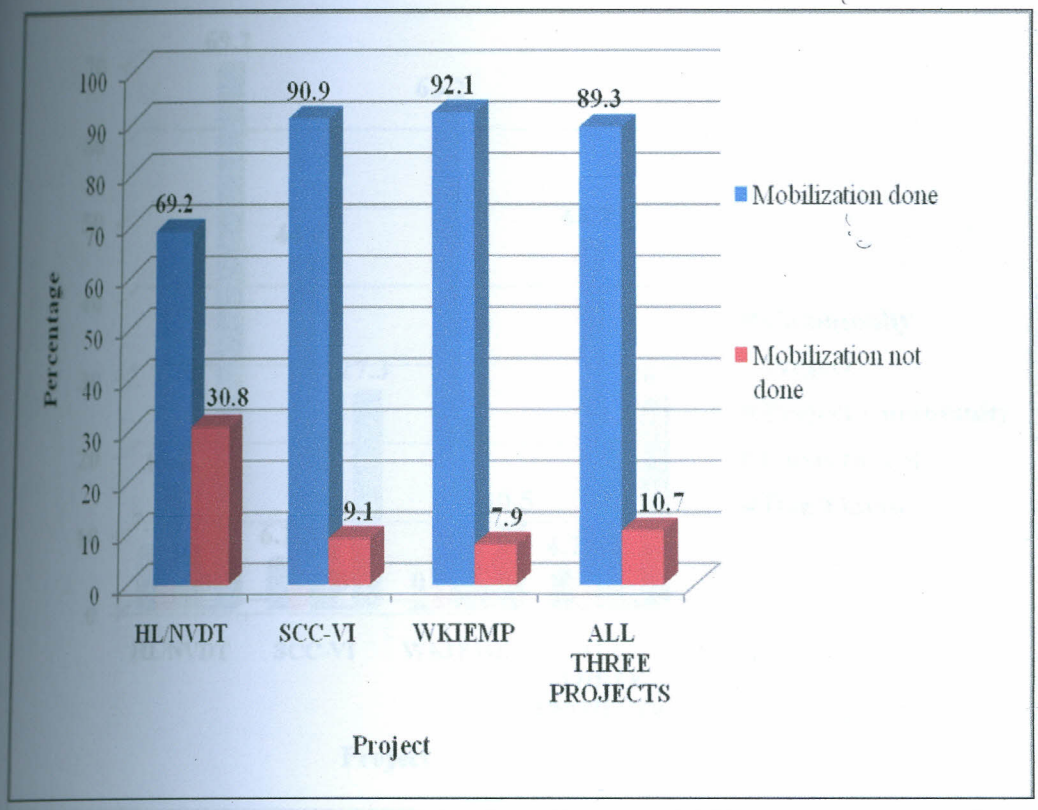

Figure 4.7: Community mobilization and sensitization

The respondents were further asked to indicate whether they were aware about who selected the projects' sites and the criteria used for site selection. These questions were aimed at finding out if community members were given the opportunity to share their ideas with project management about which areas deserved priority intervention. According to the results, 46.7% of the respondents across the three projects indicated that the projects were responsible for site selection. But when analyzed individually, HL/NVDT had 69.2% of the respondents not knowing who selected the project sites. WKIEMP had 63.2% of the respondents who felt that project sites were selected by the project itself while 44.4% of SCCI–VI's respondents felt that the project sites were selected by both the project and community (Figure 4.8).

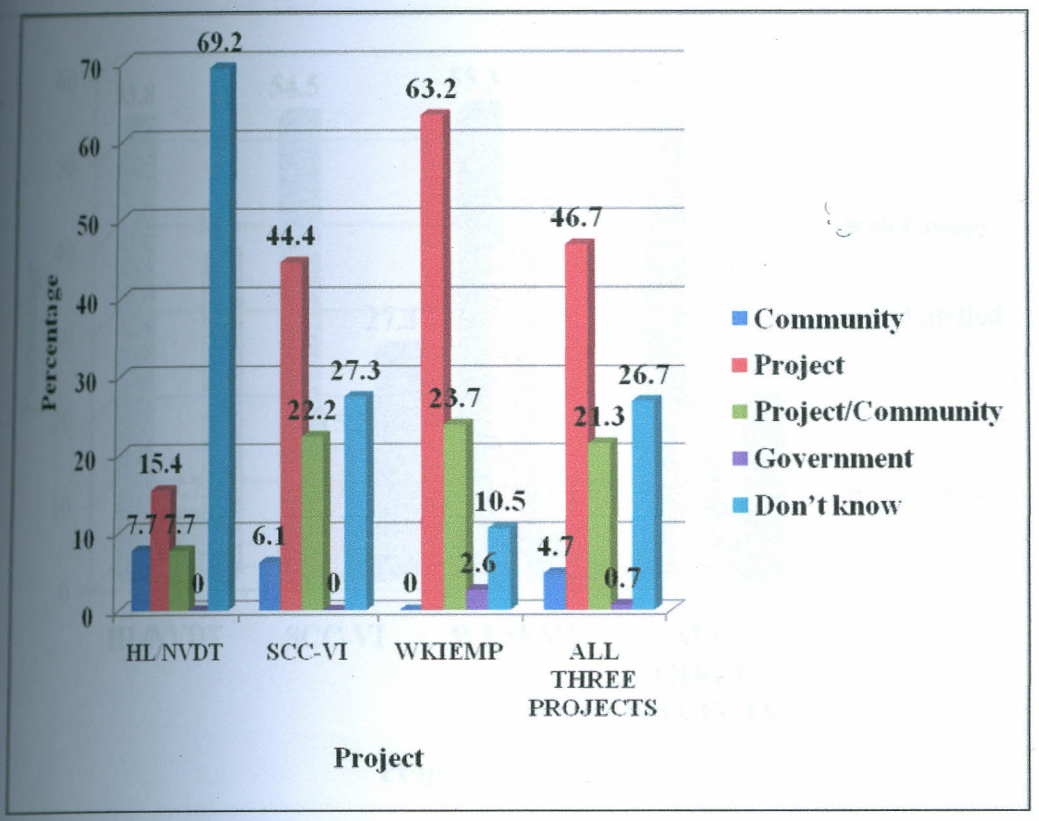

Figure 4.8: Community's opinion about who selected the project site

Interviews with managers of the three projects confirmed that, indeed, members of the local communities were not involved in the selection of the project sites. Selection of SCC-VI's sites, for instance, was done by the project itself and was based on the Ministry of Agriculture's 'Focal Area Approach'. In the 'Focal Area Approach', the ministry focuses extension efforts on one selected area for one year before moving out to another area. Selection of WKIEMP's sites was also based on the Ministry of Agriculture's 'Catchment Area Approach'. The sites for HL/NVDT were selected by the organization itself using its own agricultural extension criteria. Since the respondents said that they did not participate in site selection, they were asked to give reasons for their non-participation. Across the three projects, 54.7% of the respondents indicated that they did not participate because they were not aware when the project sites were being selected. At individual project level, majority of respondents; HL/NVDT 53.8%, SCC-VI 54.5% and WKIEMP 55.3%, in that order, indicated that they did not participate in the selection of projects' sites because they were not aware when the sites were being selected (Figure 4.9).

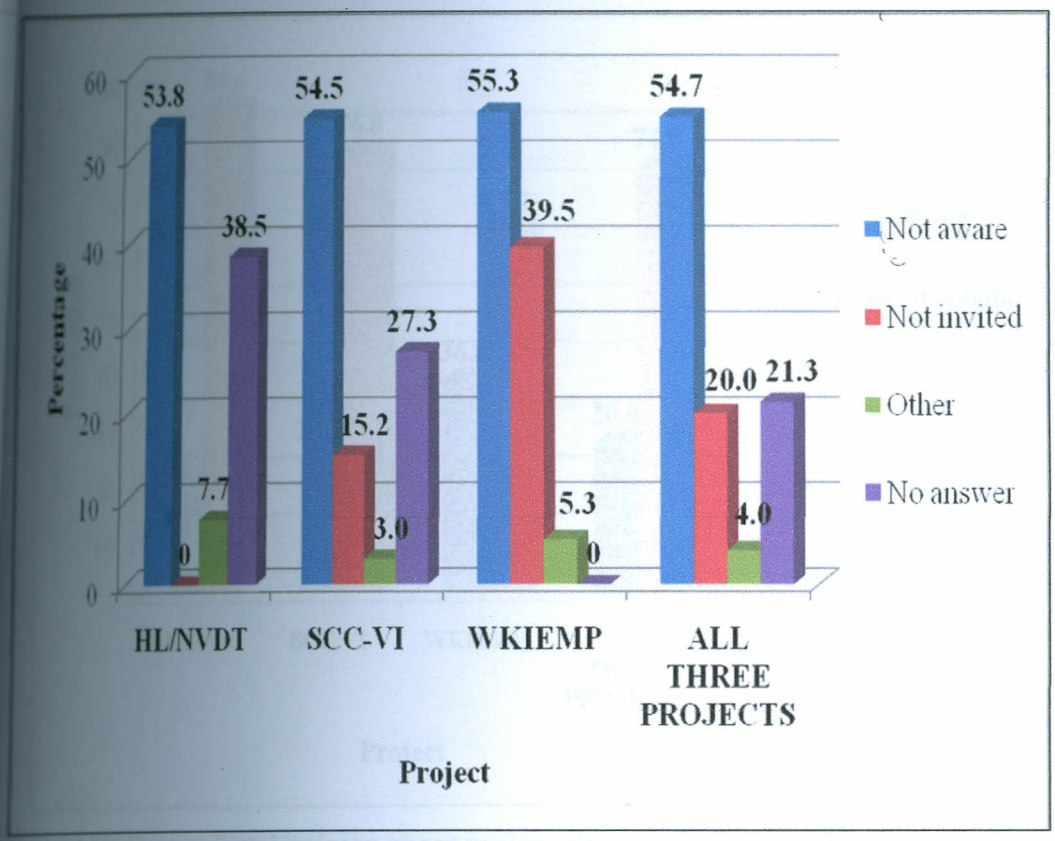

Figure 4.9: Reasons for non-participation in selection of the project site(s)

n an effort to get more information on selection of project sites, the respondents were asked to ndicate whether they knew the criteria that the projects used in the selection of the sites. Across e three projects, 74% of the respondents indicated that they did not know the criteria used. At ndividual project level, HL/NVDT had 84.6% of the respondents not knowing the criteria used, llowed by SCC-VI with 76.1% and WKIEMP 63.2% of their respondents, in that order, not nowing the criteria used in site selection (Figure 4.10).

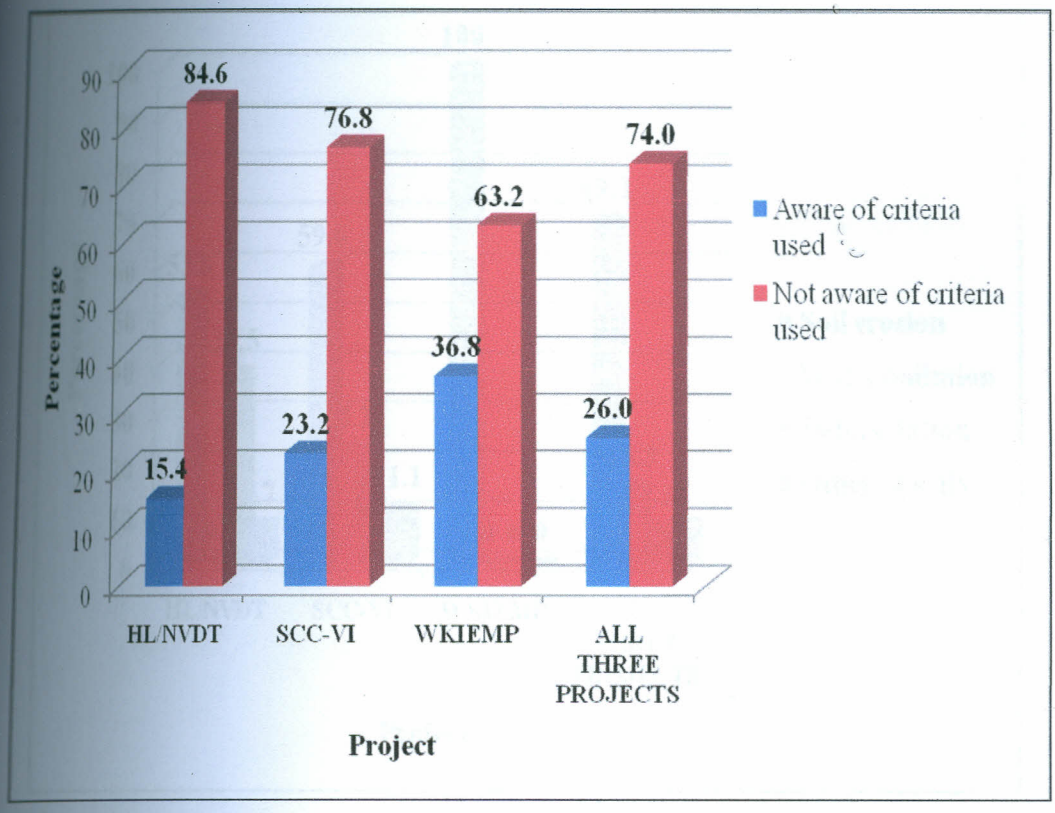

Figure 4.10: Respondents' opinion about major criteria used in selection of project site(s)

But out of the few who claimed to know the criteria used for site selection, WKIEMP had 36.8% SCC-VI 23.2% and HL/NVDT 15.4% of their respondents in that order. Environmental degradation was mentioned as the major criteria used for site selection with 25.3% of the respondents across the three projects citing it. In an effort to find out the, particular, environmental problem responsible, the researcher asked the respondents to choose from among the following environmental problems: soil erosion, water pollution and deforestation. The question yielded various responses with soil erosion topping the list with 69.3% of the respondents across the three projects citing it. At individual project level, 100% of WKIEMP respondents felt soil erosion was the environmental problem that prompted WKIEMP to select the project sites. SCC-VI had 59.6% and HL/NVDT 53.8% of their respondents, respectively, indicating that soil erosion was the environmental problem prompting the projects to select the project sites. However, a good number of HL/NVDT respondents, 38.5%, mentioned deforestation. Water pollution was mentioned by 23% of SCC-VI respondents as being also an environmental problem that may have prompted the SCC-VI to select the project sites (Fig.4.11).

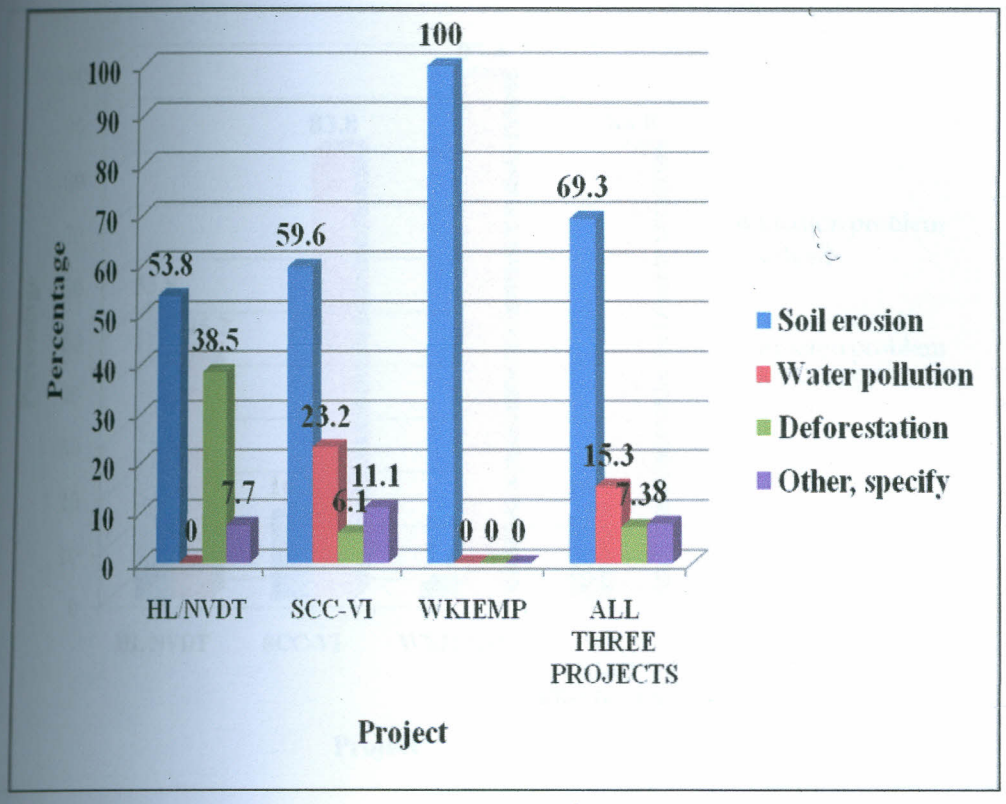

Figure 4.11: Respondents' opinion about the major environmental problem in their area(s)

Since the respondents mentioned soil erosion as the major environmental problem, the researcher asked them to indicate whether it was the same problem facing their areas ten years ago. Majority of the respondents i.e. WKIEMP 100%, SCC-VI 83.8% and HL/NVDT 61.5%, in that order, answered yes. When asked whether the projects had solved the problem, the response was a resounding no for 84% of the respondents across the three projects. At individual project level, it was a resounding no for 97.4% of WKIEMP, 83.8% of SCC-VI and 46.2% of HL/NVDT respondents in that order (Figure 4.12).

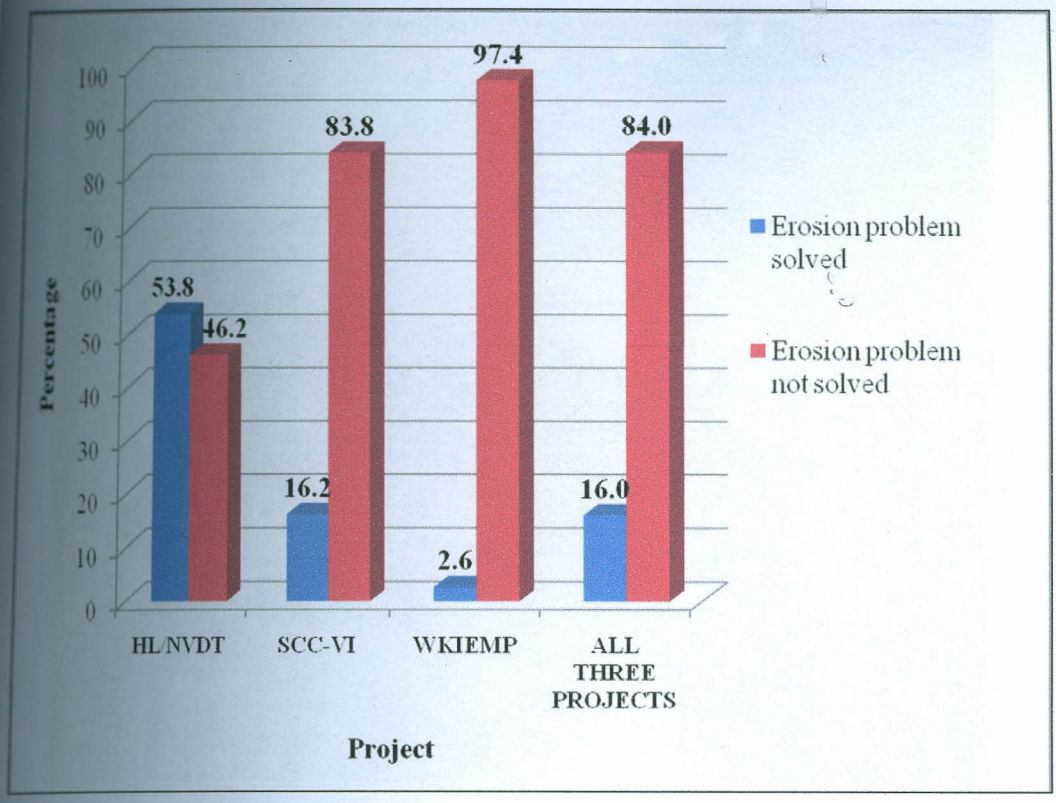

Figure 4.12: Community's opinion whether soil erosion problem has been solved

The researcher probed further whether soil erosion was the problem being addressed by the projects. The intention here was to find out if the projects were addressing the real problem facing the beneficiaries or not. This question elicited varied responses across the three projects with 53.8% of HL/NVDT respondents saying no. However, 89.5% of WKIEMP respondents said yes. SCC-VI respondents had mixed responses about this variable, with 60.6% saying yes and 39.4%, saying no. Plates 4.1 and 4.2 below indicate the soil erosion situation in the two study sites.

Plate 4.1: Soil erosion in Kapchebwai, Upper Nyando

Plate 4.2: Soil erosion in Katuk-Odeyo, Lower Nyando

Still on the need to find out whether respondents were involved in the identification of the projects, the researcher asked them to indicate the level of attention the projects had given to addressing local priority problems. According to the results, only WKIEMP seemed to have given high attention to local priority problems with 63.2% of the respondents answering yes to the affirmative. HL/NVDT and SCC-VI seemed to have only given 'some' attention to local priority problems with 84.6% and 49.5%, of the respondents, respectively, giving responses to that effect (Figure 4.13).

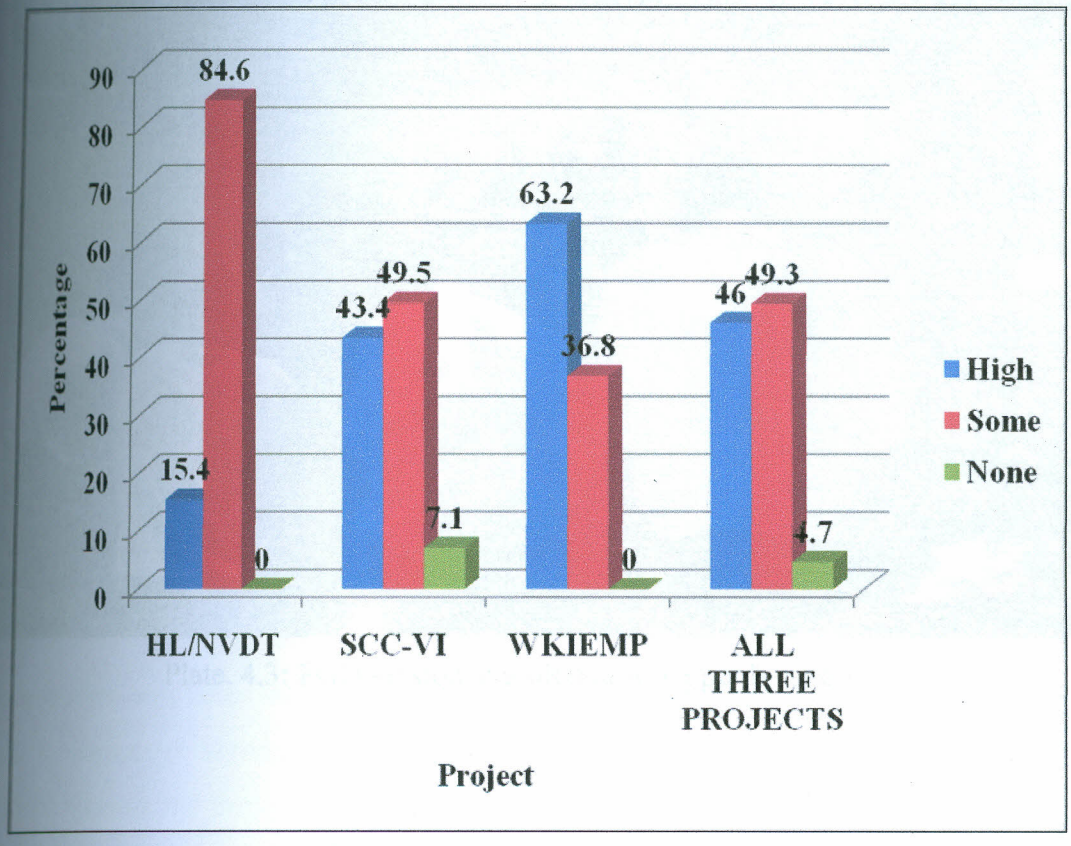

Figure 4.13: Level of attention given to addressing local priority problems

During FGDs, a number of issues were raised as being of priority. Problem analysis in Upper Nyando revealed that adult illiteracy, inadequate water supply, inadequate forest products, poor infrastructure and human diseases were the major problems facing the community. In Lower Nyando, problem analysis indicated that human diseases, lack of income generating activities, poverty, low crop yields, and inadequate water supply were the major problems facing the community. This implies that the communities had priority needs requiring attention other than

forestation hence, the need for sustainable livelihoods approach to solving local communities' problems. Plates 4.3 and 4.4 below indicate the Focus Group Discussions in the two sites.

