# Scaling up participatory agroforestry extension in Kenya:

## from pilot projects to extension policy

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### Current trends in extension and expected components of extension approaches

In the past, public-sector agricultural extension and research services in developing countries played a vital role in promoting technological innovation in agriculture. However, changes in the structure of the public sector, the context in which it operates, and the likely nature of future technological innovation raise questions about whether these institutions will be able to meet the challenge of the continued need to increase agricultural productivity. Over the last decade or so, therefore, several attempts have been made to establish agricultural services that are responsive to resource-poor farmers. In most of these experimental programmes, farmers, rather than professional extensionists or researchers, have acted as the principal agents of change (Scarborough 1996; Farrington 1998). In the current context of market liberalisation and deregulation, small farmers are initiating and implementing significant adaptation strategies, which include diversifying to new market niches, contracting agriculture with agro-industries, and forming local collective organisations for marketing and post-harvest activities, as well as engaging in more off-farm employment (Berdeque 1998; Ellis 1999).

This paper shares the experiences of implementing a natural resource extension programme, highlighting three innovative components of an extension project on managing natural resources. The programme was run in Kenya from 1990 to 1998 by the Kenyan government and the Finnish International Development Agency (FINNIDA). It comprised three components, namely:

- assessment of the impact of conventional service delivery;
- development of participatory extension methods, such as local planning;

- incorporation of the experiences of pilot participatory extension projects into national extension policy (scaling up).

Both governments and NGOs provide research and extension services. The increased interaction between farmers and these providers is described as follows:

- *pluralistic* – incorporating service providers from the private sector, churches, NGOs, community-based organisations (CBOs), and conventional service providers;
- *integrated* – addressing production issues on the farm in an integrated cross-sectoral manner that responds more closely to farmers' own perceptions of on-farm interactions and decision-making;
- *bottom-up* – participatory, farmer-led, gender-aware, and empowering; in other words, farmers plan, design, and lead the extension process, and efforts are made in extension planning to be as representative as possible of the various social institutions in a community.

Congruently, extension services throughout sub-Saharan Africa (Malawi, Uganda, Zimbabwe, to name but three countries) are going through a period of radical transformation, actively seeking to institutionalise participatory planning processes. The door is open for contributions of practical innovative approaches (for example, Veldhuizen *et al.* 1997) that can be sustained within and spread between communities. However, to facilitate more responsive planning of extension services, we need greater understanding of local processes of institutional, political, and economic change, with which to inform a more judicious selection and application of participatory methods (Mosse 1994).

## The Nakuru and Nyandarua Intensified Forestry Extension Project

The Nakuru and Nyandarua Intensified Forestry Extension Project, or *Miti Mingi Mashambani* (Swahili for 'many trees on farms'), began in October 1990. It was jointly funded by the Kenyan government and FINNIDA[1] and implemented by the Forestry Extension Services Division. The development objective of the project was to sustain the supply of essential tree products and to stabilise and improve the rural environment through general afforestation.

The project was divided into three components: training; logistical support; and improved extension:

- *Training* – this component provided training in agroforestry, extension, and communication skills for forestry extension staff at all levels, from national to village. The project also provided training for staff from collaborating ministries at district and divisional level, chiefs, and subchiefs. This component had the substantive task of developing a team spirit and raising morale among extension officers who regarded the transfer from plantation to extension forestry as a demotion.
- *Logistical support* – this component constructed and established offices, supported a few institutional nurseries, provided transport (motorbikes and bicycles), and supplied germplasm for establishing on-farm nurseries.
- *Improved extension* – this component concentrated on improving and intensifying the existing conventional extension approaches that were being implemented with schools, groups, and contact farmers.

With the school approach, for example, components included roof-water harvesting, establishment of tree nurseries for training, teacher training, parent–teacher association seed stands for the surrounding community, school environment clubs, school open days, woodlot establishment, and installation of improved institutional stoves for better use of fuelwood in boarding schools. Schools are inappropriate venues for the mass production of seedlings because supervision and watering are intermittent, with school holidays falling at crucial times in seedling production. However, school nurseries and agricultural compounds proved excellent venues for community-focused training and method demonstrations (Niemi 1995).

The improved extension component of the project was also mandated to pilot new extension methods and approaches that would improve the effectiveness, impact, and relevance of extension. At the beginning of the project in the early 1990s, the 'Training and Visit' system, though largely discredited (Antholt 1994; World Bank 1994; Carney 1998), continued to predominate as the extension approach in Kenya. The new methods being piloted sought to develop approaches of integration and participation. These represented the earliest attempts the Forestry Extension Division made to address these issues and seek operational ways to include them in their extension programmes. The issues raised in implementing these new approaches contributed significantly to the discussions of the role of forestry extension services

in the broader context of providing agricultural extension services in the country. The two methods piloted were farmer-designed trials (Franzel *et al.* 1996) and local planning.

## Enhanced implementation of conventional service delivery

Two methods were used towards the end of the project to measure the effectiveness of earlier agroforestry extension activities.

An assessment of the effectiveness of the conventional extension channels – contact farmers, schools, and groups – was conducted in 1995; it covered 216 farming households selected in a two-stage sampling process. The contact points were classified into three agro-ecological zones, and households were selected in four directions at a distance of up to 2 km from the contact points. The participatory component of the survey used focus-group discussion with participating and non-participating farmers to better understand the dynamics at contact points. The results showed that schools were the most effective mechanism for outreach in Nakuru (reflecting the heavy investment in this channel as an extension medium in Nakuru District), while in Nyandarua, groups were the most effective channel. In both districts, contact farmers were the weakest and least effective channel.

A second method used for assessing impact was on-farm surveys of woody biomass. Surveys based on aerial photographs were conducted in 1993 and 1998 to assess changes in farm woody biomass resulting from project interventions. In an intensive aerial survey made in 1993, the sampling unit of the inventory was the farm, and some of the sampled farms were visited in 1993 and again in 1998. The data collected covered planting niches, tree species, origin of germplasm, trunk diameter, and projected end-use. Between 1993 and 1998, the useable volume of wood per farm in the project area rose from 7.5 to 17.07 $m^3$. This latter exceeded by 12 per cent the calculated annual requirement per household of 15 $m^3$, made from the project's socio-economic survey in 1991 (Holding and Kareko 1997; Hoyhta *et al.* 1998; Njuguna *et al.* 2000). However, reliable interpretation of results from such a survey can be made only if contextual information is available such as settlement patterns, land tenure, germplasm availability, and tree use. In the two phases of the project, several socio-economic and marketing studies were conducted to obtain this contextual information. These provided in-depth analysis of farmers'

decision making and complemented the findings of the survey. In this case, data from the woody biomass survey analysed in conjunction with other project data demonstrated that the development objective of the project had been achieved.

*What were the elements of success?*

Several interrelated factors contributed to the achievement of the project's objectives:

- The project area was a settlement area, largely devoid of trees. Farmers settling in the area were keen to indicate the boundaries of their farms, establish privacy, and protect their houses from the strong winds.
- During the 1980s, in an effort to curb the felling of indigenous trees as agricultural areas expanded, a tree-felling permit was introduced. This permit was interpreted by the administration to apply to all trees on farmland. The process in time and money required to obtain this permit often exceeded the value of the trees to be felled. This was a considerable disincentive to tree planting. The project actively sought to have the provincial administration, which was the enforcement agent, declare the tree-felling permit redundant in the project districts, and it succeeded in doing so.
- The project facilitated the supply of germplasm. Initially it went directly to farmers; later it was supplied through community and farmer seed stands. The project also incorporated training in seed production, distribution, and handling.
- Training for all stakeholders – farmers, extension staff, administration, policy makers – was regular and frequent.
- Extension access was reinforced, as the programme worked through contact farmers, groups, and schools. In this way it reached and interacted with each member of a household: men, women, and children. This reinforcement of access had considerable impact on the willingness of households to experiment with agroforestry.
- Training and message reinforcement led to a change of attitude among staff and farmers. Staff had previously been sceptical about the roles of extension and agroforestry. Farmers had previously assumed that the 'government will provide'. Crucial to the success of the programme was the raising of morale in the extension service and the fact that farmers were empowered to test and develop agroforestry interventions.