Plate. 4.3: FGD session at Koitaburot, Upper Nyando.

Plate. 4.4: FGD session at Katuk-Odeyo, Lower Nyando.

The respondents were also asked to indicate what they thought was the major reason for the projects to implement activities in the focal areas. The intention here was to cross-check information whether the projects were addressing local priority needs or not. A good number of the respondents across the three projects, 49.3%, indicated that the major reason was soil erosion control. At individual project level, 78.9% of WKIEMP and 42.4% of SCC-VI respondents, respectively, indicated that soil erosion was the major reason for the projects to implement activities in the focal areas. A good number of HL/NVDT respondents, 46.2%, indicated that planting trees for income generation was the major reason for the project to implement activities in the focal area (Figure 4.14).

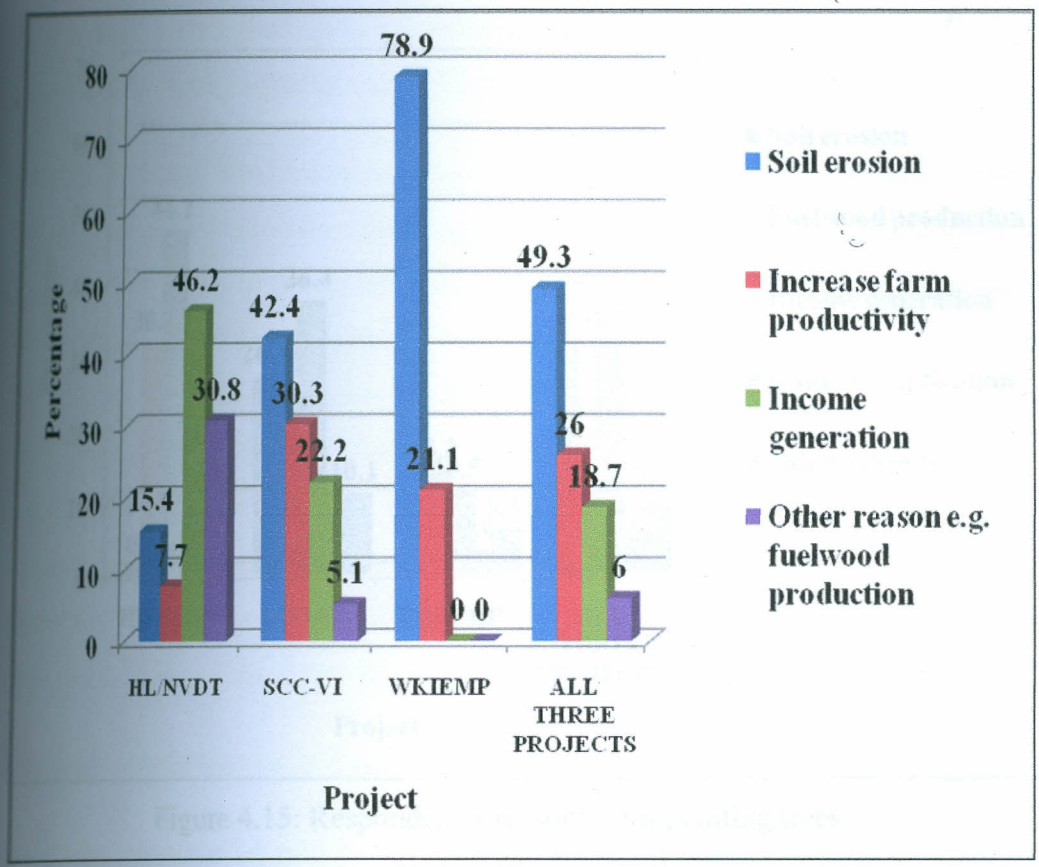

Figure 4.14: Respondent's opinion why project is carrying out afforestation activities

Consequently, the respondents were asked to indicate why they were planting trees in their farms. Across the three projects, 34.7% of the respondents indicated that they were planting trees for soil erosion control while 30.7% indicated that they were planting trees for income generation. At individual project level, 68.4% of WKIEMP respondents indicated that they were planting trees for soil erosion control while 46.2% of HL/NVDT respondents indicated that they were planting trees for income generation. Planting trees for income generation was also indicated by 36.4% of SCC-VI respondents (Figure 4.15).

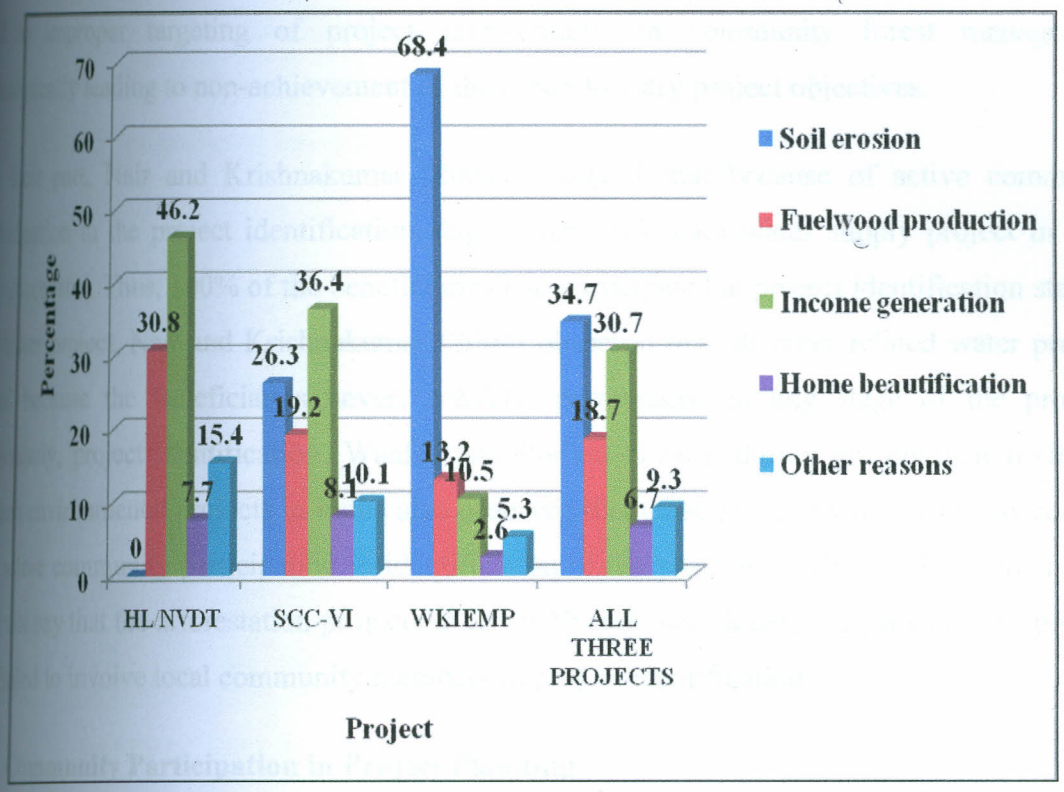

Figure 4.15: Respondent's reason(s) for planting trees

The findings above point to low community participation in the project identification stage because proposal development, needs assessment and project site selection all constitute essential components of the project identification stage. The findings of this study are in agreement with findings of other researchers on community participation in the project identification stage. For instance, Wanyama (2003) carrying out a study of community based organizations (CBOs) for sustainable development in Western Kenya, observed that 51.3% of the respondents did not participate in the development of the CBOs project proposals.

Similarly, during an evaluation of 21 afforestation and agroforestry projects in Africa, Kerkhof (1990) observed that several of them e.g. Nyabisindu Agroforestry Project, Rwanda; Rural Afforestation Project, Zimbabwe; Village Afforestation Project, Tanzania and Turkana Rural Development Project, Kenya had failed because of lack of community participation in the project idnetification stage. Jansens and Wildemeersch (2002), writing a paper on social learning, active citizenship and policy making in urban forest planning in Ireland, observed that lack of community participation in project identification, through lack of prioritizing community needs,

to improper targeting of project interventions in community forest management, consequently leading to non-achievement of the urban forestry project objectives.

On their part, Nair and Krishnakumar (2004) observed that because of active community participation in the project identification stage, Chevalakkonam water supply project in India was successful. Thus, 100% of the beneficiaries had participated at project identification stage of the water project. Nair and Krishnakumar (2004) observed that all other related water projects failed because the beneficiaries never, actively, participated in any stage of the projects, particularly, project identification. Waafas and Philleo (1992), during an anlytical review of women environmental projects in India, also observed that those projects which were succeessful had active community participation in identification of the projects. Although the current study does not say that the afforestation projects in River Nyando had failed, it argues that the projects had failed to involve local community members in project identification.

4.2.2 Community Participation in Project Planning

Project planning concerns detailed analysis and consultations between the beneficiaries, stakeholders and project management about how a project will function in terms of time, resources, budget and personnel. Twigg, (2007) and ITAD, (2001) call this phase 'appraisal and/or formulation'. It is in planning or project design that the goal, purpose, objectives, activities, outputs and indicators are spelled out. Apart from identifying progress indicators, the planning stage also includes a detailed plan of responsibilities. It is also in planning that risks and assumptions to a project are identified and mechanisms for their minimization during project implementation put in place. In project planning stage, the project budget is discussed and agreed among the stakeholders. The budget is necessary for transparent financial management and accountability amongst the project implementers and beneficiaries (Blackman, 2003; CORE, 2006).

In an effort to find out whether the respondents participated in the project planning stage, the researcher asked them a number of questions e.g. whether community members participated in project planning meetings, reasons for non-participation and beneficiaries' knowledge of the projects' life spans. The survey results indicated that community participation in the project planning stage was low. For instance, when the respondents were asked to indicate whether they

participated in any project planning meeting, 44% of the respondents across the three projects did not know, in the first place, whether there was any project planning meeting done whereas 37.3% indicated non-participation (Figure 4.16).

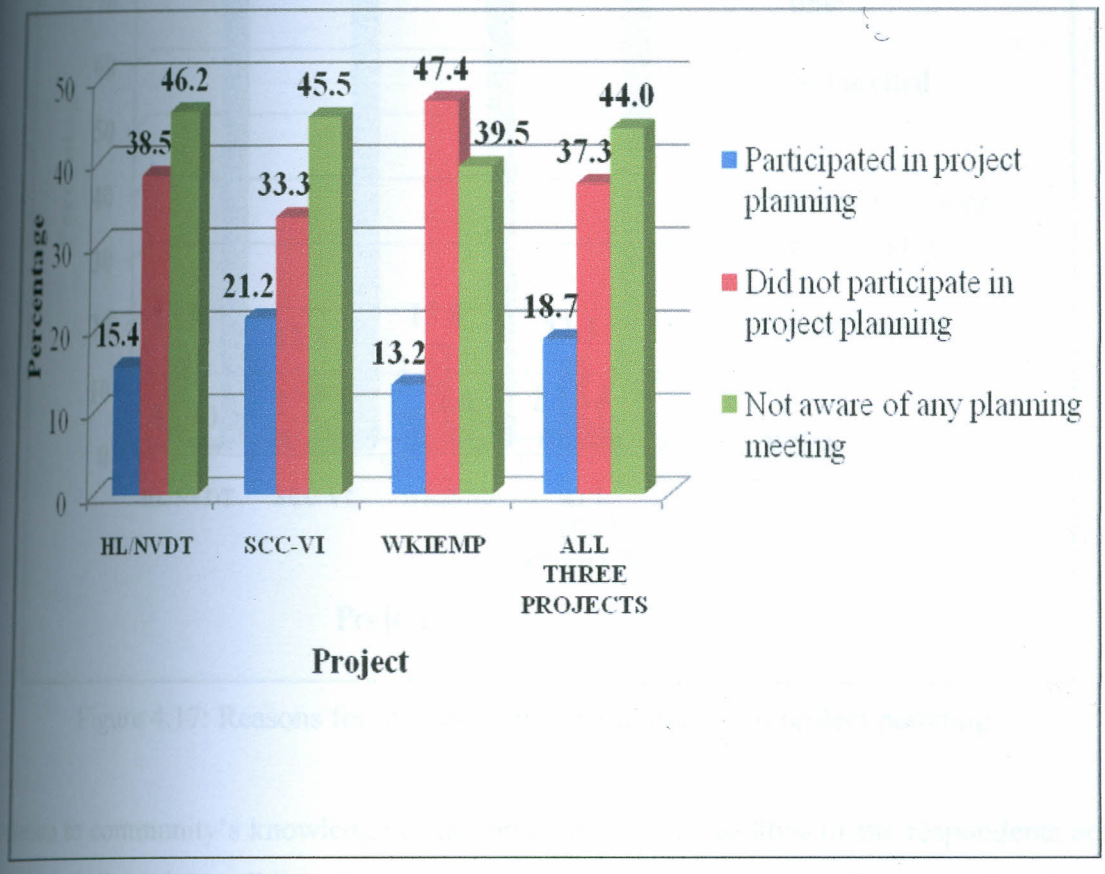

Figure 4.16: Community's participation in project planning

When the respondents were asked to give reasons for their non-participation, 79.3% of them had no answer to give since they were not aware of any planning meeting taking place and/or had never been involved in one. Only 13.3% of the respondents said that they were not invited to take part in the meetings (Figure 4.17). Interviews with project management of the three projects also revealed that the members of the local community were, indeed, not involved in the planning of the projects.

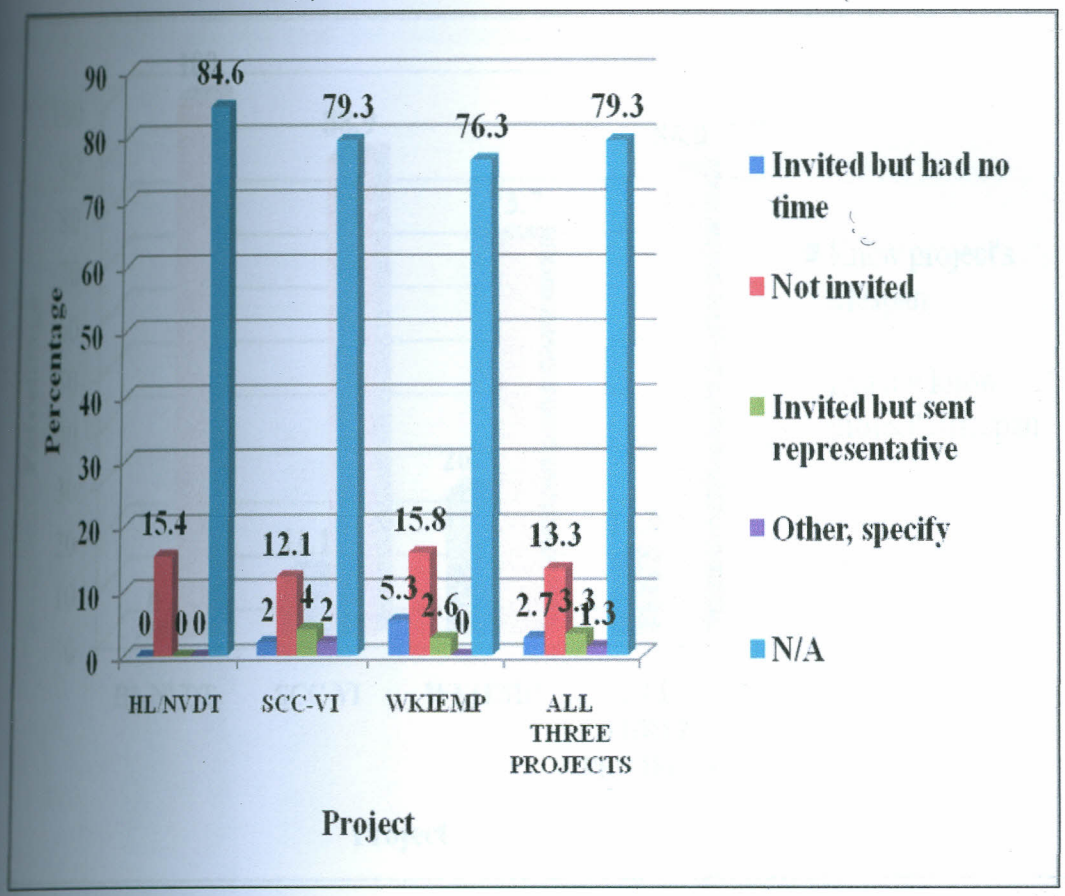

Figure 4.17: Reasons for members' non-participation in project planning

In relation to community's knowledge of the projects' life spans, 86% of the respondents across the projects indicated they did not know the project implementation period. At individual project level, HL/NVDT had all the respondents interviewed not knowing how long the project would be implemented in their areas. At individual project level, SCC-VI and WKIEMP had 88.9% and 73.7%, respectively, of the respondents not knowing how long the projects would be implemented in their areas (Figure 4.18).

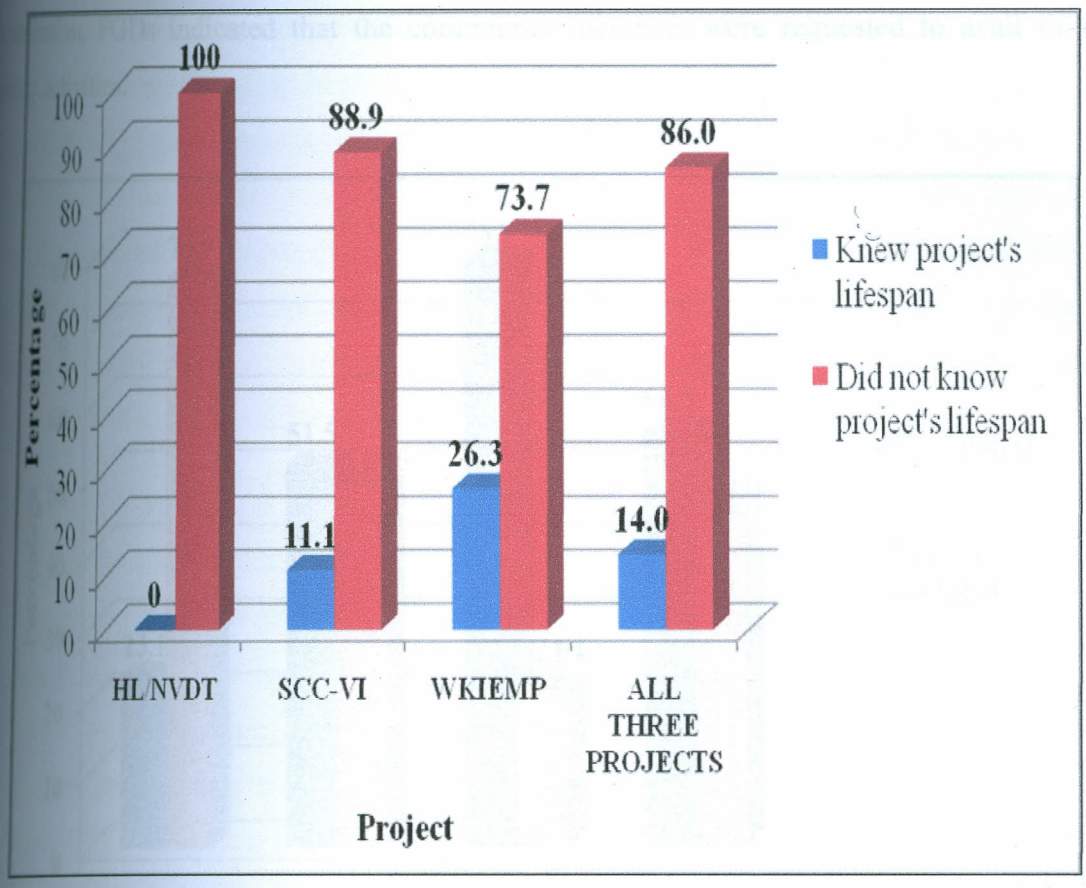

Figure 4.18: Communities' knowledge on projects' life spans

However, it is interesting to note that when the respondents were asked whether the projects had conducted project launches, 72% indicated that they were aware of the launches and even 50.7% of the respondents across the three projects had personally attended the launches. Ideally, in project launch or commissioning the information about the goals, duration and budget of the project is availed to stakeholders, probably, in brochures or other project implementation documents as a way of sensitization, accountability and transparency. However, Focus Group Discussions indicated that community members were not given any project literature nor were they informed about the mode of operations of the projects. They only witnessed elaborate launch ceremonies graced by high-ranking government officials and prominent persons in the community. The researcher also asked the respondents if they were requested to contribute time, money or materials to operations of the projects. The results indicated that 56% of the respondents across the three projects were requested to make some contributions to the running of the projects (Figure 4.19). Although the results did not differentiate between the type of

contribution, FGDs indicated that the community members were requested to avail time for project activities.

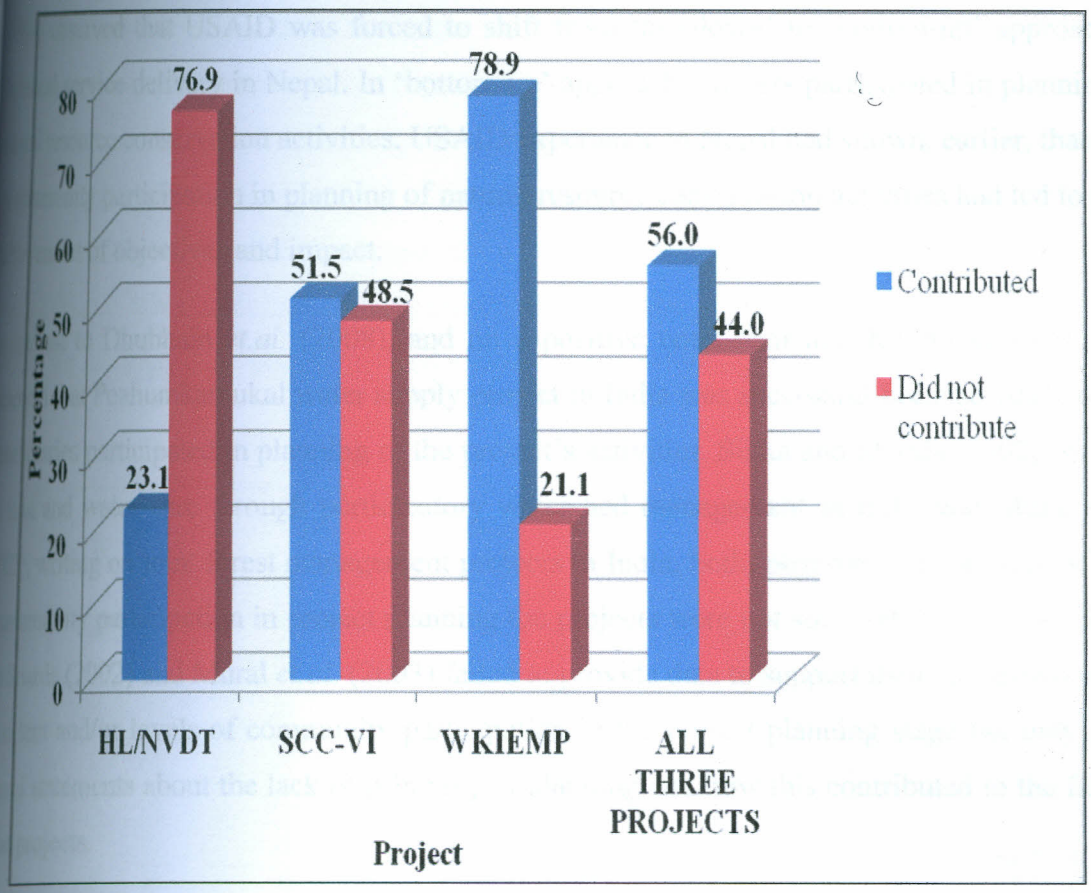

Figure 4.19: Community contribution to project activities

Citing the responses above, it implies that the beneficiaries were not involved in planning of the project activities nor were they consulted in any manner regarding their responsibilities in implementation of the projects' activities.