- Extension approaches and agroforestry technologies were selected to match the specific site requirements and socio-economic context of the communities. For example, in Nakuru, as the farms were small and located near markets, high-value trees were in demand and the project supplied them at cost. As the farms were small, trees with fuelwood as a by-product had to be compatible with crops – hence there was a high demand for *Grevillea robusta*. In Nyandarua, where the farms were larger and the climate colder, there was a demand for eucalyptus for woodlots and windbreaks. For timber production, *Cupressus lusitanica* was popular. In every district, soils, altitude, and climate affected choice of species and technology. Between farms there was also variation pertaining to external remittances and life-cycle trends, affecting both potential for investment and cash needs. Thus blanket recommendations were not encouraged; the extension service instead offered a range of tree species and technology components from which farmers could select and adapt to suit their particular needs and situations.

## Piloting participatory extension approaches

### *Experience with local-level planning*

Local-level planning (LLP) used participatory rural appraisal (PRA), a tool regularly used in the extension services and NGOs in Kenya, but LLP went further in implementing, monitoring, and evaluating with the community. Pilot activities conducted under the auspices of the Nakuru and Nyandarua Intensified Forestry Extension Project tried out extension methods in which farmers remained the central figures during planning, implementation, and monitoring of their development activities.

Local-level planning was conducted as a pilot project in two administrative locations of Nyandarua District – Subego in Ndaragwa Division and Weru in Ol Joro Orok. During this time, the Ministry of Agriculture's 'catchment approach' in soil and water conservation was being implemented, which used participatory rural appraisal (PRA). Participatory approaches were also being piloted by NGOs and in donor-financed projects. These participatory and integrated extension services were being piloted as an alternative to the failing 'Training and Visit' system.

The LLP activities started with forming multi-agency divisional extension coordination committees in the two locations, and training them in participatory methodologies. This training was followed by

open village meetings (or *barazas*) during which presentations of the forthcoming process were made, and farmers were requested to select villages for focused group discussions in agroforestry assessment surveys, which would be based on PRA principles. These surveys were guided by a checklist focusing on the natural resources sector (Tengnäs 1992) in order to ensure a focus on issues within the project's mandate.

A community action plan was developed, and the various ministries committed themselves to activities to be implemented through a memorandum of understanding. Monitoring and evaluation of the activities with the community took place in an open *baraza* in Subego and in a meeting with village elders (community representatives) in Weru. In the meeting between technical officers and elders, it was possible to set priorities on issues jointly and allocate available funds to activities in a transparent manner.

Activities requiring inputs from outside the location were financed on a cost-sharing basis with the farmers. In constructing water jars, for example, the project worked through women's groups. Each group wished to build a water jar for each member's compound. This was initiated by monthly contributions from each member to build up the group capital. The project provided the materials not available locally – cement and chicken wire – and the group provided sand, ballast, and labour. Thus the cost of each jar (US$30) was shared roughly equally. In the first year of activity, despite a jointly planned estimate of five water jars, 22 were constructed.

Community training relating to identified activities formed a major component of the community action plans. Activity monitoring was conducted through quarterly meetings – again, in *barazas* in Subego and meetings with village elders in Weru.

### *Key observations*

The observations cited should be viewed in the context of the dominant extension paradigm at that time. Participatory extension approaches had not been institutionalised in the early 1990s. Listed below are findings learned in implementing this pilot activity:

- When farmers lead in the extension process, implementing and monitoring any jointly developed work plan is more straightforward and resources are distributed transparently.
- Farmers are empowered to participate in joint planning, and their knowledge becomes an invaluable contribution to the planning.

- Disciplines and agencies working in an area where decentralised planning is practised need to collaborate in providing services, since the capacity of each is unique.
- Technical officers realise that it is professionally more rewarding to plan activities with the community rather than conduct 'awareness creation' activities designed to persuade farmers to carry out centrally identified activities.