The study findings on community participation in the planning stage of the project cycle agree with findings of other researchers. For instance, Kerkhof (1990) observed that because of lack of community participation in planning of project activities, some afforestation projects e.g. Nyabisindu Agroforestry Project, Rwanda; Rural Afforestation Project, Zimbabwe; Village Afforestation Project, Tanzania and Turkana Rural Development Project, Kenya failed to realize their objectives. Kerkhof (1990) observed that there was no clear line of responsibilities for implementation of project activities in terms of how the communities were to be involved.

Dhubhain *et.al.* (2008) also observed that lack of community participation in project planning in Flanders, Ireland, led to a drag in project implementation in forest management in Newmarket and consequently Newmarket lagged behind the other areas in forest management. Sowers *et.al.* (1994) observed that USAID was forced to shift from 'top-down' to 'bottom-up' approach in technical service delivery in Nepal. In 'bottom-up' approach, farmers participated in planning of natural resource conservation activities. USAID experience in Nepal had shown, earlier, that lack of community participation in planning of natural resource conservation activities had led to poor achievement of objectives and impact.

In contrast to Dhubhain *et.al.* (2008), and on a positive note, Nair and Krishnakumar (2004) observed that Pezhumkamukal water supply project in India was successful because 100% of the beneficiaries participated in planning of the project's activities. Sikka and Sharda (2002), writing on land and water care through participatory watershed management in India and Mural *et.al.* (2003), writing on joint forest management projects in India, both, observed that because of lack of community participation in project planning the projects were not successful. However, Sikka and Sharda (2002) and Mural *et.al.* (2003) failed to provide data to support their arguments about the extent and/or levels of community participation in the project planning stage but only gave general statements about the lack of it in project planning and how this contributed to the failure of the projects.

4.2.3 Community Participation in Project Implementation

Project implementation serves to put into action the plans generated during the planning stage. In other words, the project is mobilized and executed. During implementation, planned activities are carried out. Progress is then assessed by beneficiaries, project management and stakeholders through continuous monitoring to enable adjustment to changing circumstances (Blackman, 2003; CORE, 2006; Twigg, 2007; ITAD, 2001). This stage of the project cycle is, really, about making sure the project is implemented in an organized and coordinated way and that there is regular monitoring, project adjustments and problem solving (CORE, 2006).

In order to establish the level of participation of the local communities at the project implementation stage, the researcher asked respondents to indicate the major activities the projects were carrying out. Across the three projects, 60.7% of respondents indicated that the

major activity of the projects was tree planting. But analysis at individual project level produced varied responses with SCC-VI and HL/NVDT respondents 68.7% and 46.2%, respectively, indicating that the major activity of the projects was tree planting. But according to 44.7% and 39.5% of WKIEMP respondents, the major activity of the project was tree planting and tree nurseries establishment, respectively (Figure 4.20). While SCC-VI and HL/NVDT projects had responses spread evenly over other response categories e.g. woodlot management, agroforestry practices and capacity-building, WKIEMP's responses were skewed towards tree planting and nursery establishment. WKIEMP's responses were weak on woodlot management and capacity building (Figure 4.20). This has serious implications on project sustainability because capacity building, for instance, is an integral part of effective project management.

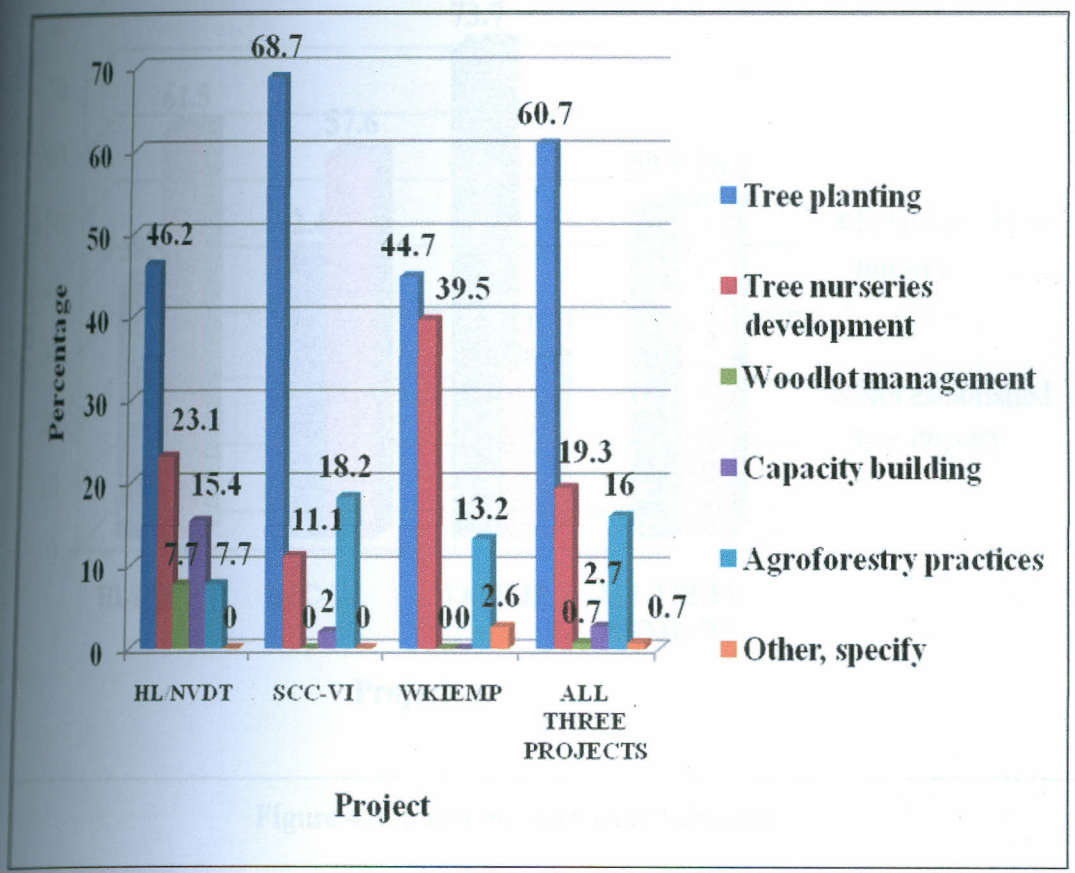

Figure 4.20: Major afforestation activity implemented by the projects

In order to find out whether the local community members were implementing projects activities, the researcher sought to find out whether they had established tree nurseries, established

woodlots and/or had been trained on afforestation and project management aspects. Consequently, the researcher asked the respondents to indicate whether they had established tree nurseries. When the three projects were analyzed together, the responses were 50% no and 50% yes, meaning that while some community members had established tree nurseries, others had not. But individual project level analysis revealed a different scenario with 73.7% of WKIEMP respondents indicating that they had established tree nurseries. HL/NVDT scored quite dismally on this aspect with only 38.5% of the respondents indicating that they had established tree nurseries. SCC-VI had responses split, almost, half-half i.e. 42% saying yes and 57.6% saying no (Figure 4.21).

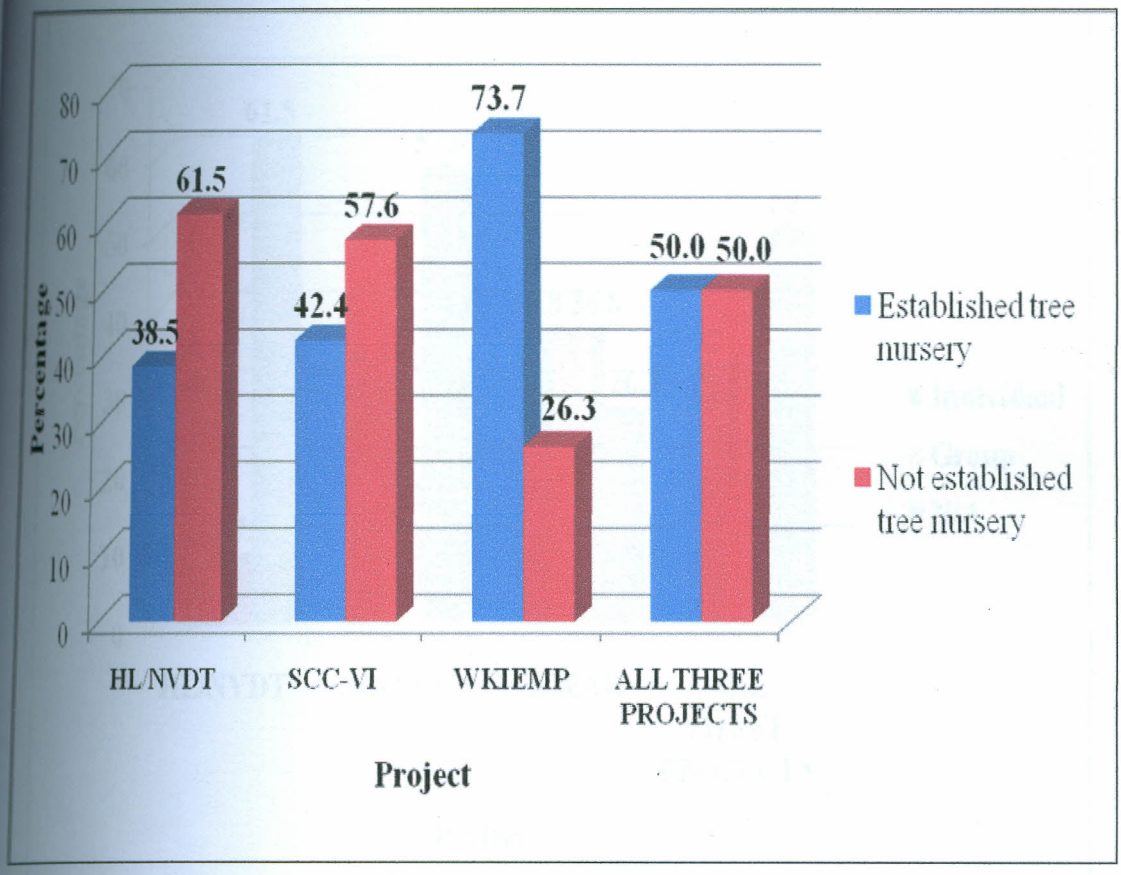

Figure 4.21: Tree nursery establishment

An interview with WKIEMP project management indicated that 200 households from all the project's intervention areas (sampled and non-sampled sub-locations) had established woodlots and some of them had also established tree nurseries. SCC-VI management indicated that 400 households, also from all the project intervention areas (sampled and non-sampled sub-locations)

involved in tree planting in agro-forestry systems and in establishment of home tree series. HL/NVDT management also indicated that 100 households from all the project ervention areas (sampled and non-sampled sub-locations) had established woodlots and also some of them had established tree nurseries. The researcher was also interested to find out ether the established tree nurseries were individually or group owned. The intention here was find out if the projects were emphasizing on individual or group tree nurseries. Usually, group ures attract leadership-related problems. Results from the three projects indicated that only % of the respondents had individual tree nurseries. However, analysis at individual project el indicated that 36.8% of WKIEMP respondents had group tree nurseries (Figure 4.22).

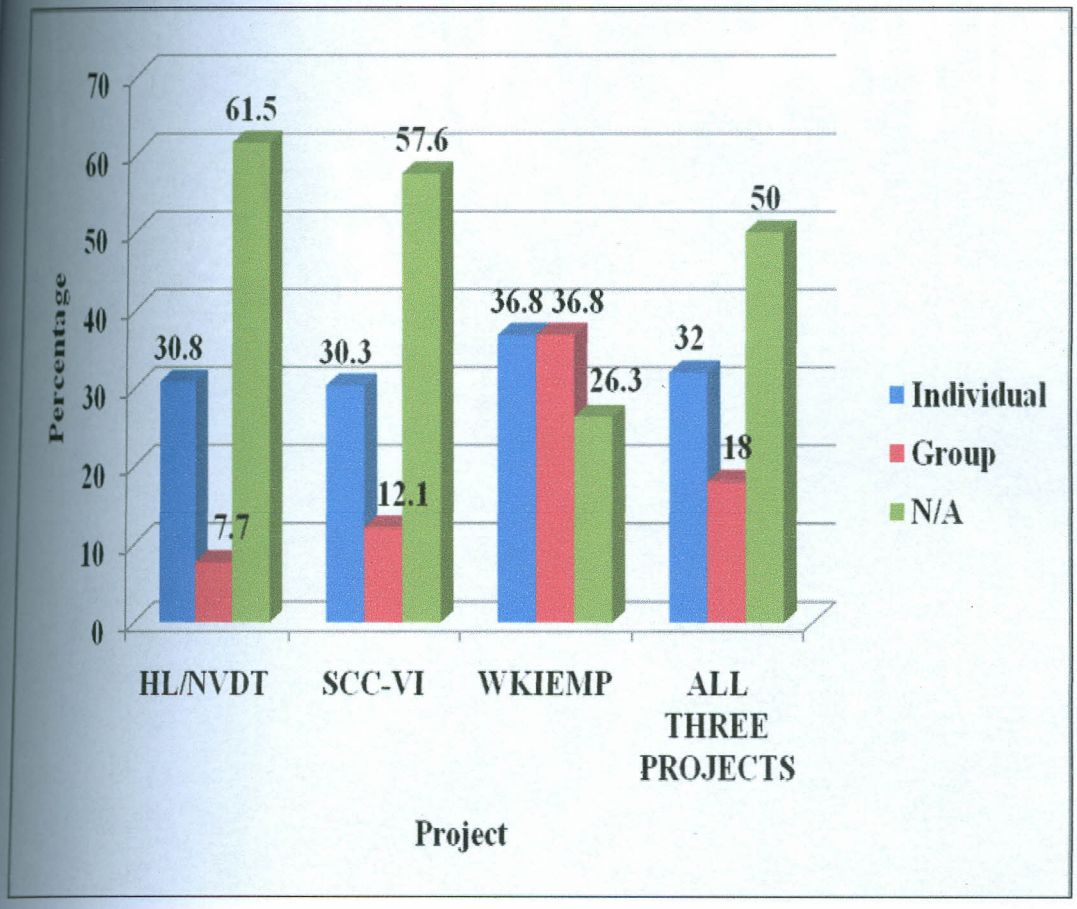

Figure 4.22: Ownership of tree nurseries

On the other hand, Focus Group Discussions (FGDs) from the two study sites indicated that individual tree nurseries were more prevalent in SCC-VI and HL/NVDT project sites while WKIEMP sites had more group tree nurseries. Plates 4.5 and 4.6 indicate the tree nursery types in the two study sites.

Plate 4.5: Woodlot and Home Tree Nursery in SCC-VI supported household, Upper Nyando

Plate 4.6: Group Tree Nursery supported by WKIEMP, Lower Nyando

The researcher was also interested to find out when the respondents had established the tree nurseries i.e. before or after project intervention. Out of those who had established tree nurseries, 0.7% of the respondents across the three projects said that they had established the nurseries after project intervention. When analysis was done at individual project level, the results indicated that 52.6% of WKIEMP respondents had established tree nurseries after project intervention. SCC-VI and HL/NVDT had 38.4% and 23.1%, respectively, of the respondents starting nurseries after project intervention. This can be interpreted to mean that WKIEMP had made great strides in the area of tree nursery development than SCC-VI and HL/NVDT. This is good because the communities would not only be able to raise income from tree seedlings to

improve their livelihoods but also plant the seedlings for fuelwood and timber and hence, ensure project sustainability.

The implementation of afforestation activities relies greatly on decision-making, not only at the project level but also, at the household level. In this regard, the researcher sought to establish who was involved in decision making about tree planting at the household level. The responses for this question were very interesting. Across the three projects, 55.3% of the respondents indicated that decision-making on tree planting at the household level was done by males. But at individual project analysis, the picture was quite different with majority of the WKIEMP respondents, 60.5%, indicating that decision-making on tree planting at the household level was done by females. HL/NVDT and SCC-VI respondents indicated that the decisions were made by males at 76.9% and 59.6%, respectively (Figure 4.23).

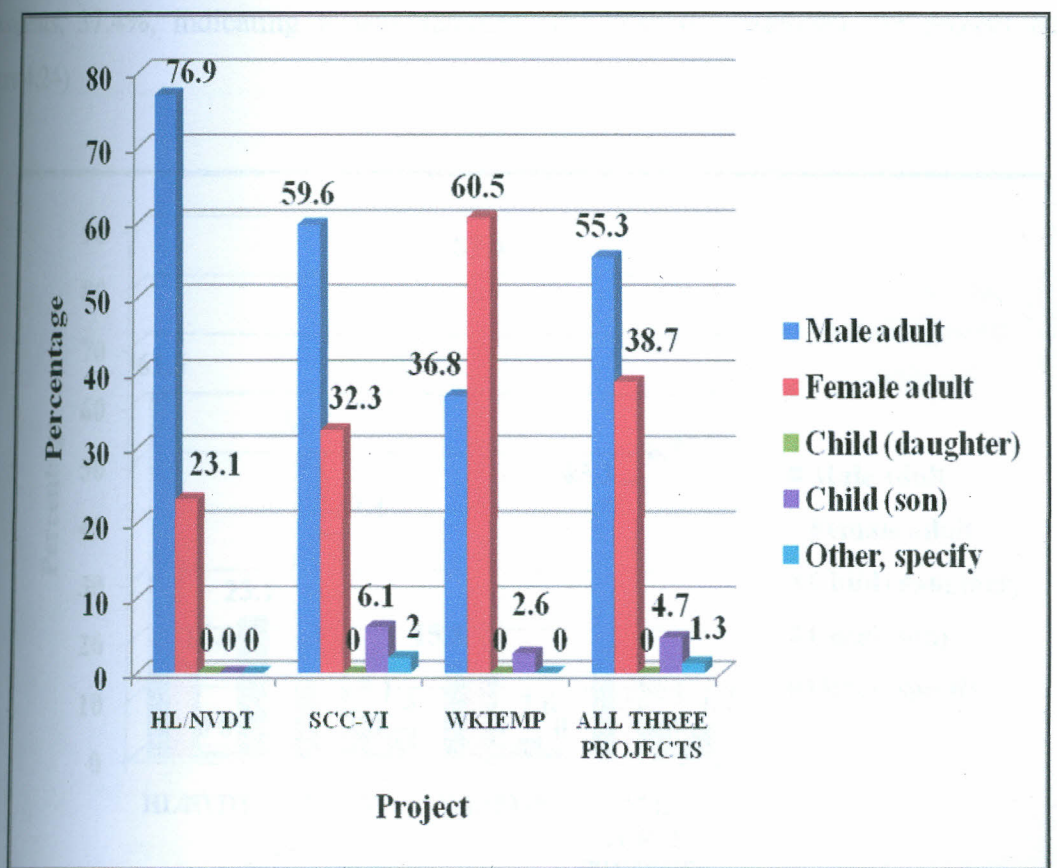

Figure 4.23: Person making decisions on tree planting in the household

Focus Group Discussions (FGDs) results also revealed that it was the male head of household who, usually, not only made decisions about tree planting in the household but also, controlled resource use including tree harvesting and sale. The researcher went a step further to find out whom among the household members, mostly, attended project meetings and activities. The intention here was to find out whether the person attending the project activities was also the same person making decisions on implementation of the project's activities at the household level. The responses for this question were a direct reverse of the immediate question above. While it was indicated that it was the males who made decisions on tree planting at the household, when it came to attending project activities the females dominated. Thus, across the three projects, 46.7% of the respondents indicated that it was females who, usually, attended project activities. At individual project level analysis, 81.6% of WKIEMP respondents indicated that it was females who attended project activities. SCC-VI had an equally high number of respondents, 37.4%, indicating it was females who, usually, attended the project activities (Figure 4.24).

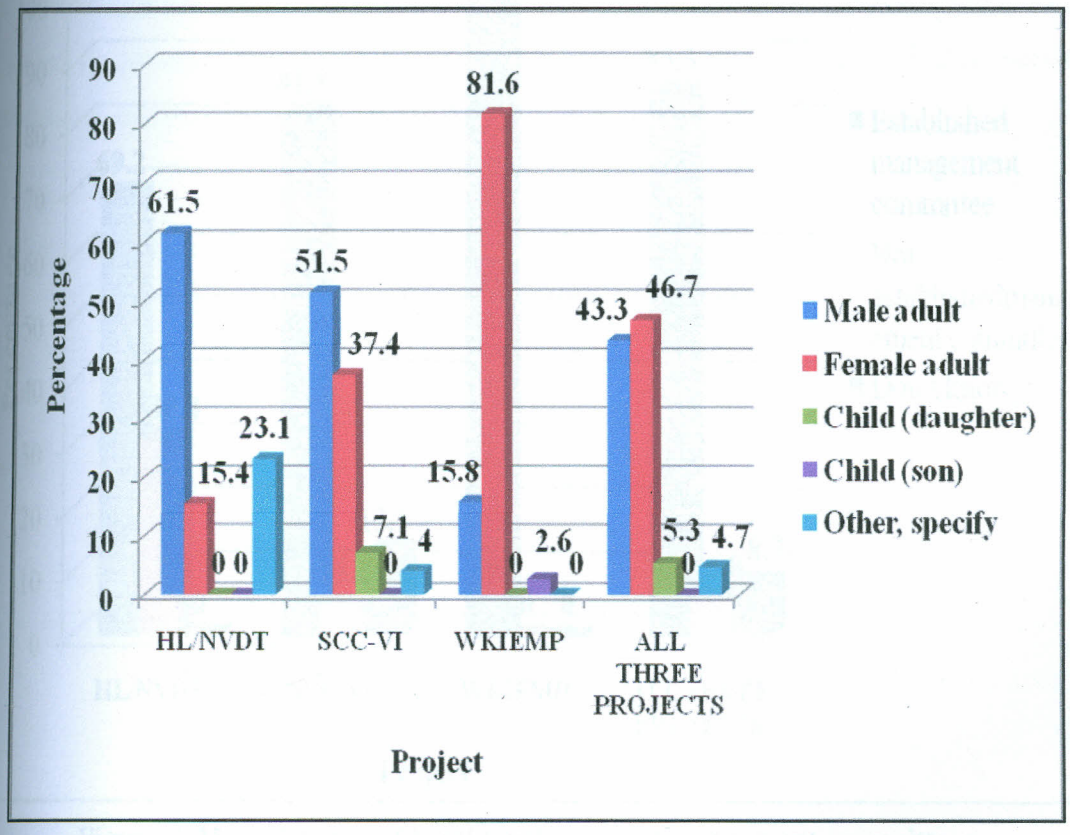

Figure 4.24: Person attending project activities from household

During project implementation, local level project management committees at project sites are very important for the day to day management of project activities. The committees, not only help translate project jargon to the beneficiaries but also, help in management of resources. Thus, democratically institutionalized management systems based at the community level are more likely to enhance long-term sustainability of afforestation projects. The researcher, consequently, sought to find out whether the projects had established focal area management committees to which 85.3% of the respondents across the three projects said yes. When analyzed individually, however, the results from the three projects were varied with all WKIEMP respondents indicating that the project had established focal area committees whereas SCC-VI had 81.8% and HL/NVDT 69.2%, respectively, of the respondents indicating that the project had established focal area committees (Figure 4.25). Interviews with the project management of the three projects revealed that the projects had established project management committees in the project sites.

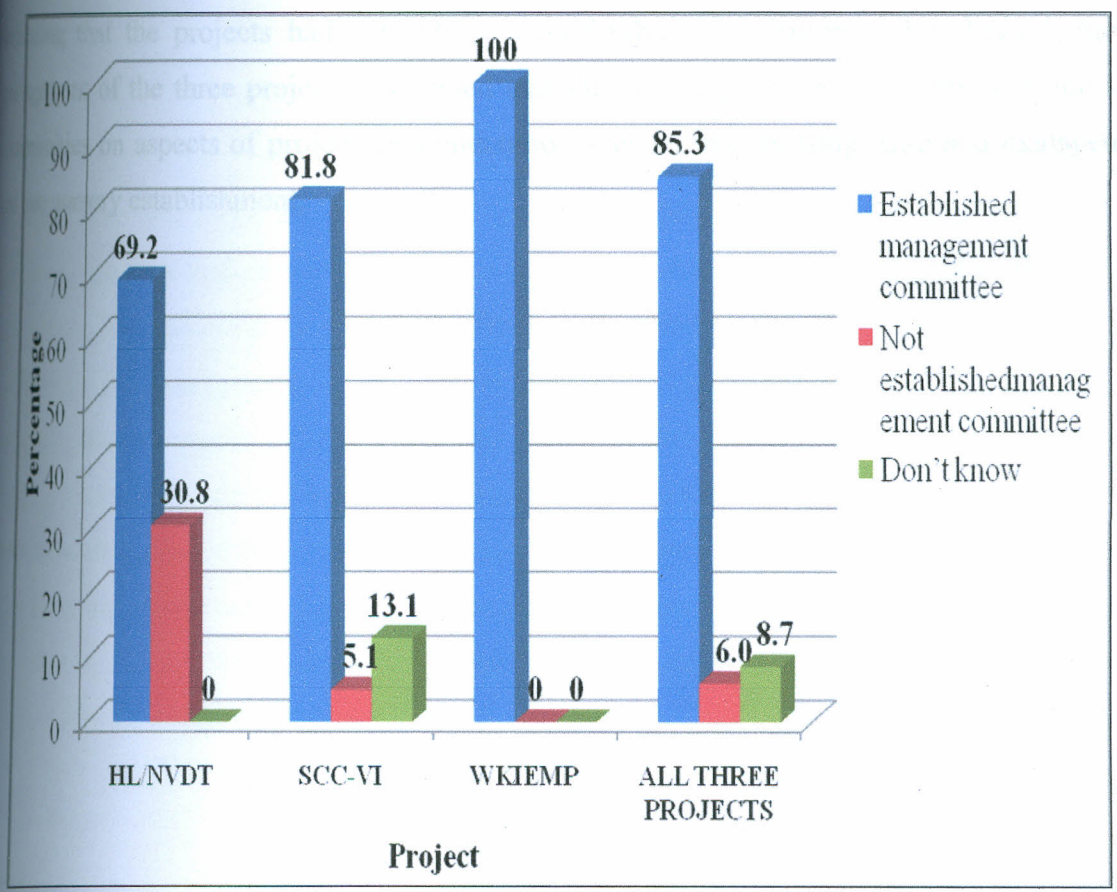

Figure 4.25: Existence of local level project management committees

However, by 30.8% of HL/NVDT respondents saying that the project had not established focal area committees means that the respondents were, either, genuinely not aware of the committees or that they were aware of them but were not happy about how they were constituted and/or were being run. Indeed, key informant interviews results indicated that convening of committee meetings was dictated upon by HL/NVDT management because HL/NVDT provided logistics hence, only those farmers considered active in project activities were given leadership roles.

Still on project implementation, there was need to find out if the projects had trained community members on afforestation activities and other project management aspects. The responses obtained regarding capacity building indicated that all the three projects had carried out trainings. Across the three projects, 95.3% of the respondents indicated that the projects had carried out capacity building on various project aspects. At individual project level, WKIEMP had 97.4% of the respondents indicating that the project had carried out capacity building, SCC-VI came close second with 96% and HL/NVDT came last with 84.6% of their respondents, in that order, indicating that the projects had carried out capacity-building (Figure 4.26). Indeed, project management of the three projects confirmed that they had capacity-built members of the local communities on aspects of project implementation such as tree planting, care and management and tree nursery establishment.

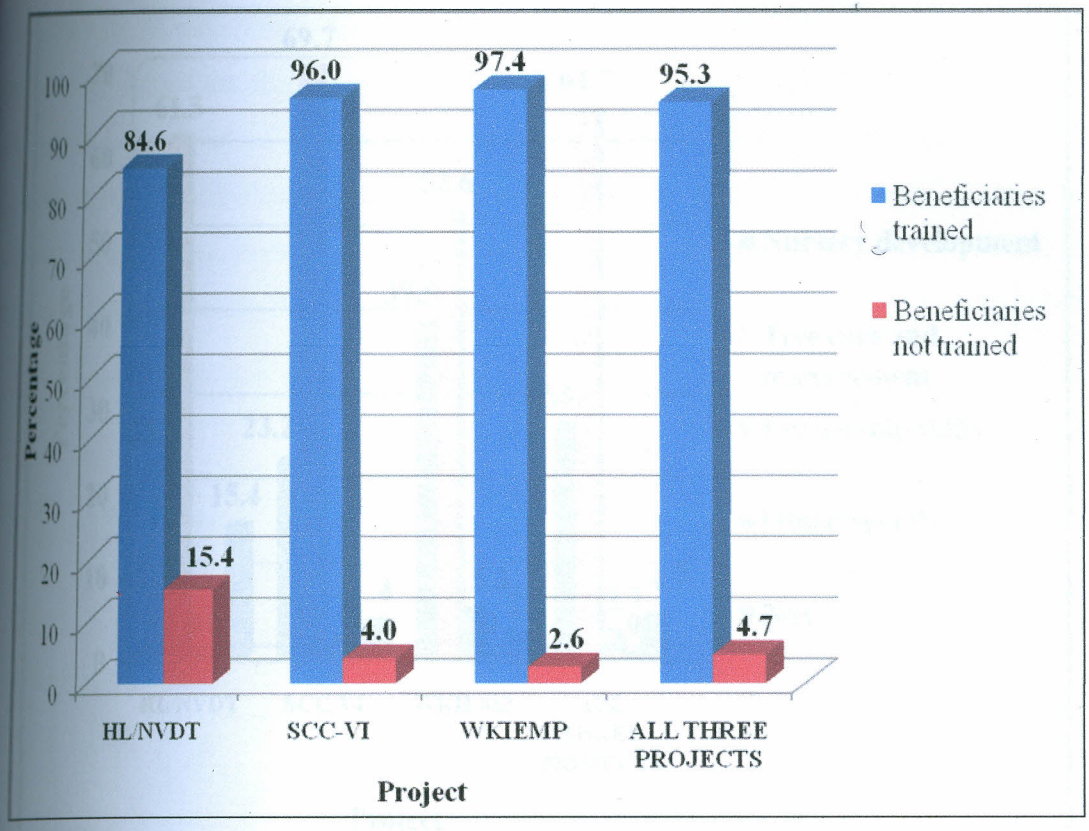

Figure 4.26: Capacity-building of beneficiaries

However, there was need for specific information about the nature of the trainings. The researcher, therefore, asked the respondents to indicate the type of training that the projects carried out. The intention here was to find out how well the projects had prepared the communities for management of project activities then and beyond project phase-out. The responses obtained across the three projects indicated that capacity-building on tree planting, care and management was the main focus as indicated by 64.7% of the respondents, followed by capacity-building on tree nursery development 27.3%. Capacity building on leadership skills and group dynamics scored very dismally across all the projects with only 2.7% of the respondents mentioning it. The worst affected project was HL/NVDT with a response of straight zero on the aspect of capacity-building (Figure 4.27).

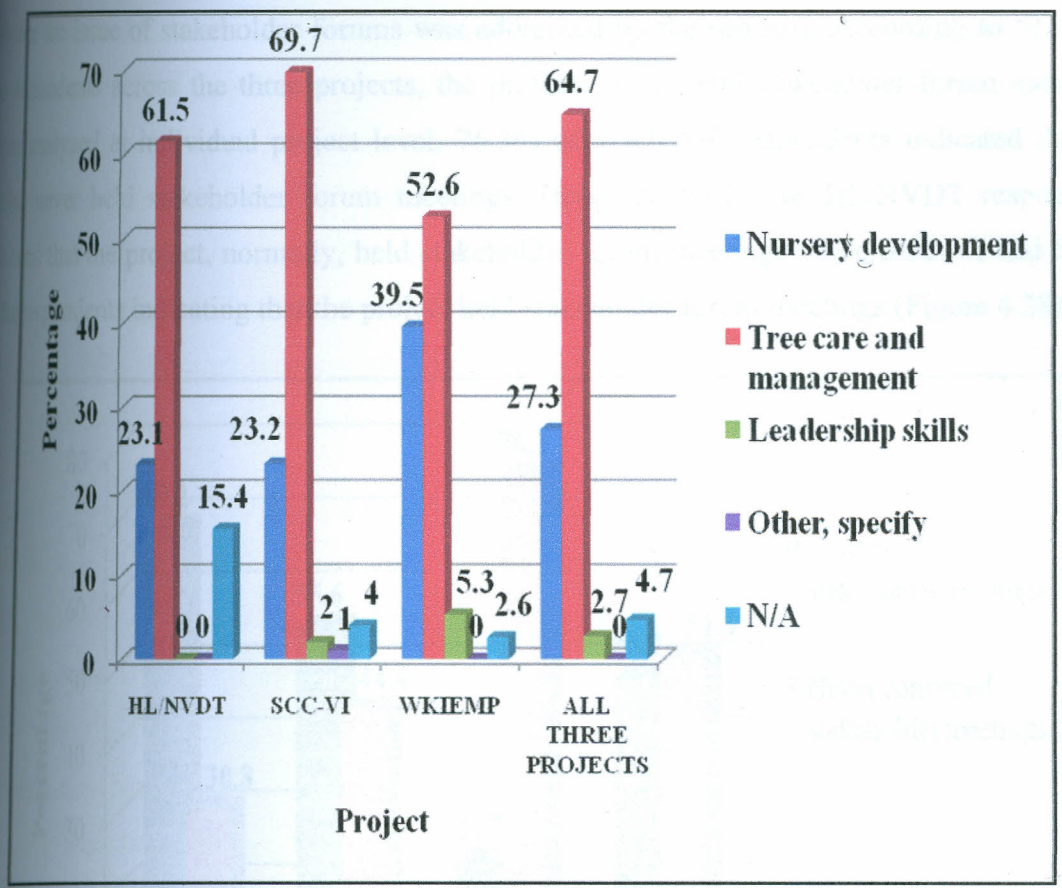

Figure 4.27: Aspects on which training is done

In an effort to probe further on this aspect, the researcher asked the respondents to indicate how capacity building was done. Some methods of training are interactive and others are informative. Interactive methods are usually appropriate for active participation because of exchange of ideas/experiences. The response categories included four items i.e. lecture, discussion, demonstration and other e.g. learning tours. Across the three projects, 56.7% of respondents indicated that capacity building was done through demonstration, 20% indicated discussion, 18% indicated lecture and 0.7% indicated other ways e.g. learning tours.

It is also expected that in project implementation, various stakeholders come together and share ideas about the implementation of project activities. This is, usually, done in stakeholder forums where each stakeholder contributes ideas about the role they could play in the implementation of intended activities. The coming together of various stakeholders ensures that efforts are focused, duplication of effort is minimized and collaboration and partnership are encouraged for sustainability of development initiatives. Consequently, the researcher sought to establish

whether the issue of stakeholder forums was addressed by the projects. According to 51.3% of the respondents across the three projects, the projects never held stakeholder forum meetings. When analyzed at individual project level, 76.3% of WKIEMP respondents indicated that the project never held stakeholder forum meetings. However, 69.2% of HL/NVDT respondents indicated that the project, normally, held stakeholder forum meetings while SCC-VI had 55.6% of the respondents indicating that the project held stakeholder forum meetings (Figure 4.28).

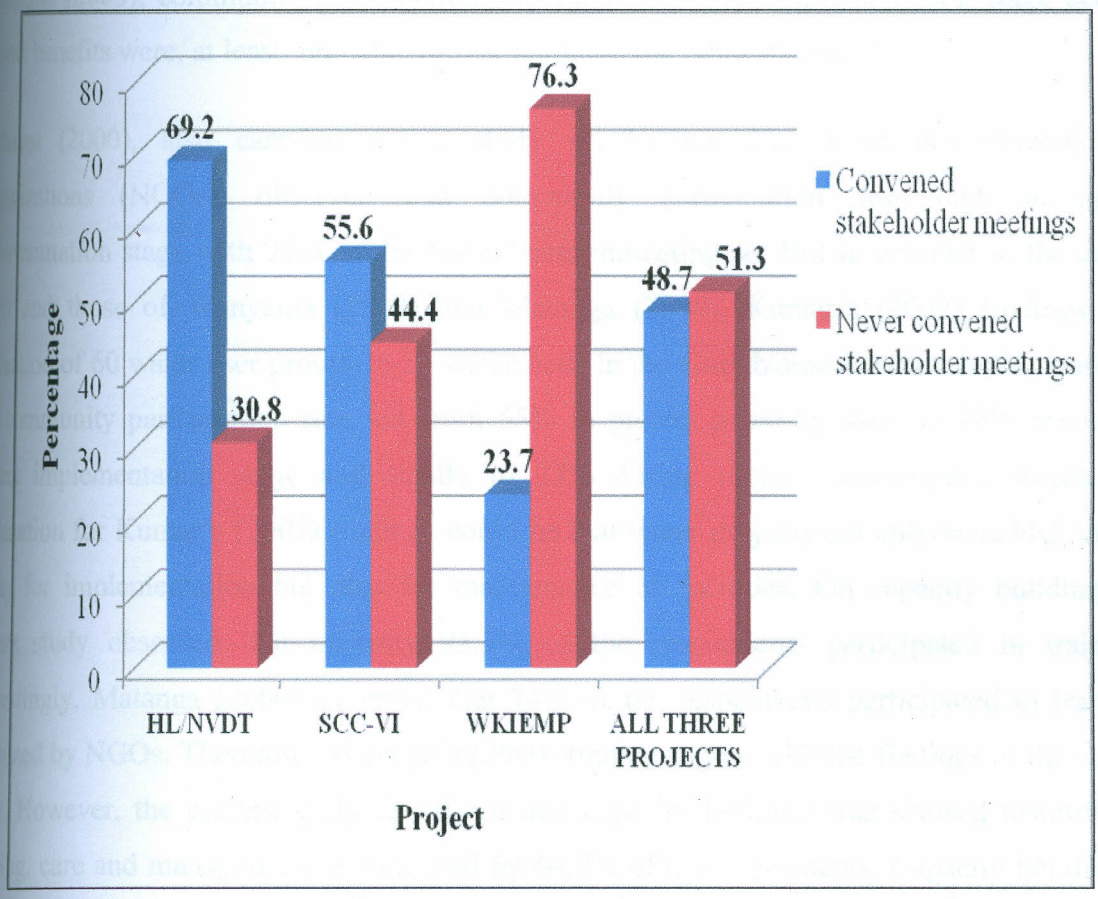

Figure 4.28: Convening of stakeholder forum meetings

That the projects rarely held stakeholder forum meetings means that they had shut out the doors for collaboration and partnership, which are essential mechanisms for project sustainability. In a situation such as this, there is likely to be duplication of effort because nobody cares to know what the other is doing. This may to lead to beneficiary fatigue hence, lowering the chances of project sustainability.

The above findings indicate that there was a good measure of community participation in the project implementation stage unlike in project identification and project planning stages. Studies done elsewhere also indicate that community participation in the project implementation stage tends to be higher than in the other stages. For instance, Wanyama (2003), carrying out a study community based organizations (CBOs) in Western Kenya, observed that 94.6% of the respondents participated at the project implementation stage of the CBOs. According to Wanyama (2003), community participation was high in project implementation stage because project benefits were, at least, probable or real unlike in the other stages.

Matanga (2000), also carrying out a study in Western Kenya on Non-Governmental Organizations (NGOs), observed that community participation was high in project implementation stage with 92% of the respondents indicating so. But in contrast to the current study and those of Wanyama (2003) and Matanga (2000), Kumar's (2007) findings from evaluation of 60 water user groups in 15 watersheds in the Coimbatore District, India, found out that community participation rate fell from 55% in project planning stage to 44% during the project implementation stage and finally to 27% during project maintenance stages. The explanation for Kumar's (2007) findings could be that water projects not only need high capital outlay for implementation but also for maintenance of facilities. On capacity building, the current study observed that majority 95.3% of the respondents participated in trainings. Interestingly, Matanga (2000) observed that 74% of the respondents participated in trainings organized by NGOs. Therefore, Matanga's (2000) findings agree with the findings of the current study. However, the current study found out that capacity building was skewed towards tree planting, care and management as indicated by 64.7% of the respondents. Capacity building on leadership skills and group dynamics scored poorly at 2.7%.

On the formation of local level committees, Manikutty (1998), in his paper on community participation in five water and sanitation projects in India, noted that water projects in Kerala state had constituted democratic and strong committees and hence, the reason why they were successful. However, in the current study, it was observed that committee elections were irregularly held hence, creating room for possible discord. Thus, while a number of other researchers such as Chokkalingam *et.al.* (2006), Pandey (2007), Shah *et.al.* (2000) cited in APO, 2002), Bastidas (2004), Jansens and Wildemeersch (2002), Mweene (2006), Sowers *et.al.*

(1994), Westaneys and Woodley (1998) and Adeola *et.al.* (2001) have also discussed the importance of community participation in project implementation and why lack of it in this stage of the project cycle has contributed to failure of projects, the authors have failed to provide data to support their arguments. And although this study did not focus on the success or failure of the afforestation projects in River Nyando basin, it has endeavored to provide practical data on community participation in the project implementation stage on which future studies may build.

4.2.4 Community Participation in Project Monitoring and Evaluation

Project monitoring provides lessons learnt during project implementation. By measuring, analyzing and reflecting on project performance, the beneficiaries, stakeholders and project management can learn lessons that could enable them make necessary project adjustments. Monitoring also ensures transparency and accountability. Evaluation on the other hand gives value judgments to information that is collected during monitoring. These judgments are then used to assess project impact and also serve as benchmarks to improve future project designs. More specifically, evaluation serves to assess the project's achievements and impact in relation to relevance, efficiency, effectiveness and sustainability (Blackman, 2003; CORE, 2006; Twigg, 2007; ITAD, 2001).

The researcher sought to find out whether the local community members participated in this stage of the project cycle. Several variables were examined to determine local communities' participation in this stage including; community participation in monitoring and evaluation, reasons for non-participation in monitoring and evaluation, design of monitoring and evaluation tools and accessibility to monitoring and evaluation reports by the community. In order to get information about the role of local communities in monitoring and evaluation of the afforestation projects, the researcher started off by asking the respondents to indicate whether they participated in the monitoring and evaluation of project activities. Overall, 52% of the respondents indicated that they never participated in the monitoring and evaluation of the activities of the afforestation projects. At individual project level the results varied because 35.8% of WKIEMP respondents indicated that they had participated in the monitoring and evaluation of project activities whereas 61.5% of HL/NVDT and 57.6% of SCC-VI respondents,

spectively, indicated that they had never taken part in monitoring and evaluation of project tivities (Figure 4.29).

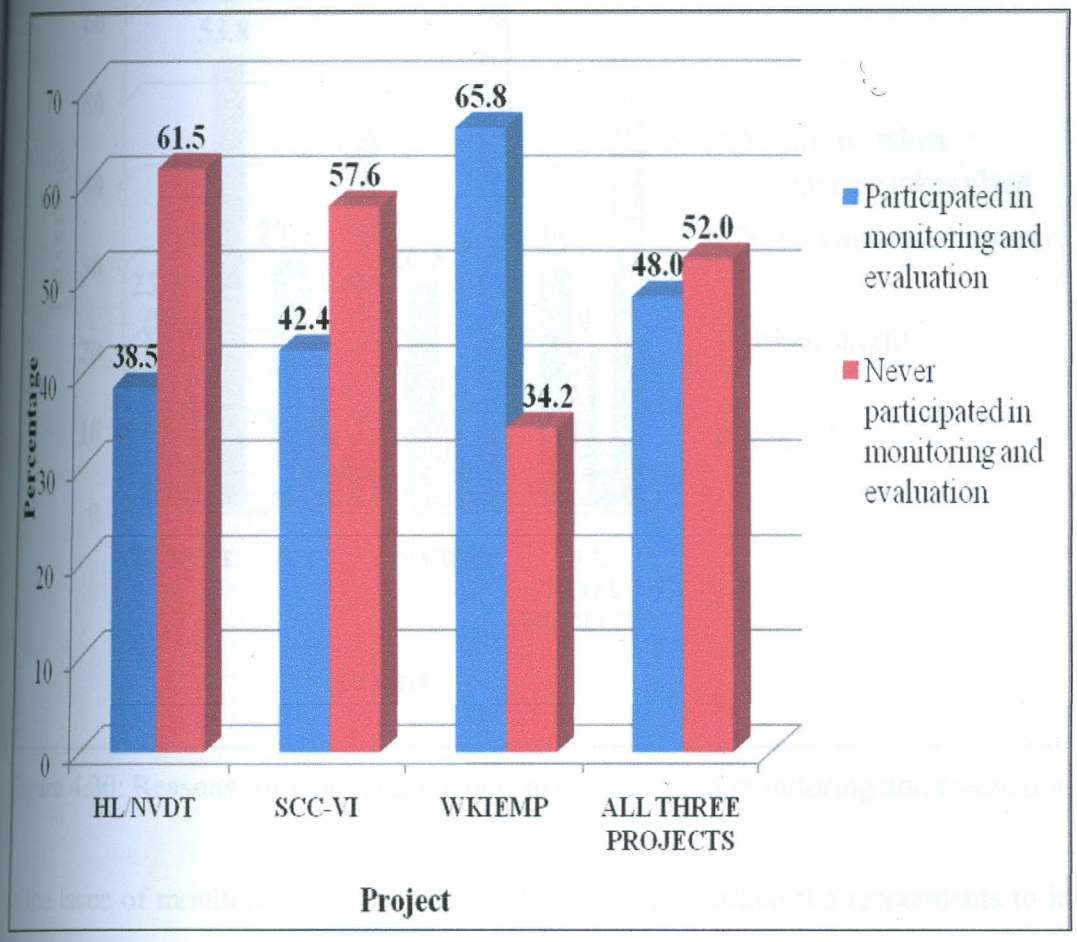

Figure 4.29: Community participation in monitoring and evaluation

n they were asked to give reasons for their non-participation, 28% of the respondents across hree projects indicated that they were not aware when monitoring and evaluation was carried About 18% indicated that they never participated in monitoring and evaluation because they never been invited to take part. At individual project level, SCC-VI scored dismally on toring and evaluation because 29.3% of the respondents indicated that they were not aware monitoring and evaluation was done. WKIEMP and HL/NVDT had 26.3% and 23.1% of respondents, respectively, indicating that they were not aware when monitoring and tion of project activities was done (Figure 4.30).