### *Lessons learned and recommendations*

The approach was found to require refinement if it was to become truly participatory, empowering farmers and responding to their needs. These refinements respond directly to difficulties encountered during implementation. Some issues requiring attention are as follows:

- Community feedback should be through village elders and leaders of organised social groups rather than through *barazas* (open public meetings). The latter tend to have a number of drawbacks: inconsistent attendance; lack of specifics, which are not possible in a large meeting; inability to allocate and follow up responsibilities in a large forum; a tendency to attract the less active and under-employed members of the community – hence, those attending *barazas* may not be the most responsible or active persons in the community. Community representation, through genuine elders or group leaders, is instrumental in planning, budgeting, and implementing community development programmes and in monitoring activities and resources. Consideration of gender is imperative in such representation.
- Two key factors caused logistical difficulties in implementing the pilot:
  1 Funding for all participating line ministries was channelled through one government department. The 1995 LLP review suggested that for effectiveness and for the participating ministries to have a sense of full involvement in the planned activities, funds should not be distributed in this manner (Holding *et al.* 1995). If funds were channelled to a district project head, clearly specifying activities and the roles of the various players, this problem would pose fewer challenges. However, all channelling must be complemented by an efficient disbursement and accounting system.

2 As planning did not effectively take into account the already existing commitments of field officers to plans of their line ministries, conflicts of responsibility occurred. Thus, the timing of the joint consultative forum with the various ministries becomes crucial for the harmony of the joint plan with the wider sectoral and national plans of the participating line ministries.

- Technology needs to be developed and trials conducted on representative farms, so that a larger number of farmers are able to observe the relevance and transferability of innovations to their own situation.
- Regular production and timely distribution of reports and minutes of meetings are necessary to maintain involvement of all stakeholders.
- A memorandum of understanding, backed up with a jointly developed work plan, is vital so that all stakeholders are aware of what their roles are and are committed to the process.
- Lack of technical knowledge on particular aspects of the work plan, such as the marketing of farm produce and access to credit, in which extension agencies are generally weak, should be recognised in the early stages, and necessary assistance sought from outside to address them.
- As funding of extension services declines, the responsibility for planning and seeking services and conducting farmer-to-farmer extension activities between villages falls to the rural population. If a community has experience in planning and budgeting, it is better able to take up these challenges.

In summary, LLP was an early attempt to pilot an integrated and participatory extension methodology under the auspices of the Forestry Department. Despite the logistical difficulties indicated, the pilot activity noticeably succeeded in facilitating community planning and implementing a range of natural resource management activities. The communities of Subego and Weru continue their development activities, mobilising their own resources and engaging the services they require. If the pilot is well managed and implemented, the communities remain with a sustainable development agenda and the means to mobilise resources to implement it. For example, a leading national newspaper recently published a double-page spread on how Weru community had organised itself to build a road through the village.

## Linking pilots to policy

How does one scale up these pilot activities? How does participatory technology development spread horizontally from one community to the next? How does one institutionalise participatory approaches in extension and research and scale them up vertically?

Our experience has shown which factors are crucial in allowing extension methodology pilot projects to reach their potential:

- consultation at all levels (local, district, and national), before, during, and after implementation;
- a jointly prepared work plan committing all stakeholders;
- relevance to the national and regional context and placement within it;
- the broad participation of a wide range of agencies in implementation;
- a broad ownership of the process, and willingness to allow other partner agencies to develop and adapt the methodology;
- adaptability in the face of a changing policy environment and resulting circumstances and needs of farmers; for example, the current trends towards deregulation and liberalisation would require greater attention being made to forming and supporting local economic organisations in pilot areas;
- measured and factual documentation of the methodology and the results;
- sharing of results in a wide range of forums, with stakeholders;
- honesty about the difficulties and lessons learned;
- provision of constructive suggestions on possible ways forward.

Pilots conducted in an institutional context as part of national debate on extension methodologies and approaches do have an influence on national policy. Pilot project findings can be ingrained in policy development by involving policy-making bodies in their conceptualisation and implementation with a view to influencing their attitudes.

The results of LLP were shared with policy makers in the following forums:

- national agroforestry extension workshop at Masinga Dam in 1995;
- field visits of policy makers to project sites;

- agricultural extension policy team mandated to collect and collate farmers' views; visits made to Subego and Weru;
- donor experience of this project and donor representation at policy meetings.