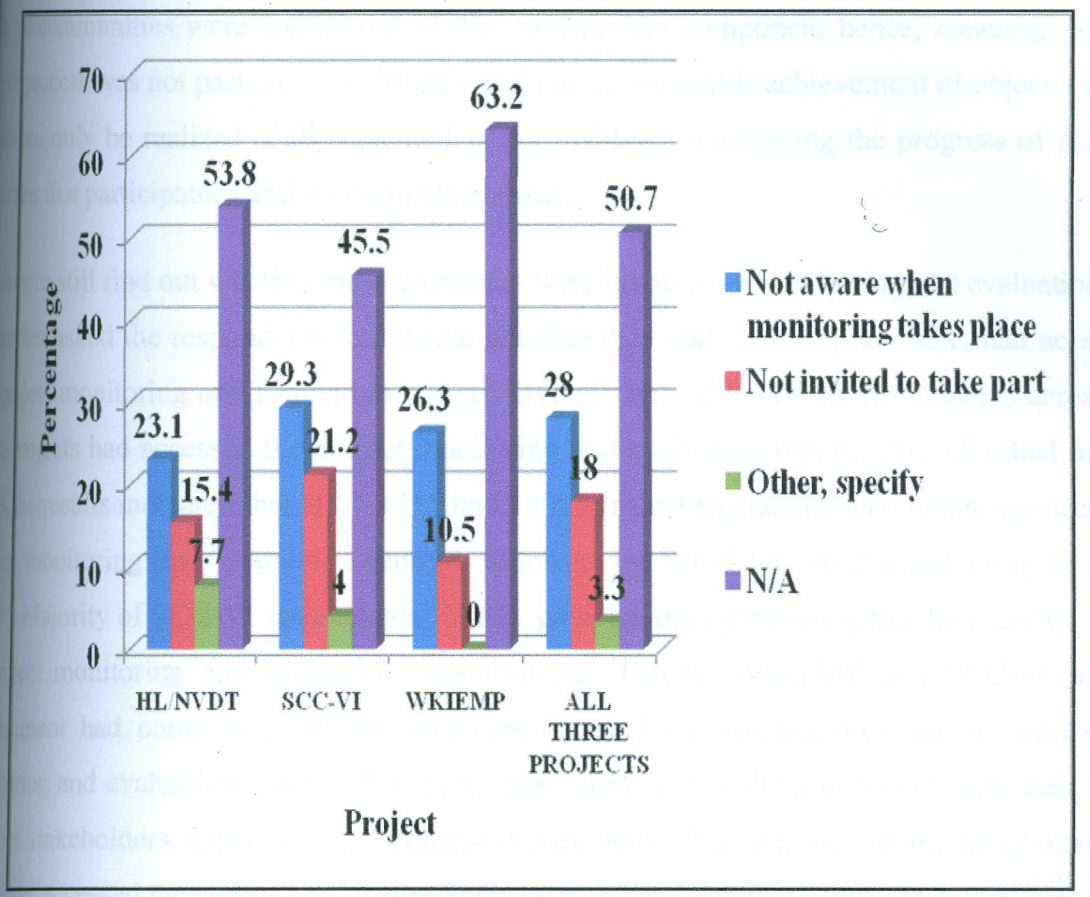

Figure 4.30: Reasons for respondent's non-participation in monitoring and evaluation

Still on the issue of monitoring and evaluation, the researcher asked the respondents to indicate who they thought was responsible for the development of project monitoring and evaluation tools. Thus, 40% of the respondents across the three projects indicated that the projects were responsible for the design of the project monitoring and evaluation tools. However, at individual project level, WKIEMP had 60.5% of the respondents who felt that the project monitoring and evaluation tools were designed by the project. SCC-VI came second with 36.4% while HL/NVDT came last with 15.4% of their respondents, respectively, indicating that the monitoring and evaluation tools were designed by the projects. Interviews with project management of the three projects revealed that WKIEMP and SCC-VI had monitoring and evaluation systems whereas HL/NVDT used *ad hoc* monitoring procedures. However, the interviews revealed that the WKIEMP and SCC-VI monitoring and evaluation systems were designed by the project management without any input from beneficiaries. Thus, indications that the monitoring and evaluation tools were largely designed by the project management, implies

the communities were locked out of this vital project component hence, meaning that the process was not participatory. Meaningful progress towards achievement of objectives and can only be realized if all stakeholders are involved in assessing the progress of planned ivities in a participatory and accountable manner.

rder to still find out whether the respondents were involved in monitoring and evaluation, the searcher asked the respondents to indicate whether they had, at any given time, had access to project monitoring and evaluation reports. Overall, only 2.7% of the respondents across the e projects had accessed the project monitoring and evaluation reports. At individual project el, the results indicated that HL/NVDT had 100% of the respondents who had never accessed ject monitoring and evaluation reports, followed by WKIEMP 76.3% and lastly SCC-VI 2%. Majority of SCC-VI respondents, 77.8%, gave no answer meaning that their participation project monitoring and evaluation was minimal. Indeed, WKIEMP and SCC-VI project nagement had confirmed that the members of the local communities did not access the nitoring and evaluation reports. However, monitoring and evaluation reports were accessible other stakeholders, especially government departments. That the local community members d never accessed monitoring and evaluation reports means that they were not actively involved the process and/or had not been involved in monitoring and evaluation of project activities at l. It also implies that the information feedback mechanism between the projects and neficiaries was poor. Without a participatory monitoring and evaluation system, it is, usually, fficult to gauge project progress, impact and sustainability.

e above findings reflect low level of community participation in the project monitoring and aluation stage. Studies done elsewhere, also indicate low level of community participation in is stage of the project cycle. Unfortunately, almost all the studies have not provided facts in rms of figures to show how low level of community participation was manifest in this stage but ve only given broad general statements. For instance, Kerkhof (1990) observed that lack of mmunity participation in monitoring and evaluation led to failure of afforestation and groforestry projects in Africa. Kerkhof (1990) observed this in relation to an evaluation of 21 forestation and agroforestry projects in Africa. Unfortunately, Kerkhof (1990) did not provide ractical data to back up these claims. Sikka and Sharda (2002) and Kumar (2007), too, entioned the importance of monitoring and evaluation and how lack of it has contributed to

failure of projects; but like Kerkhof (1990), they also did not provide statistics to support their assertions. Nair and Krishnakumar (2004) attempted to show that some water projects in India had succeeded because of community participation in the monitoring and evaluation stage but they also did not give statistics to support their arguments.

4.2.5 Testing of hypothesis on community participation in the various stages of the project cycle

This study had hypothesized that afforestation projects in River Nyando basin had not involved beneficiaries in the various stages of the project cycle i.e. project identification, planning, implementation and monitoring and evaluation. The results presented and discussed in the preceding sections have provided data on the nature of community participation in the different stages of the project cycle. The researcher had set a criterion in chapter three on how to test this hypothesis. Community participation in the different stages was tested using a participation scorecard of between 1 – 100 percent (Nampila, 2005). For Instance, a score of less than 50% means low participation and a score of more than 50% means good community participation (Table 4.1).

Table 4.1: Testing of hypothesis one (key)

No	Community Participation	Score
1	Very meaningful community participation	80% - 100%
2	Generally meaningful community participation	65% - 79%
3	Meaningful community participation	50% - 64%
4	Less meaningful community participation	21% - 49%
5	Very low community participation	10% - 20%
6	Non-existent community participation	1% - 9%

Adopted from: Nampila T. (2005)

Community participation in this regard has been taken to mean community consultation, involvement and action (in terms of implementation of project activities). From the community participation scorecard (Table 4.2), it can be concluded that there was low community participation in the afforestation projects in River Nyando basin. Meaningful community

ticipation was only evident in the project implementation stage. The hypothesis, therefore, at the afforestation projects had not involved local communities in the afforestation project cle could not be rejected.

Table 4.2: Testing of hypothesis (participation scorecard)

No	Project Stage	Yes	No	Conclusion
1	**Identification**	**100%**	**100%**	
	Proposal development	0.7	99.3	Very low community participation
	Accessibility to project proposal	0.7	99.3	
	Needs assessment	42	58	
	Site selection	4.7	95.4	
	Average score	**12**	**88**	
2	**Planning**	**100%**	**100%**	
	Project planning meetings	18.7	81.3	Less meaningful community participation
	Knowledge on project life span	14	86	
	Community contribution (time /labor)	56	44	
	Average score	**30**	**70**	
3	**Implementation**	**100%**	**100%**	
	Tree nursery and tree planting	50	50	Generally meaningful community participation
	Existence of local management committees	85.3	14.7	
	Capacity-building (tree care and nursery)	95.3	4.7	
	Stakeholder forums	48.7	51.3	
	Average score	**70**	**30**	
4	**Monitoring & Evaluation**	**100%**	**100%**	
	Participation in monitoring & evaluation	48	52	Very low community participation
	Development of monitoring &evaluation tools	2	98	
	Accessibility to monitoring and evaluation reports	2.7	97.3	
	Average score	**18**	**82**	
	Cumulative Average	**32.5**	**67.5**	Less meaningful community participation

4.3 Factors Determining Community Participation in Afforestation Projects

4.3.1 Socio-Economic Factors

In order to find out which factors influenced local community members' participation in the afforestation projects, the researcher started by asking the respondents to indicate whether they obtained any benefits from participating in the projects. Across the three projects, 92% of the respondents indicated that they obtained benefits from participating in the afforestation projects. At individual project level, WKIEMP had 94.7% of respondents indicating that they obtained benefits from participating in the project, followed by SCC-VI and HL/NVDT with 91.9% and 84.8%, respectively, of their respondents indicating that they obtained benefits from participating in the projects.

When they were asked to indicate which benefits they obtained, 57.3% of the respondents from across the three projects indicated that they obtained skills and technology. At individual project level, the results were rather interesting with 73.7% of WKIEMP respondents indicating that they obtained skills and technology from the project, followed by HL/NVDT with 76.9%. However, SCC-VI had mixed responses divided between material benefits and skills and technology, with 48.5% of the respondents indicating skills and technology and 42.4% indicating material benefits. The issue of benefits, among other factors, was also mentioned by the management of the three projects as influencing local communities' participation in the afforestation projects. WKIEMP management reported that the members participated in the project because of perceived benefits. According to WKIEMP management, the other factors influencing community participation included political patronage, clan affiliation, prestige and environmental stress. SCC-VI management indicated that local community members participated in the project because of perceived project benefits and environmental stress. HL/NVDT indicated that local community members participated in the project because of prestige (especially large scale farmers), environmental stress, uncertainty in the sugar industry and the availability of market for wood at Homa Lime factory.

Interviews with heads of departments also indicated that the members of the local communities participated in the projects because of anticipated benefits. The other factors determining participation included environmental stress, clan affiliation, especially, in Lower Nyando and

political patronage. That a good number of respondents indicated that they received material benefits such as seeds and farm tools from the projects can be interpreted to mean that, probably, the members were participating in the projects because of material gains. But there was need to establish whether this was true by establishing the relationship between benefits and participation. The researcher, therefore, carried out cross-tabulation between the benefits obtained from the projects and beneficiary participation in the projects (Table 4.3 (a).

Table 4.3 (a): Cross-tabulation of participation and benefits from projects

	Nature of support by project %				**Total**
Benefits from participation	Materials	Funds and materials	Other, specify	N/A	
Yes	82	1.3	8.7	0	**92**
No	5.3	0	1.3	1.3	**8**
Total	**87.3**	**1.3**	**10**	**1.3**	**100**

Table 4.3 (b): Chi-Square Test (0.05 confidence level)

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-square	24.392	3	.000
Likelihood ratio	11.617	3	.009
Linear-by-Linear Association	8.988	1	.003
Number of Valid Cases	150		

Table 4.3 (c): Gama Measure of Association

Value	Asymp. Std Error	Approx. T	Approx. Sig
0.628	.201	1.543	.123
150			

Source: Field Data, 2007

Table 4.3 (a) shows that 92% of the respondents obtained benefits from participation in the afforestation projects. Of these, 82% obtained the benefits from the projects in form of materials. The Chi-square significance value (Asymp. Sig.) of 0.000 (Table 4.3 (b) shows that the two variables are related. The gamma measure of association statistic value of +0.628 (Table 4.3 (c) means there is a strong positive relationship between participation in the afforestation projects and the benefits obtained from the projects by the respondents. That majority of the respondents obtained material support from the projects means the existence of a positive relationship between the two variables i.e. participation and benefits. The benefits accruing from the projects had, therefore, determined respondents' participation in the afforestation projects.

Still on the issue of benefits, the researcher probed further to inquire if the projects provided incentives to the beneficiaries during project functions and how these, probably, determined community participation in the projects. Across the three projects, 52.7% of the respondents indicated that they received incentives during project meetings and workshops. At individual project level, WKIEMP had 89.5% of respondents indicating that they received incentives during project meetings and/or workshops, followed by SCC-VI 56.6%. However, majority of HL/NVDT's respondents, 84.6%, indicated that they never received incentives during project meetings/workshops with only 15.4% of the respondents indicating that they did. When they were asked to indicate the type of incentives they got, 44.7% of the respondents across the three projects indicated that the projects gave them food during their functions. At individual project level, WKIEMP had 89.5% of respondents indicating that the project provided them with food, followed by SCC-VI 31.3%. Indeed, interviews with the project management indicated that all the projects gave some incentives during project functions. WKIEMP management indicated that they, usually, gave fare refund and/or participation allowance and food during some of their functions. SCC-VI management indicated that they, usually, gave fare refund and food during some of their functions. HL/NVDT also indicated that they, usually, provided food and stationery during some of their functions. In order to find out if these incentives, in any way, determined the local community members' participation in the projects, the researcher carried out cross-tabulation between incentives and participation to establish whether there was any relationship between the two variables (Table 4.4 (a).

Table 4.4 (a): Cross-Tabulation of project incentives and participation

	Participation %			Total
Incentives	Yes	No	N/A	
Yes	8	44.7	0	**52.7**
No	2	44	1.3	**47.3**
Total	**10**	**88.7**	**1.3**	**100**

Table 4.4 (b): Chi-Square Test (0.05 confidence level)

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-square	7.001	2	.030
Likelihood ratio	8.136	2	.017
Linear-by-Linear Association	3.582	1	.058
Number of Valid Cases	150		

Table 4.4 (c): Gama Measure of Association

Value	Asymp. Std Error	Approx. T	Approx. Sig
0.651	.189	2.716	.007
150			

Source: Field Data, 2007

Table 4.4 (a) shows 88.7% of the respondents indicated that that the incentives from the projects had not determined their participation in the projects' activities. Only 10% of the respondents indicated that the incentives had determined their participation in the projects. The Chi-square significance value (Asymp. Sig.) of 0.030 (Table 4.4 (b) shows that there is a weak relationship between participation and project incentives. The gamma measure of association statistic value of +0.651 (Table 4.4 (c) further shows that there is a weak relationship between the two

riables. Project incentives had, therefore, not significantly determined respondents' rticipation in the afforestation projects as one would have expected, probably, because they re not guaranteed like material benefits such as farm tools or seeds.

4.3.2 Environmental Factors

n order to probe further on the factors determining local community participation in the projects, e researcher asked the respondents to indicate the reasons that had made them plant trees in eir farms. Across the three projects, 34.7% of the respondents indicated that they had planted ees because they wanted to control soil erosion. A good number of respondents, 30.7%, also dicated that they had planted trees because they wanted to generate income for their useholds. However, at individual project level, responses varied. While at one end, 68.4% of KIEMP respondents indicated that they had planted trees because they wanted to control soil osion, at the other end, 46.2% of HL/NVDT respondents indicated that they had planted trees cause they wanted to generate income. SCC-VI had responses evenly spread over income neration 36%, soil erosion control 26.3% and fuelwood production 19.2% in that order. owever, in order to determine the relationship between environmental degradation and embers' participation in project activities through tree planting, the researcher carried out oss-tabulation between the two variables (Table 4.5 (a).

ble 4.5 (a): Cross-tabulation of major environmental problem and major reason for planting trees

	Major reason for planting trees %					Total
ajor vironmental oblem	For erosion control	For fuelwood production	For income generation	For home beautification	Other reason specify	
il erosion	32.7	12.0	15.3	3.3	6.0	69.3
ter pollution	2.0	2.0	6.7	2.7	2.0	15.4
forestation	0.0	2.7	4.0	0.0	0.7	7.4
her specify	0.0	2.0	4.7	0.7	0.7	8.1
tal	**34.7**	**18.7**	**30.7**	**6.7**	**9.4**	**100**

Table 4.5 (b): Chi-Square Test (0.05 confidence level)

	Value	df	Asymp. Sig. (2- sided)
rson Chi-square	32.767	12	.001
kelihood ratio	39.492	12	.000
ear-by-Linear Association	1.155	1	.282
mber of Valid Cases	150		

Table 4.5 (c): Gama Measure of Association

Value	Asymp. Std Error	Approx. T	Approx. Sig
0.468	.082	5.123	.000
150			

urce: Field Data, 2007

ble 4.5 (a) shows that 32.7% of the respondents had planted trees to control soil erosion while 3% of the respondents had planted trees for income generation. The Chi-square significance

(Asymp. Sig.) of 0.001 (Table 4.5 (b) shows that the two variables are related. The gamma sure of association statistic value of +0.468 (Table 4.5 (c) means there is a positive tionship between environmental degradation and tree planting. That majority of the pondents indicated that they had planted trees for erosion control means the existence of a itive relationship between the two variables i.e. environmental degradation and tree planting. other important reason for planting trees was for income generation. Environmental gradation (soil erosion control), therefore, determined respondents' participation in the restation projects.

3 Socio-Cultural Factors

ure plays an important role on how a group of people relates to one another and how they ceive the wider physical and socio-economic environment. Culture dictates how people ept change or reject it. The researcher, consequently, sought to establish whether culture had ermined local members' participation in the afforestation projects. In order to do this, the earcher carried out cross-tabulation of cultural taboos on tree planting and community ticipation (Table 4.6 (a).

Table 4.6 (a): Cross-tabulation of cultural taboos and participation

	Influence on participation %		**Total**
Cultural taboos	Yes	No	
Yes	3.3	35.3	38.6
No	4.7	56.7	61.4
Total	**8**	**92**	**100**

Table 4.6 (b): Chi-Square Test (0.05 confidence level)

	Value	df	Asymp. Sig. (2- sided)
rson Chi-square	.049	1	.824
kelihood ratio	.000	1	1.000
ear-by-Linear Association	.049	1	.825
mber of Valid Cases	150		

Table 4.6 (c): Gama Measure of Association

Value	Asymp. Std Error	Approx. T	Approx. Sig
0.068	.304	.220	.826
150			

urce: Field Data, 2007

ble 4.6 (a) shows that 92% of the respondents indicated that cultural taboos had not termined their participation in project activities. Only 8% of the respondents indicated that ltural taboos had determined their participation in the projects. The Chi-square significance lue (Asymp. Sig.) of 0.824 (Table 4.6 (b) illustrates that the two variables are unrelated. The mma measure of association statistic value of +0.068 (Table 4.6 (c) further shows that there is relationship between participation and cultural taboos. Cultural taboos had, therefore, not termined respondents' participation in the afforestation projects.

e researcher also carried out cross-tabulation between the respondent's household headship d the respondent's participation in the afforestation projects to establish whether there was a lationship between the two variables. The intention here was to find out whether the position of spondents as household heads had any influence in their participation in the projects (Table 4.7

Table 4.7 (a): Cross-tabulation of respondent's household headship and participation

	Influence on participation %		Total
Household status	**Yes**	**No**	
sehold head (Male)	18.0	25.3	**43.3**
sehold head (Female)	15.3	38.0	**53.3**
sehold head child (Son)	0.0	2.7	**2.7**
sehold head child ughter)	0.0	0.7	**0.7**
Total	**33.3**	**66.7**	**100**

Table 4.7 (b): Chi-Square Test (0.05 confidence level)

	Value	df	Asymp. Sig. (2- sided)
rson Chi-square	5.225	3	.156
kelihood ratio	6.732	3	.081
ear-by-Linear Association	4.828	1	.028
mber of Valid Cases	150		

Table 4.7 (c): Gama Measure of Association

Value	Asymp. Std Error	Approx. T	Approx. Sig
0.344	.149	2.153	.031
150			

urce: Field Data, 2007

ble 4.7 (a) shows that 66.7% of the respondents indicated that their household headship had determined their participation in afforestation projects. The Chi-square significance value (Asymp. Sig.) of 0.156 (Table 4.7 (b) shows that the two variables are unrelated. The gamma measure of association statistic value of +0.344 (Table 4.7 (c) further shows that there is no relationship between participation and respondent's household headship.

On the other hand, ownership and rights to land, largely, dictate how community members utilize the land in terms of the crops to plant and livestock to keep. When community members have rights to their pieces of land, they can put up permanent assets. Crops such as trees, usually, take long time to mature and, therefore, cannot be cultivated by members who, for instance, have leased land for a limited period of time. Consequently, the researcher carried out cross-tabulation between land tenure and community members participation in the afforestation projects (Table 4.8 (a).

Table 4.8 (a): Cross-tabulation of land tenure and participation

	Influence on participation%		**Total**
Land tenure	Yes	No	
Free hold	38.0	56.0	**94.0**
Communal	0.7	2.0	**2.7**
Trust land	0.7	0.7	**1.4**
Government	0.0	0.7	**0.7**
Other specify	0.0	1.3	**1.3**
Total	**39.4**	**60.7**	**100**

Table 4.8 (b): Chi-Square Test (0.05 confidence level)

	Value	df	Asymp. Sig. (2- sided)
rson Chi-square	2.455	4	.653
elihood ratio	3.528	4	.474
ear-by-Linear Association	1.640	1	.200
mber of Valid Cases	150		

Table 4.8 (c): Gama Measure of Association

Value	Asymp. Std Error	Approx. T	Approx. Sig
0.407	.336	1.200	.230
150			

ource: Field Data, 2007

Table 4.8 (a) shows that 60.7% of the respondents indicated that land tenure had not determined their participation in afforestation projects. Only 39.4% of the respondents indicated that land tenure had determined their participation in afforestation projects. The Chi-square significance value (Asymp. Sig.) of 0.653 (Table 4.8 (b) shows that the two variables are unrelated. The gamma measure of association statistic value of +0.407 (Table 4.8 (c) further shows that there is no relationship between land tenure and participation. The results show that majority of the households held free hold land tenure type. Other types of land ownership such as communal, government and trust land were minimal. In free hold land tenure, households have control and requisite ownership rights to put it under any use of their desire. Usually, priority on use of land, especially, when small is given to cultivation of food crops for household food security. Crops such as trees are regarded as secondary. Land tenure, therefore, did not determine respondents' participation in the afforestation projects.

Apart from the above variables, the researcher also asked the respondents whether their ages, levels of education and sizes of their farms influenced their participation in the projects. In relation to age, 78% of the respondents across the three projects indicated that age had not determined their participation in the afforestation projects. Only 22% of the respondents indicated that age had determined their participation. For those answering yes, the reason they gave was that when one is young, one is able absorb skills quickly and is also strong enough to do farm work. About level of education, 79.3% of the respondents indicated that their level of education had not determined their participation in the projects. Only 20.7% of the respondents indicated that their level of education had determined their participation in the projects. Again for those answering yes, the reason they gave was that an educated person is able to absorb skills easily than a non-educated one. The size of the farm was also found to have no influence on beneficiary participation in the projects. This is because 81.3% of the respondents answered no when they were asked whether the size of their farms determined their participation in the projects. Thus, only 18.7% of the respondents indicated that the size of their farms had determined their participation in the projects. The major reason they gave for this assertion was that their small pieces of land were not big enough for both tree and crop production. Planting trees on the small pieces of land, most often, led to boundary disputes and conflicts.

above results indicate that only three factors determined local communities' participation in restation projects in River Nyando basin: benefit factor, incentives and soil erosion control. benefit factor seemed to be the overriding factor. The findings of the current study compare ably with findings of other researchers. For example, Chowdhury (2004) observed that fits anticipated from projects influenced people's participation in the projects. Carrying out dy on people's participation on social forestry in Zathila and Betaga villages in Gazipur, gladesh, Chowdhury (2004) observed that 100% of the respondents joined social forestry jects because of anticipated benefits. Similarly, Maskey *et.al.* (2003), in their study of icipation in community forest management in Ludi-damgade, Nepal, also observed that ple participated in forest management because of anticipated benefits such as fuelwood and der. Maskey *et.al.* (2003) also observed that women participated more than men in forest ivities; which agrees with this research because females were found to participate more than les in project activities. Maskey *et.al.* (2003) recommended that research be carried out to ermine why females participated more than males at different levels of project activities. The rent study has also recommended that a study be carried out to find out why females attended restation activities more than males although males, usually, made important resource use isions at the household.

ctor and Bakare (2004), during their study in Ondo state, Nigeria, on rural livelihood benefits m participation in the taungya agroforestry system, observed that the local people participated the taungya system because of benefit factor. Victor and Bakare (2004) observed that through taungya system, the farmers were able to get important livelihood sustaining products from forests hence, enhancing their continued participation. Matanga (2000), in his study on Non-vernmental Organizations (NGOs) and the politics of rural development in Western Kenya, served that 85% of the beneficiaries participated in NGOs project activities because they had en exposed to beneficial alternative sources of income-generation. Matanga's (2000) results, ourably, compare with the results of the current study because as seen above, 92% of the spondents indicated that they got benefits from participation. Similarly, Wanyama (2003), in s study on the contribution of community based organizations to sustainable development in estern Kenya, observed that high participation, 94%, particularly, in the implementation stage as because of the 'benefit factor'.

(2007), carrying out a study on socio-cultural factors associated with the participation of women's associations in rural community development projects in Nigeria, observed that vision of rewards to women's associations highly influenced their participation in elopment projects. Deji (2007) recommended that self-help efforts should be mobilized and couraged through award of rewards for active beneficiary participation. Deji (2007) claimed this would enhance sustainable development at the community level. Unlike Deji (2007) recommended that participation should be encouraged through rewards, the current study gues that participation in project activities should not be pegged on rewards but rather on eficiaries' self-initiative, arising out of a genuinely identified problem, and only aided with ernal facilitation from project sponsors in 'a cost-sharing' manner. This study argues that couraging rewards for participation will encourage the dependency syndrome characteristic of st rural communities and which is not conducive for project sustainability. Still on the issue of efits, Oakley *et.al.* (1997) also observed that people are, usually, willing to participate in jects because of project rewards such as remuneration in cash or materials. Jakariya (2000), in study on community participation in water projects in India, observed that peoples' icipation was influenced by economic benefits. Unfortunately, Jakariya (2000) did not dicate which particular economic benefits influenced people's participation in the projects.

study by Chowdhury (2004) on people's participation on social forestry in Zathila and Betaga lages in Gazipur, Bangladesh, observed that 69% of the respondents had joined because of icipated environmental benefits. This study also found that 68.4% of WKIEMP respondents re participating in the project because of the need to control soil erosion: a serious vironmental problem in their locality. Just like Chowdhury (2004) who found out that 100% of spondents planted trees for speculative purposes, the current study found out that 15.3% of the spondents had planted trees for income generation. At individual project level, it was observed 46.2% of HL/NVDT respondents had planted trees for income-generation. On culture, this dy found out that culture, especially, cultural taboos did not determine people's participation afforestation projects. Unfortunately, no author has provided data on this variable and hence, king it difficult to compare results. It, probably, means culture is not an important determining or in people's participation in projects.

ke a study by Chowdhury (2004) on people's participation on social forestry in Zathila and ga villages in Gazipur, Bangladesh, found out that people's level of education influenced r participation in social forestry projects and while Jakariya (2000) in his study on mmunity participation in water projects in India, similarly, observed that peoples' participation s influenced by educational level, this study's finding was that education did not determine ple's participation in afforestation projects. The difference between the researcher's findings those of Chowdhury (2004) and Jakariya (2000) could be attributed to the fact that the dies were carried out in different socio-cultural settings.

ike the study by Maskey *et.al.* (2003 in Ludi-damgade, Nepal, on analysis of participation in mmunity forest management which revealed that landholding was positive and statistically nificant, the current study observed that there was no relationship between land tenure and rticipation. However, unlike Maskey *et.al.* (2003), this study attempted to find out whether usehold land size determined people's participation in project activities. Majority of the spondents, 81.3%, indicated that the size of their farms did not determine their participation in restation projects. But Suda (2000), during a study on gender, culture and environmental nservation in Nyando and Kericho districts of Western Kenya, observed that farmers with all pieces of land on very slopping terrains tended to participate more actively in conservation tivities than those with larger pieces in less slopping areas. The difference in results between researcher's and Suda's (2000) could be due to the fact that while Suda (2000) was looking at wider resource conservation field including soil conservation, the current study's focus was community participation in the project cycle management of afforestation activities.

is study observed that age did not determine community participation in afforestation projects. sults from FGDs in the two sites indicated that all members of the community, irrespective of participated in afforestation activities. The argument was that afforestation is part and parcel the household farming and livelihood system. However, Maskey *et.al.* (2003), in their study analysis of participation in community forest management in Ludi-damgade, Nepal, observed t older people tended to participate more in the community forestry programmes than younger ople. Maskey *et.al.* (2003 attributed this to the fact that older people were retired and had free e to participate in meetings. Similarly, Jakariya (2000), in his study on community rticipation in water projects in India, observed that peoples' participation was influenced by

Victor and Bakare (2004) also observed that most farmers within the 35–54 year age bracket icipated more in the taungya system than other categories because they were able to plant s an harvest them within their lifespan. The difference in findings between the researcher and r researchers, especially, Maskey *et.al.* (2003) and Jakariya (2000) could be due to the fact most of the inhabitants of River Nyando are peasant farmers and afforestation is just but one e household farming activities. This may not be the case with India where many people are ally in employment and/or business and hence, the reason why Maskey *et.al.* (2003) observed older people were retired and had free time to participate in project meetings.

e Chowdhury (2004), who in his study on people's participation on social forestry in Zathila Betaga villages in Gazipur, Bangladesh, observed that 39% had joined social forestry use of social status, key informant interviews with the Nyando District Forest Officer, ndo District Development Officer and WKIEMP Community Development Officer revealed some people joined the projects because of social status. Thus, people felt that by icipating in the projects, they stood a better chance of being noticed by project management development agents and hence, boosting their social standing over and above the rest.

3.4 Testing of hypothesis on factors determining community participation in afforestation projects

is study had hypothesized that local communities' participation in afforestation projects' ivities in River Nyando basin was not determined by the benefits the community obtained m the afforestation projects. Results below (Table 4.9) show that community participation and efits from participation were strongly related than the other factors. The hypothesis that mmunity participation in the afforestation projects was not determined by the benefits the mmunity obtained from the projects was, therefore, rejected.

Table 4.9: Testing of Hypothesis two: Cross-tabulation of dependent and independent variables

	Dependent Variable	Independent Variable	Chi-Square Test of Association Value (0.05)	Gamma measure of association Value	Conclusion
	Community participation	Benefits from afforestation projects	0.000	+0.628	Strong positive relationship/association
	Community participation	Project incentives	0.030	+0.651	Strong positive relationship/association
	Community participation	Cultural taboos	0.824	+0.068	No relationship/association
	Community participation	Household headship	0.156	+0.344	No relationship/association
	Community participation	Land tenure	0.653	+0.407	No relationship/association

Source: Field Data, 2007

The Mechanisms for Sustainability of Afforestation Activities

Local Communities' Contribution to Project Implementation

order to establish whether the projects had built the necessary mechanisms for sustainability of forestation activities, the researcher started by asking the respondents to indicate whether they been asked to make any contributions to the project, be it time, money or materials. mmunity contribution is assign of commitment by the beneficiaries that the idea has been epted and they are ready to own and sustain it. Across the three projects, 77.3% of the pondents indicated that they provided labor for project activities such as tree planting and sery development. At individual project level, WKIEMP topped the list with 84.2% of the pondents indicating that they provided labor for project activities, especially, tree nurseries elopment. SCC-VI was second with 75.8% and HL/NVDT was third with 69.2% pectively, of their respondents indicating that they had provided labor for project activities. erviews with project management of the three projects also revealed that the members of the al communities, indeed, implemented project activities by availing themselves during joint ivities and/or individual activities at household farm level (Figure 4.31).

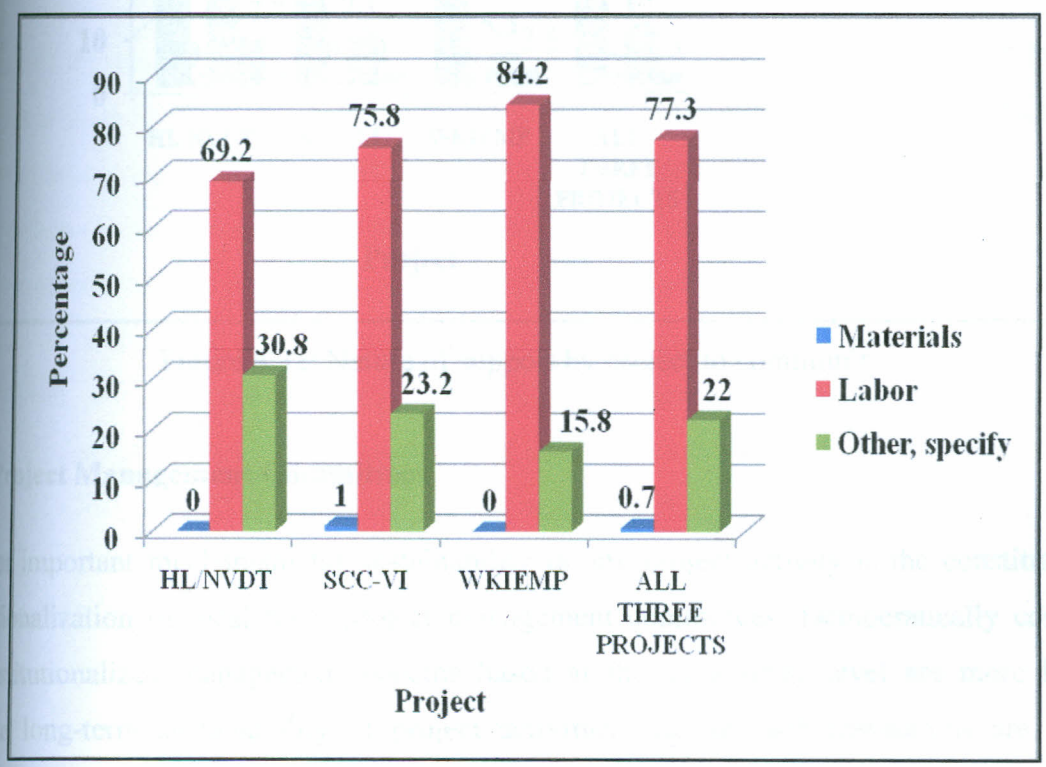

Figure 4.31: Nature of support by community to the project

n they were asked about the nature of support given by the projects, 87.3% of the pondents across the three projects indicated materials. When analysis was done at individual ject level, WKIEMP topped the list with 92.1% of the respondents saying that the project vided them with materials such as seeds and small farm tools. SCC-VI was second with 9% and HL/NVDT was third with 53.8%, of their respondents, respectively, indicating that projects provided them with materials such as seed and small farm tools (Figure 4.32).

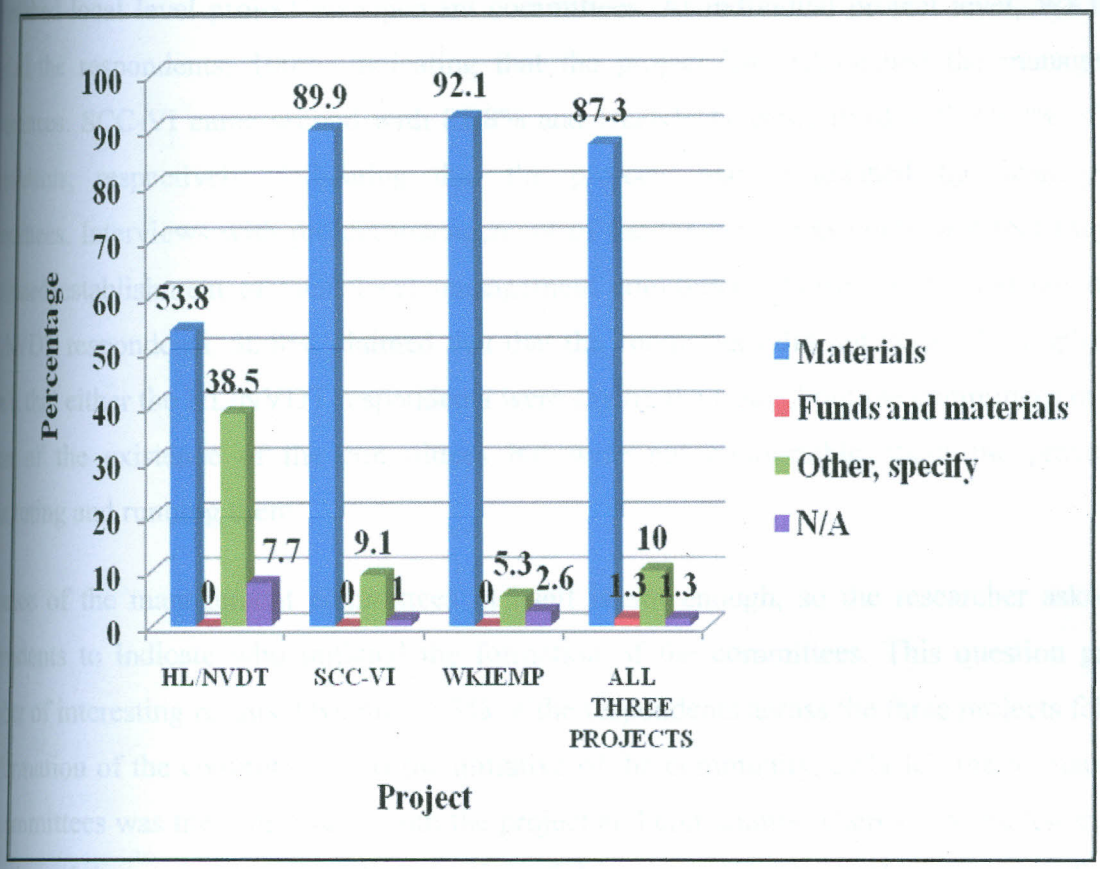

Figure 4.32: Nature of support by project to community

4.2 Project Management Committees

nother important mechanism for sustainability in any project activity is the constitution and stitutionalization of local level project management committees. Democratically constituted d institutionalized management systems based at the community level are more likely to hance long-term sustainability of project activities because such institutions are, usually, pected to provide fora for discussion and sharing of views on project implementation and

agement hence, providing the necessary information for project adjustments. Presence of l level management committees is conducive for sustainability of project activities because it es a sense of empowerment and ownership on the part of the beneficiaries.

establish whether the projects had established local level project management committees, the earcher asked the respondents to indicate if they were aware of the existence of such mittees. Across the three projects, 85.3% of the respondents indicated that the projects had blished local level project management committees. At individual project level, WKIEMP l all the respondents, 100%, indicating that the project had established the management mittees. SCC-VI came second with 81.8% and HL/NVDT came third with 69.2% of their pondents, respectively, indicating that the projects had established the management mittees. Interviews with project management of the three projects confirmed that they had ilitated establishment of local level management committees. However, a good number of NVDT respondents, 30.8%, claimed that that the committees did not exist. The implication e is that either the HL/NVDT respondents were saying the truth about the committees or were re of the existence of the committees but were not comfortable about the process of stituting and running them.

sence of the management committees in itself is not enough, so the researcher asked the pondents to indicate who initiated the formation of the committees. This question gave a mber of interesting results. Overall, 27.3% of the respondents across the three projects felt that formation of the committees was the initiative of the community, 26% felt the formation of committees was the initiative of both the project and community whereas 25.3% felt that the mation of the committees was the initiative of the community alone. However, at individual ject level, the results were dramatically different because WKIEMP had 60.5% of the pondents indicating that the formation of the committees was the initiative of the community hereas SCC-VI and HL/NVDT had 31.3% and 30.8% of their respondents, respectively, dicating that the formation of the committees was the initiative of both the project and the mmunity. HL/NVDT and SCC-VI also had, equally, high numbers of respondents, 30.8% and .2%, respectively, indicating that the formation of the committees was the initiative of the oject (Figure 4.33). Based on these results, it means that WKIEMP was, either, working with

ly established committees or had simply recognized the important role of local institutions e management of project activities and hence, the high response level among respondents.

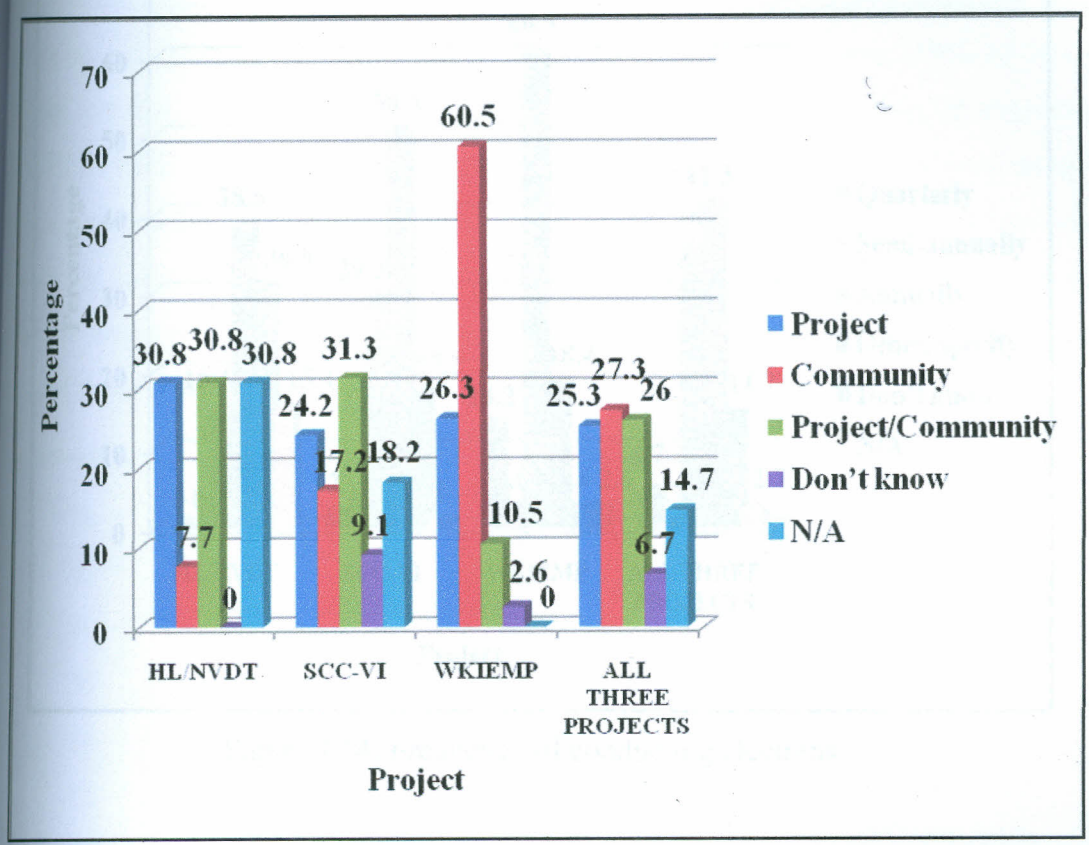

Figure 4.33: Who spearheaded formation of the committee

sides the formation of the committees, the researcher also asked the respondents to indicate w often committee elections were conducted and how often committee meetings were held. s, 41.3% of the respondents across the three projects indicated that committee elections were held regularly. About 36% of the respondents indicated that the elections were held annually. individual project level, 60.5% of WKIEMP respondents indicated that the committee ctions were held annually, followed by SCC-VI with 29.3% and lastly by HL/NVDT with 4% of their respondents, respectively, indicating that the committee elections were held nually. However, SCC-VI and HL/NVDT had high numbers of their respondents, 50.5% and 5%, respectively, indicating that committee elections were held at other times instead of rterly, semi-annually and annually. An equally high number of HL/NVDT respondents, 8%, indicated that they did not know when the elections are conducted (Figure 4.34).