Policy makers exposed to LLP have been involved in developing the programmes described below.

### *Building on local-level initiatives*

In 1995, the Swedish International Development Cooperation Agency (SIDA), within its ongoing programme support to Kenya, decided to explore further the possibilities of developing methodologies and approaches at the local level that aimed to promote interdisciplinary consultation and collaboration. This was to make it possible for local people to take the lead in their development work, using their own ideas and activities. This approach, building on the experiences of LLP, was aimed at institutionalising multi-disciplinarity and complementarity in all aspects of the rural development process, to achieve synergetic impact of interventions by various development bodies. This process was labelled 'local-level initiatives' (LLIs).

The SIDA-funded programmes implemented by the government of Kenya are operating in the sectors of health, water, public works, and agriculture. It is the management committee, drawn from these sectors, that has developed the LLI approach. The LLI concept has been discussed among representatives of these programmes and joint field trips have been undertaken, in which the concept has been discussed extensively with farmers, farmers' interest groups and institutions, NGOs, government officials, the private sector, and other donor-funded programmes. The committee decided to take on the challenge of developing the LLI concept further and put a pilot into operation in a sublocation of Meru District. At the time of writing, the pilot has been going for 18 months.

Although the project is ongoing, lessons emerging so far from the pilot are already playing an important role in policy development as regards SIDA support to the agricultural sector. The local-level initiative process involved policy makers within the partnership in conceptualising and implementing the project with a view to continually influencing their attitudes. An interactive link between the policy makers and those implementing the project in the field is encouraged in testing this concept. Policy makers are involved in participatory monitoring and evaluation activities. All extension

workers involved share in the lessons emerging from the pilot in two annual workshops and quarterly joint field visits to project sites by policy makers and policy implementers.

### *National Agriculture and Livestock Extension Project, Ministry of Agriculture*

Impact analysis of the just-completed National Soil and Water Conservation Programme supported by SIDA has shown that increase in production and productivity has not lifted the population out of the poverty spiral, since the overall income per capita remains less than US$1 per day for the majority of small farmers. Production systems have not adapted to the changing need for a subsistence farmer to move from food security to economic security.

Lessons learned so far from the LLI pilot area indicate that agricultural systems should address the use of higher-value inputs with added value for higher economic outputs. Entrepreneurial farmers who have conserved their land need to be encouraged to diversify their farming systems, incorporating high-value crops. The extension service of the Ministry of Agriculture can help identify long-term markets that small-scale farmers can exploit.

Agroforestry has a contribution to make in meeting these challenges, as demonstrated by the gains that farmers realise through producing such high-value tree crops as fruit, timber, and non-wood products. Multi-purpose trees and shrubs fix nitrogen, control soil erosion, enhance soil fertility, produce fodder that can substitute in a feeding programme for dairy meal (hence saving cash outlay), and perform other on-farm functions.

Emerging needs have been addressed within the framework of the new National Agriculture and Livestock Extension Project (NALEP) (Ministry of Agriculture, Livestock Development and Marketing 1995, 1998, 1999). The experiences of the LLI pilot project were used by the Ministry of Agriculture and Rural Development and SIDA as a basis for formulating the new Swedish support to NALEP under the ongoing agricultural-sector reforms. As the pilot is still underway, it continues to provide NALEP with experience in local-level planning and people's participation. These experiences reflect the wishes of a community in developing a national policy that is aimed at putting in place a pluralistic extension approach. The pilot has shown policy makers that public support is indeed necessary to promote private-sector extension initiatives as well as a strong partnership among the stakeholders.

This new agricultural extension policy will incorporate greater participation in decision making by the various stakeholders in the sector, including farmers, farmer organisations, input suppliers, agro-processors, financial organisations, government, donors, and NGOs. Under the new policy, extension programmes will be based on participatory planning and budgeting with strong emphasis on a bottom-up approach (Nkanata 2000). Forums for beneficiaries and stakeholders will be created for participatory planning and learning. Farmers will be sensitised and trained in legal rights in natural resources management as well as their right to demand transparency and accountability in public extension services.

## Note

1 The implementing consultancy firms were Enso Forest Development Oy Ltd and Widagri Consultants Ltd.

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