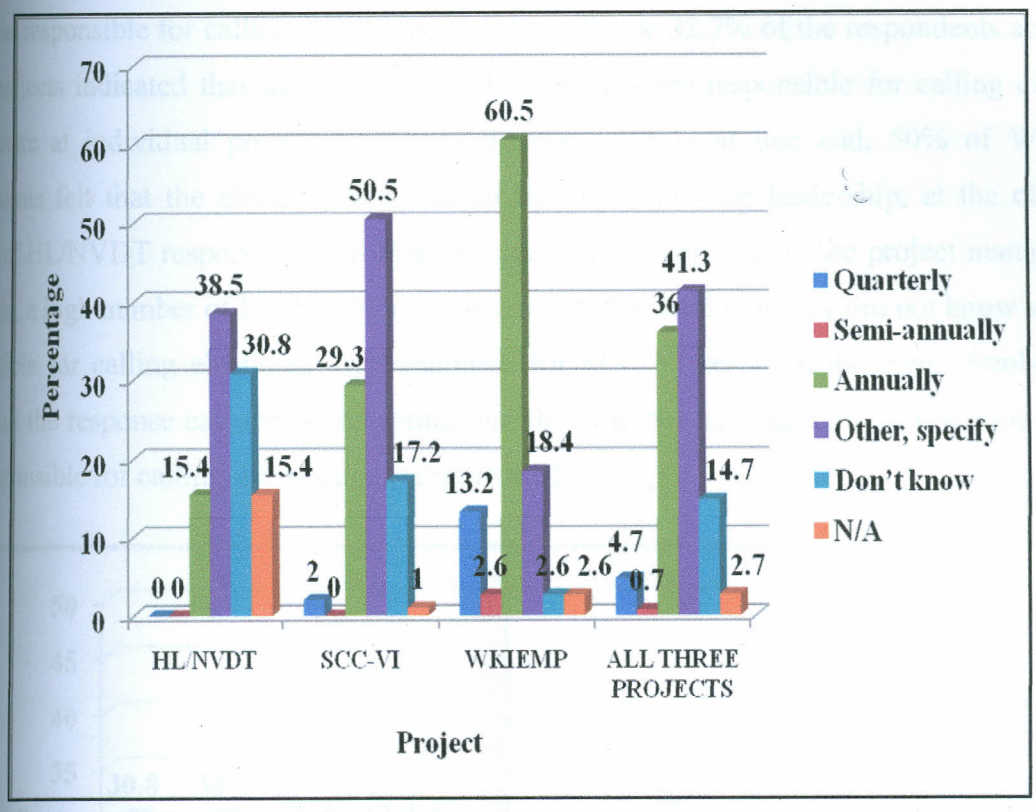

Figure 4.34: Frequency of conducting elections

Thus, the high number of respondents indicating that the elections were held annually and/or during unspecified periods means that the election process in the projects was inconsistent, irregular and undemocratic. FGDs indicated that there was no clearly defined structure on elections. Some committee officials were elected unopposed with due influence/backing from project management. In such situation, conflicts are bound to arise, implementation of activities slowed down and apathy created. This is a threat to sustainability of project activities because progressive deliberations cannot be reached in an undemocratic electoral environment. Usually, an election process that is irregular is prone to manipulation, thereby, undermining democracy, which is necessary for community confidence and goodwill and for effective systems sustainability. The ability to hold frequent meetings is considered essential for project sustainability because there is always need for constant consultation to achieve participatory performance. When meetings are not held regularly, fora for discussion and sharing of views about project's implementation and management are denied and the people's opinion suppressed for consultation and participatory development.

haps to explore more on the issue of elections, the researcher asked respondents to indicate o was responsible for calling committee elections. While 32.7% of the respondents across the e projects indicated that the committees' leadership were responsible for calling elections, e picture at individual project level was different. While at one end, 50% of WKIEMP pondents felt that the elections were called by the committee leadership, at the other end 8% of HL/NVDT respondents felt that the elections were called by the project management. t also, a high number of HL/NVDT respondents, 30.8%, said that they did not know who was sponsible for calling elections. The responses for SCC-VI respondents' were evenly spread oss all the response categories indicating that they did not have specific information on who s responsible for calling the elections (Figure 4.35).

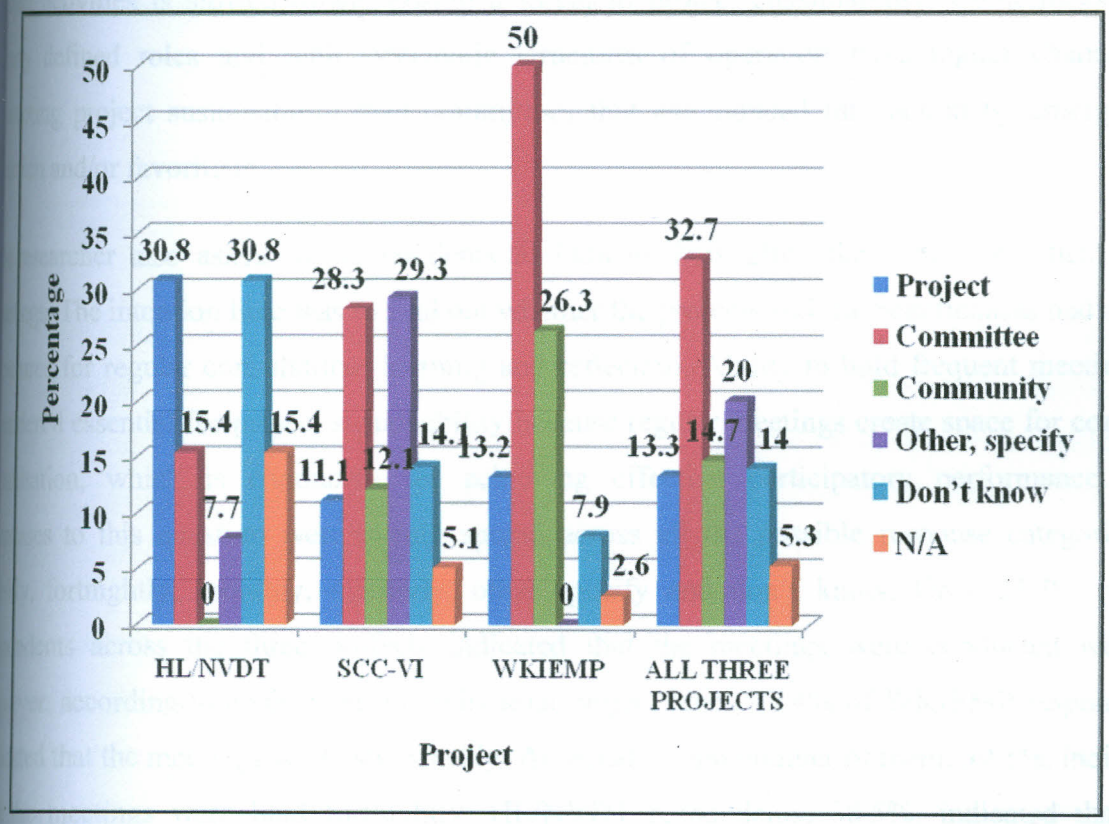

Figure 4.35: Calling of committee elections

at there was no clear information on who calls elections means that there were no properly nstituted institutions in the projects for overseeing the electoral process. In such situation, fluential persons in the community are bound to impose themselves as leaders and deny the iceless a chance to express their concerns and aspirations, which is a further threat to project

inability. Again, the mixture of responses regarding the process of calling elections and who responsible, either, means that the whole process of conducting committee elections was and uncoordinated or that there were so many committees with different agenda that the ple were confused to differentiate between them and/or clearly demarcate their roles. This is reat to project sustainability because an unfair method of conducting elections is likely to e peoples' confidence in project affairs and is also likely to lead to non-achievement of ject goals hence, the ultimate blow to sustainable afforestation development. When popularly ted and, fairly, constituted committees are involved in every stage of project management, project is likely to encounter few activity implementation challenges during its lifespan. But re community has no confidence in the potential of such committees, implementation of ject activities is slowed down, posing a threat to project sustainability. Committees with rly defined roles and with systematic structures of operation have higher chances of moting project sustainability than committees that are induced into action by emergency, rcion and/or favoritism.

e researcher also asked the respondents to indicate how often the committees held their etings. The intention here was to find out whether the projects and the beneficiaries had set up ctures for regular consultation, learning and reflection. Ability to hold frequent meetings is sidered essential for project sustainability because regular meetings create space for constant sultation, which is conducive for achieving effective participatory performance. The sponses to this question were evenly spread across all the possible response categories of kly, fortnightly, monthly, quarterly, other specify and don't know. Only 23.3% of the spondents across the three projects indicated that the meetings were conducted weekly. wever, according to analysis at the individual project level, 47.4% of WKIEMP respondents dicated that the meetings were held weekly. An equally high number of them, 39.5%, indicated t the meetings were held fortnightly. HL/NVDT respondents, 38.5%, indicated that the etings were conducted fortnightly. The responses for SCC-VI respondents were evenly spread ross the various response categories (Figure 4.36).

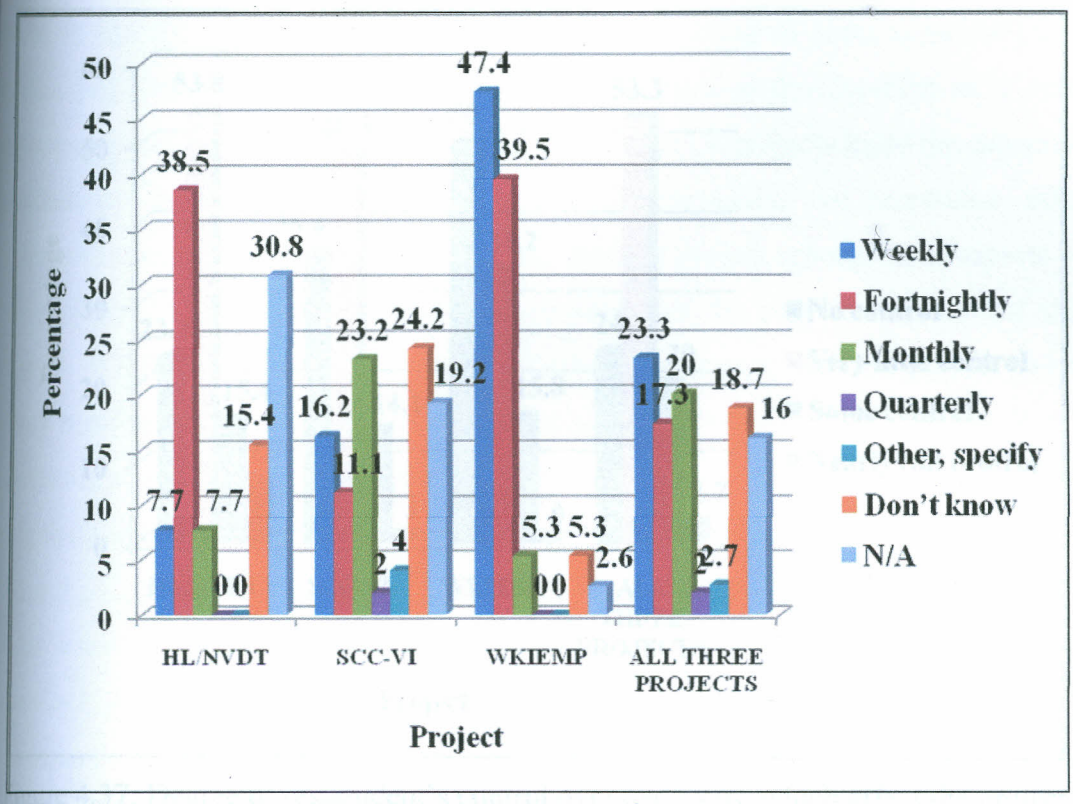

Figure 4.36: Frequency of committee meetings

at the respondents across the three projects indicated mixed responses on when meetings were nducted means that, either, the members were not aware and/or not invited to the meetings or at the meetings were only held by a small clique of people, probably the elites, within the mmunity. Then if this was the case, there was a danger of working with weaker committees rving the interests of a few individuals within the community.

hen the respondents were asked to indicate what level of control they had over project cisions, 53.3% across the three projects indicated that they had very little control, while 24% dicated that they had virtually no control over project decisions. At individual project level, L/NVDT had 53.8% of the respondents indicating that they had very little control over project cisions, followed by SCC-VI with 48.5% and WKIEMP with 34.2% of their respondents, spectively (Figure 4.37).

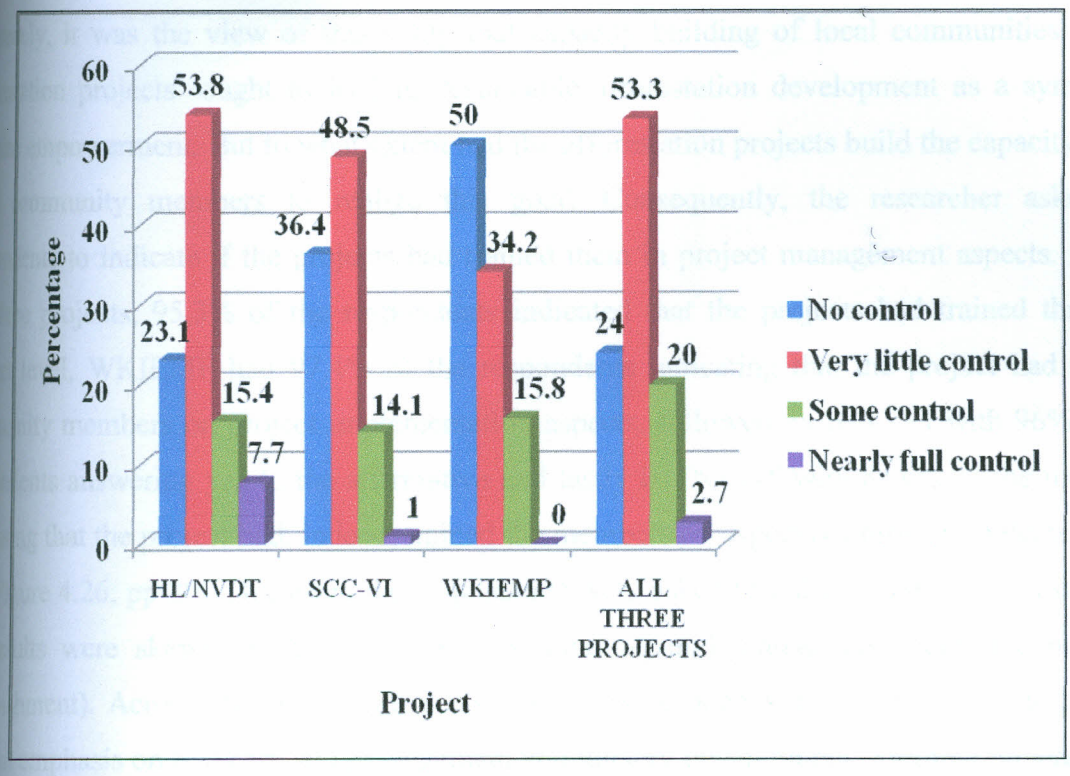

Figure 4.37: Degree of respondent's control over decisions, which affect the project

at the people felt they had little control over activities of the projects means that they were not, obably, involved in identification and design/planning of the projects.

43 Capacity-Building of Community Members

apacity building is also one of the building blocks of sustainable development. When people e equipped with skills they, are not only better informed about their environment but are also, mpowered to contribute positively to development initiatives. The assumption here is that rning creates room for inquisitiveness, tolerance and creativity. Local capacity building is pposed to promote self-reliance, empowerment and ownership of development initiatives. ncerning capacity building, the basic interest of the study was to evaluate the role of the ojects in enhancing capacity amongst the local communities to take charge of afforestation velopment beyond project phase-out. There was need to investigate the extent to which the ojects had prepared the local communities in terms of acquisition of knowledge and, therefore, mpowerment of the beneficiaries.

mately, it was the view of this study that capacity building of local communities by the restation projects' ought to lead to sustainable afforestation development as a symbol of mine empowerment. But to what extent had the afforestation projects build the capacity of the l community members to realize this goal? Consequently, the researcher asked the pondents to indicate if the projects had trained them in project management aspects. Across three projects, 95.3% of the respondents indicated that the projects had trained them. At ject level, WKIEMP had 97.4% of the respondents indicating that the project had trained mmunity members on project implementation aspects, followed by SCC-VI with 96% of the pondents answering yes to the affirmative and lastly HL/NVDT with 84.6% of the members icating that the project had, indeed, trained the members on aspects of project implementation e Figure 4.26, pp 80). But when the respondents were asked to indicate the topics of training, results were skewed to two aspects (tree planting and management and tree nurseries blishment). Across the three projects, 64.7% of the respondents d put emphasis on tree care and management and nursery development. Training on leadership lls and group dynamics scored quite dismally across all the projects yet this is the core of any mmunity based sustainable development initiative. Thus, only 2.7% of the respondents icated that the projects had carried out trainings on leadership skills and group dynamics (see ure 4.27, pp81). At individual project level, the three projects had very low responses on this ject and, most, affected was HL/NVDT, which scored a straight zero on the item. Interviews h project management of the projects also indicated that the trainings were mainly carried out tree care and management.

e researcher went a step further to establish how the trainings were carried out. The intention e was to find out whether there was room for dialogue, consultation and/or negotiation tween the project management and beneficiaries on implementation of project activities. ross the three projects, 56.7% of the respondents indicated that the major method of training s through demonstration. Only HL/NVDT had 38.5% of the respondents indicating that the inings were carried out through discussion (Figure 4.38).

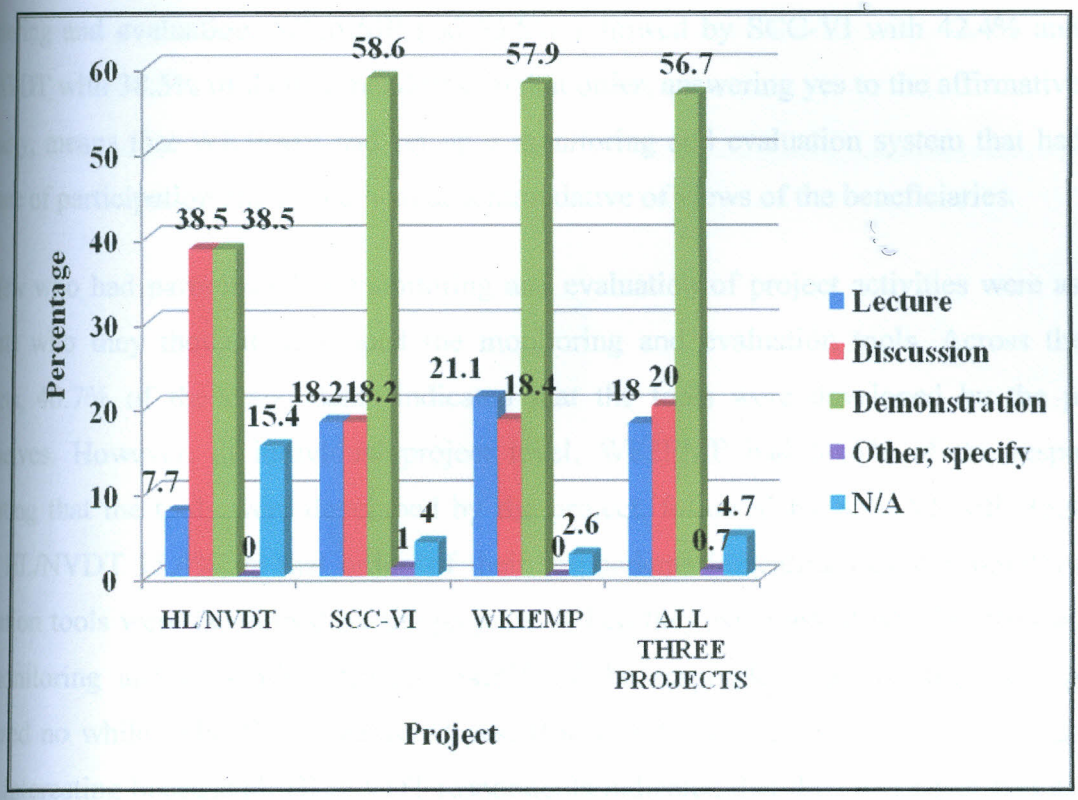

Figure 4.38: How trainings are conducted

4.4 Participatory Monitoring and Evaluation

rticipatory monitoring and evaluation is one of the indicators of project sustainability because th project management and beneficiaries are assumed to be transparent and accountable. lose, regular and participatory monitoring, not only allows project teams to adapt to project rategies but also, provides directions for project management to make decisions regarding man, financial and material resources hence, building project sustainability. In response to the estion about the extent to which the projects had involved members of the local communities monitoring and evaluation, 52% of the respondents across the three projects indicated that ey had never been involved in monitoring and evaluation of project activities. However, dividual project level analysis revealed that HL/NVDT had 61.5% of the respondents dicating that they had never been involved in monitoring and evaluation of project activities. his was followed by SCC-VI with 57.6% and lastly WKIEMP with 34.2% of their respondents, spectively, indicating that they had never participated in monitoring and evaluation of project tivities (see Figure 4.28, pp82). But among those who said that they had been involved in

nitoring and evaluation, WKIEMP had 65.8% followed by SCC-VI with 42.4% and lastly NVDT with 38.5% of their respondents, in that order, answering yes to the affirmative. This, bably, means that WKIEMP had set up a monitoring and evaluation system that had some sure of participation and hence, was accommodative of views of the beneficiaries.

e few who had participated in monitoring and evaluation of project activities were asked to icate who they thought developed the monitoring and evaluation tools. Across the three jects, 40.7% of the respondents indicated that the tools were developed by the projects mselves. However, at individual project level, WKIEMP had 60.5% of the respondents icating that the tools were developed by the project, followed by SCC-VI with 36.4% and ly HL/NVDT 15.4%, in that order, of their respondents indicating that the monitoring and luation tools were developed by the projects. When they were asked whether they accessed monitoring and evaluation reports, 64.8% of the respondents across the three projects wered no while only 27.7% answered yes. But at individual project level, the results were er interesting because all HL/NVDT respondents indicated that they had never had access to monitoring and evaluation reports, followed by WKIEMP with 76.3%. SCC-VI had 18% of respondents answering no.

4.5 Collaboration and Partnership

l on the issue of finding out whether the projects had put in place mechanisms for tainability, there was need to establish whether the projects held collaborative/partnership keholder forums. Collaboration between agencies, normally, helps stakeholders to spell out arly the role of each partner so as to avoid duplication of effort and misallocation of resources. is also ensures continuity of planned activities because if one partner pulls out, the others are e to continue. When asked to indicate whether the projects held stakeholder forum meetings, 3% of the respondents across the three projects answered no. According to project level alysis, 76.3% of WKIEMP respondents indicated that the project never held stakeholder forum etings, followed by SCC-VI with 44.4% and HL/NVDT with 30.8% of their respondents, in order, indicating that the projects never held stakeholder forums. But of those who indicated the projects held stakeholder forums, HL/NVDT had 69.2% of the respondents saying yes, owed by SCC-VI with 55.6% and lastly WKIEMP with 23.7% in that order (Figure 4.39).

views with project management of the three projects indicated that they rarely convened holder forum meetings as corroborated with the respondents.

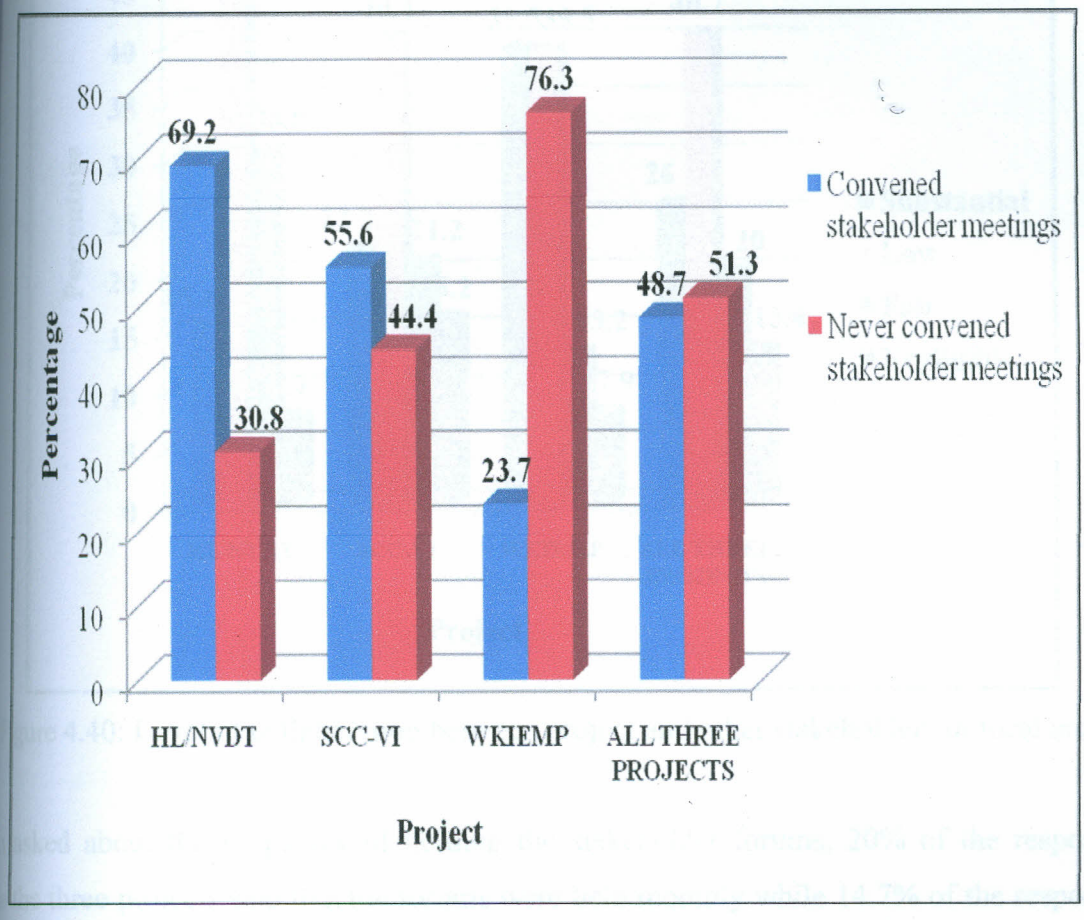

Figure 4.39: Holding of stakeholder forum meetings

respondents were further asked to indicate what they thought was the level of collaboration partnership between the afforestation projects and other afforestation stakeholders. Across three projects, 40.7% of the respondents indicated that collaboration and partnership between projects was low. At individual project level, 46.2% of HL/NVDT respondents felt that the el of collaboration and partnership between the projects was low, followed by SCC-VI with 4% and WKIEMP with 39.5% of their respondents, in that order, indicating that the level of laboration and partnership was low (Figure 4.40).

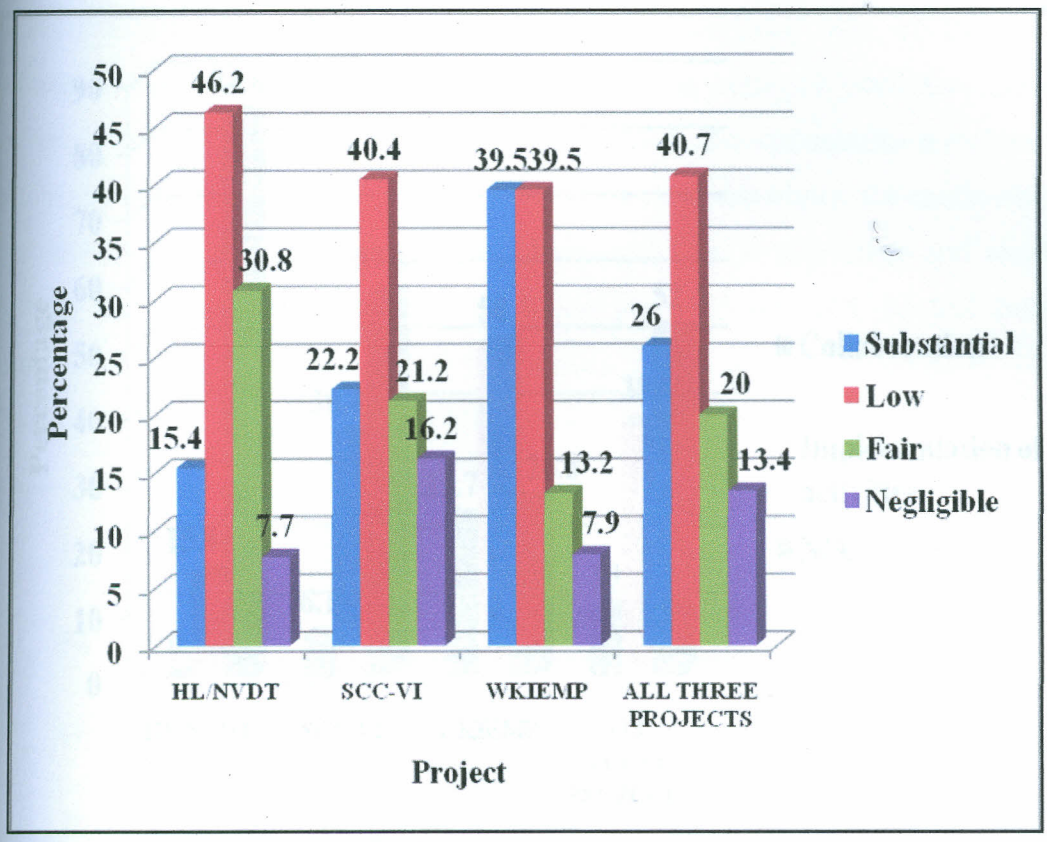

Figure 4.40: Level of collaboration between project and other stakeholders in focal area

hen asked about the frequency of holding the stakeholder forums, 20% of the respondents ross the three projects said that the forums were held monthly while 14.7% of the respondents id that they were held quarterly. And for those attending the forum meetings they were asked indicate what was, normally, discussed in the meetings. The intention was to find out the rection of implementation of the project's activities in terms of joint learning, priority and cus. The respondents who attended the forum meetings indicated that the major topic of scussion in the forum meetings was implementation of afforestation activities. This was entioned by 36% of the respondents across all the three projects. Only 10% of the respondents dicated that the stakeholders discussed about collaboration and partnership (Figure 4.41).

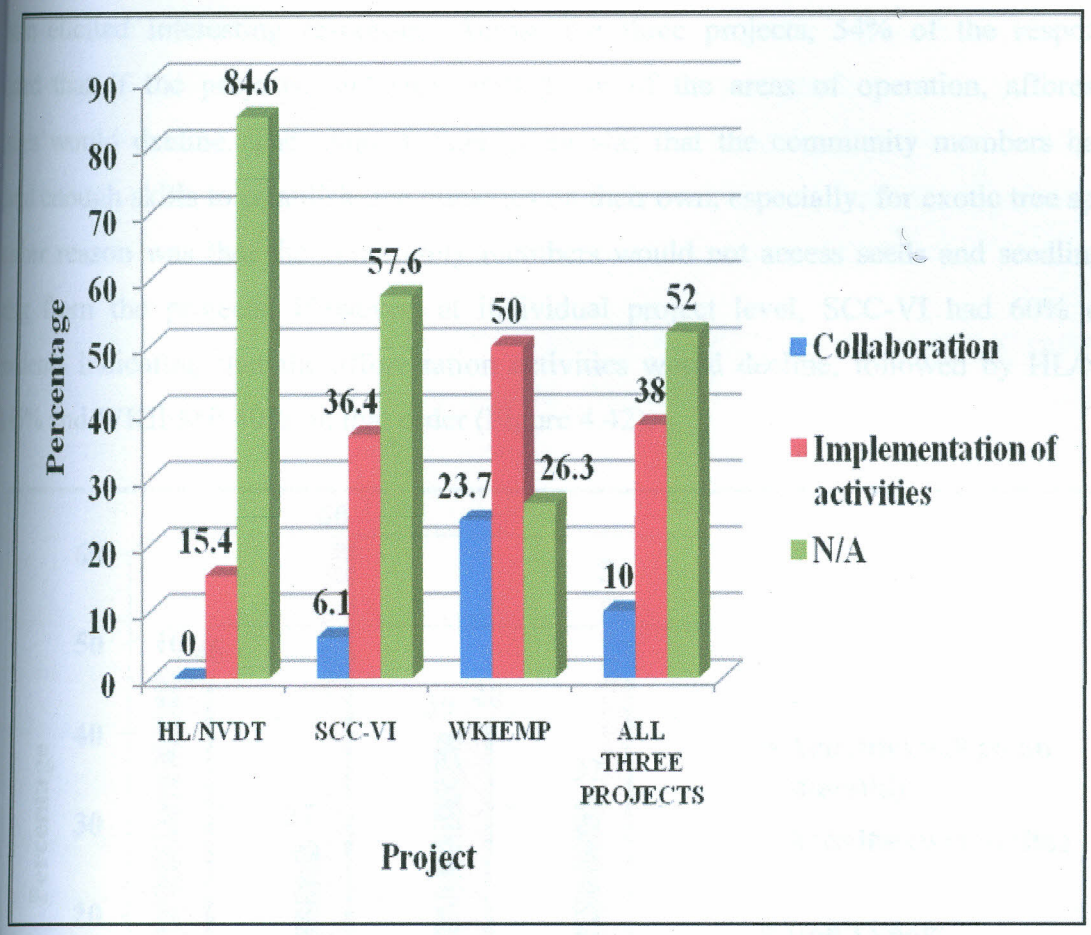

Figure 4.41: Issues normally discussed in the fora meetings

at the projects did not hold stakeholder forum meetings means that the projects, despite rking in the same river basin were, probably, duplicating efforts and resources. WKIEMP and C-VI, for instance are focusing their activities at Katuk-Odeyo area of lower Nyando. Thus, ring the Focus Group Discussions in the study sites, it became apparent that the projects were sically promoting tree planting as the main activity in Katuk-Odeyo area. Failure to hold um meetings implies that the projects were not able to share skills and new technologies d/or exchange views and experiences between them regarding project implementation through nsultations.

an overall investigation to find out whether the afforestation projects had put in place echanisms for sustainability of afforestation activities, the researcher asked the respondents hat they thought would happen if the projects, suddenly, pulled out of the focal areas. This

stion elicited interesting responses. Across the three projects, 54% of the respondents icated that if the projects, suddenly, pulled out of the areas of operation, afforestation ivities would decline. The major reason given was that the community members had not uired enough skills to establish tree nurseries on their own, especially, for exotic tree species. other reason was that the community members would not access seeds and seedlings for ting from the projects. However, at individual project level, SCC-VI had 60% of the pondents indicating that the afforestation activities would decline, followed by HL/NVDT h 45% and WKIEMP 40%, in that order (Figure 4.42).

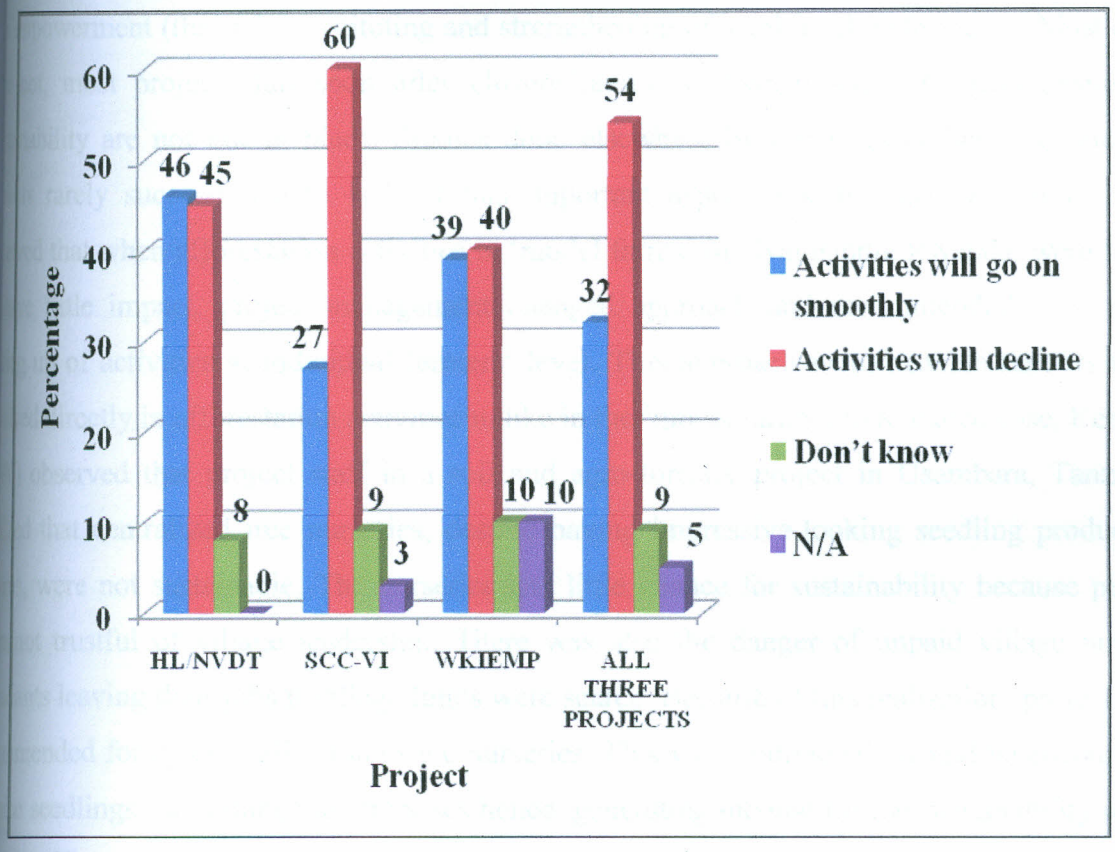

Figure 4.42: Respondents' opinion on what would happen if the projects pulled out of their areas

at a high number of respondents felt that afforestation activities would decline if the projects ddenly pulled out of their areas implies that the projects had not, adequately, prepared the mmunity members for sustainability of project activities and/or that the community members re still, largely, dependent on the projects for inputs such as seeds and seedlings and even m tools (see Figure 4.32, pp108 for results on project support to the community). The results

w that the projects depended on the projects for materials (including seeds and small farm lements). Such dependency is not good for sustainability because it means that once the ject phases out, the community would not sustain project activities. What is needed are long- ing mechanisms that would ensure sustainability of activities e.g. cost-sharing ventures on nursery establishment as one way of generating income to the households.

above findings point to inadequate mechanisms by the afforestation projects to ensure that afforestation activities became sustainable. Mechanisms for sustainability should, of essity, incorporate project ownership (through capacity building and community contribution) empowerment (through constituting and strengthening of local level institutions). Most often not, most projects fail soon after closure/handover if/when adequate mechanisms for tainability are not put in place. Studies done elsewhere by other researchers indicate that jects rarely succeed due to lack of this important aspect. For instance, Kerkhof (1990) erved that when afforestation activities in 'model farms' in Nyabisindu, Rwanda, were found have little impact, project management changed approach and recommended widespread ling up of activities at individual farmers' level. This approach would enable farmers to be olved directly in afforestation activities unlike in the 'model farms'. In a related case, Kerkhof 90) observed that project staff in a soil and agro-forestry project in Usambara, Tanzania, lized that centralized tree nurseries, despite having impressive-looking seedling production ures, were not sustainable. The nurseries had little chance for sustainability because people e not trustful of village leadership. There was also the danger of unpaid village nursery ndants leaving their jobs if village funds were scarce. Because of this realization, project staff ommended for de-centralization of the nurseries. This way, individuals would be encouraged aise seedlings for commercial purposes hence, generating income for the sustainability of the series. Through focus group discussion in Kapchebwai in Upper Nyando, the current study erved that HL/NVDT encouraged farmers to raise seedlings for commercial purposes as a y of building sustainability. But the focus group discussion in Jimo East in Lower Nyando did reveal this, meaning that SCC-VI and WKIEMP were doing poorly on this aspect.

a rural afforestation project in Zimbabwe, when management realized in the first phase that project was not achieving intended outputs because of emphasis on central tree nurseries, y changed approach to individual and communal nurseries and also shifted emphasis from

alyptus spp. tree seedlings production to indigenous and fruit trees production (Kerkhof, 90). Kerkhof (1990) also noted that an erosion control and afforestation project in Gursum, hiopia, failed because of three reasons. Firstly, not only were the tree nurseries categorized o fruit trees, coffee seedlings and forestry seedlings, but were also scattered making it difficult r people to access seedlings. Secondly, the Ministry of Agriculture staff, rather than couraging local initiative, provoked resistance by trying to force the villagers to create rseries. Thirdly, the villagers did not see the reason for setting up their own nurseries when ey could get most of the seedlings free of charge from central nurseries. These disappointing sults forced project management to explore other options such as providing farmers with the ans to grow more valuable seedlings such as coffee and fruit trees and also by letting the rseries become the responsibility of an interested group in the village rather than the whole mmunity.

shown in the results above, the local communities, largely, depended on the projects for pport. The results indicated that 32% of the respondents across the three projects owned group e nurseries. WKIEMP project alone had 36.8% of the respondents indicating that they owned oup tree nurseries. The approach of central tree nurseries is not sustainable as Kerkhof (1990) gues and the researcher strongly agrees that author's argument. Central tree nurseries, usually, ract management problems due to high expectations from beneficiaries and collapse sooner er being established. Elsewhere, Kerkhof (1990) observes that the following projects were ccessful and had proved sustainable: PAFSAT (Promotion of Adapted Farming System based n Animal Traction) in Cameroon where change of approach in farm trials from non-rticipation of farmer to active farmer participation led to successful adoption of technology by her farmers and Nyabisindu Agroforestry Project in Rwanda where approach from involving fugees to involving local communities led to large scale adoption of technology. Kerkhof 990) recommended that long-term interventions such as afforestation should not be targeted at ghly mobile and unpredictable populations but should involve long-term inhabitants. However, erkhof's (1990) recommendedation is not applicable to River Nyando basin where the opulation is not mobile due to conflicts as in Rwanda. Meanwhile, Manikutty (1998), writing n community participation in water and sanitation projects in India observed that in Kerala state here community members constituted democratic and strong committees and contributed sources, the water and sanitation projects were successful. Manikutty (1998) observed that if

nature of participation is not planned early in the project, it could lead to fragmentation of rt and create a serious problem in integration of the activities implemented at different es.

Testing of hypothesis on mechanisms for the sustainability of afforestation activities

s study had hypothesized that the afforestation projects in River Nyando had failed to put in e mechanisms for the sustainability of afforestation activities. In order to test this hypothesis, researcher had formulated a sustainability scorecard on different sustainability attributes ble 10).

Table 4.10: Criteria – scorecard (key) for testing of hypothesis three

Mechanism for Sustainability	Score
Very high mechanisms for sustainability	80% - 100%
High mechanisms for sustainability	65% - 79%
Average mechanisms for sustainability	50% - 64%
Low mechanisms for sustainability	21% - 49%
Very low mechanisms for sustainability	10% - 20%
Non-existent mechanisms for sustainability	1% - 9%

Adopted from Nampila T. (2005)

scorecard has been used to test the hypothesis as shown below. From the result obtained e 4.11, it can be concluded that the afforestation projects had not put in place mechanisms ustainability of afforestation activities. The hypothesis that the afforestation projects had d to put in place mechanisms for sustainability of afforestation activities could, therefore, e rejected.

Table 4.11: Testing of hypothesis

Mechanism for Sustainability Attribute	Yes 100%	No 100%	Conclusion
Project support to the community	98.3	1.7	Very low mechanism for sustainability
Community's level of control over project activities	22.7	77.3	Low mechanism for sustainability
Capacity-building on leadership skills	2.7	97.3	Very low mechanism for sustainability
Community participation in development of monitoring and evaluation skills	2	98	Very low mechanism for sustainability
Holding of stakeholder forums	48.7	51.3	Low mechanism for sustainability
Level of collaboration between stakeholders	26	74	Low mechanism for sustainability
Average	**33.4**	**66.6**	**Low mechanisms for sustainability**

ce: Field Data, 2007

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1 Community Participation in the Project Cycle of Afforestation Projects

results from the study have shown that community participation across the three restation projects was neither consistent nor uniform throughout the stages of the project le. It has been shown that community participation, particularly, in project identification, ning and monitoring and evaluation was low. Based on these findings, it can be concluded community participation in the various stages of the project cycle of the afforestation jects was low and, therefore, the hypothesis set by the researcher that the three afforestation jects had not involved local communities in the various stages of the project cycle could not ejected.

2 Factors Determining Community Participation in Afforestation Projects

factors affecting local communities' participation in the afforestation projects, it was served that there was a strong positive relationship between participation of respondents in the restation projects and the benefits they obtained from the afforestation projects. It was also blished that there was a positive relationship between environmental degradation and mmunity participation in the afforestation projects. However, the relationship between the two iables was rather weak meaning that there were other reasons for participation e.g. planting es for income generation and fuelwood production. The study results indicated that cultural oos did not determine local communities' participation in the afforestation projects. It was cluded that community participation had, largely, been determined by the benefits the mmunity obtained from the afforestation projects than other factors and, therefore, the pothesis set earlier by the researcher that local communities' participation in afforestation ojects' activities in River Nyando basin was not determined by the benefits the community tained from the afforestation projects was rejected.

3 Mechanisms for Sustainability of Afforestation Activities

was also observed that the projects had not put in place mechanisms for the sustainability of forestation activities. Results from FGDs, Key informant interviews and questionnaire ministration indicated that the projects had not put in place adequate mechanisms for the tainability of afforestation activities. Issue like capacity building and group dynamics which essential mechanisms for sustainability were poorly addressed. Therefore, the hypothesis set the researcher that the afforestation projects in River Nyando basin had failed to put in place ject mechanisms for sustainability/continuation of activities could not be rejected.

2 Recommendations

2.1 Community Participation in the Project Cycle of Afforestation Projects

is the recommendation of this study that afforestation projects should, actively, involve mbers of the local community in project identification i.e. development of project proposals, eds assessment and site selection. The afforestation projects should also involve beneficiaries project planning so as to ensure responsibility and ownership. Further, when afforestation jects are planned, community capacity-building should form an important component to be ilitated by trained and experienced community development workers. The projects should also volve beneficiaries in the design of monitoring and evaluation systems so as to create a sense ownership and also instill virtues of accountability, transparency and sustainability.

2.2 Factors determining Community Participation in Afforestation Projects

e results indicated that the major factor determining community participation was the benefits at the community members obtained from participating in the afforestation projects such seeds, edlings and farm tools. In the event that these benefits are not forthcoming, the beneficiaries uld not effectively participate in afforestation activities, leading to project un-sustainability. is study, therefore, recommends that the afforestation projects should consider involving local mmunities in 'a cost-sharing' type of ventures during afforestation project implementation. hen community members contribute resources, not only will they own the projects but also be sponsible and accountable.

Mechanisms for Sustainability of Afforestation Activities

study recommends that the projects initiate and strengthen collaboration and partnership ween themselves and other stakeholders with a view to minimizing duplication of effort and urces. This would help stakeholders to spell out clearly the role of each agency in an effort to ly diagnose and address community problems appropriately. It is not rational for two or projects, with similar objectives, to work in the same area without knowing what each is doing. The best approach would be to pool resources together, diagnose community blems jointly and focus effort on mutually identified and agreed targets. The projects should build capacity of beneficiaries on leadership skills and group dynamics. This would forestall ntualities of conflicts in project management at the local level. The study also recommends the afforestation projects should establish participatory and democratically elected focal area mittees for the day to day management of project activities. Participatory and democratically ted committees would forestall situations of acrimony and discord that may be a threat to ject sustainability.

Integrated Approach to Development

ereas it has been shown that the projects were implementing afforestation activities, the Ds findings from the study areas indicated that there were other pressing issues, which needed mediate attention. Problem analysis in Upper Nyando revealed that adult illiteracy, inadequate ter, inadequate forest products, poor infrastructure and human diseases were the major blems facing the community. In Lower Nyando, problem analysis indicated that human eases, lack of income generating activities, poverty, low crop yields, and inadequate water re the major problems facing the community. It is, therefore, the recommendation of this dy that when projects are being designed, they should strive to involve other sectors of velopment through the Sustainable Livelihoods Approach (SLA). This multi-sectoral approach uld be entered through clearly defined Memorandum of Understanding (MOU) so as to avoid plication of effort and resources on one hand, and to focus energies on peoples' priority blems on the other. It would be meaningless, for instance, to focus efforts on an aspect, which y not be seen by beneficiaries as priority.

Area for Further Research

the results have indicated that it is, usually, males who made decisions on tree planting in household compared to females but attended project activities the least compared to females, is need to carry out a study on **'Gender Dynamics in Afforestation Development in the Nyando basin'** to investigate the reasons for this occurrence and its impacts on estation projects implementation in the basin.

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