Agroforestry for Livelihoods Improvement in the Drylands (ALID) Project
Improving Natural Resource Management in the ASALs of Kenya


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List of Abbreviations and Acronyms

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<th>Abbreviation</th>
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<tr>
<td>ALID</td>
<td>Agroforestry for Livelihoods Improvement</td>
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<tr>
<td>ALIN</td>
<td>Arid Land information Network</td>
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<td>ALRMP</td>
<td>Arid Land Resource Management Programme</td>
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<td>DMO</td>
<td>Drought Management Officer</td>
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<td>FAO</td>
<td>Food and Agricultural Organisation</td>
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<td>FTC</td>
<td>Farmers Training Centre</td>
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<td>ICRAF</td>
<td>International Centre for Research in Agroforestry</td>
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<td>KADI</td>
<td>Kamurugu Agricultural Initiatives (under the Catholic Diocese of Embu)</td>
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<td>KARI</td>
<td>Kenya Agricultural Research Institute</td>
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<td>KENGEN</td>
<td>Kenya Electricity Generating Company</td>
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<td>KVDA</td>
<td>Kerio Valley Development Authority</td>
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<td>KEFRI</td>
<td>Kenya Forestry Research Institute</td>
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<td>MOA</td>
<td>Ministry of Agriculture</td>
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<td>MOALFD</td>
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Executive Summary

ICRAF recruited three temporary staff for three months (April–June 2007) to implement the project activities that had specified deliverables. Arrangements were made for the newly recruited staff to reside in their respective districts for the three months. They were also subjected to an intensive orientation programme, prior to being sent out to the field, to prepare them to undertake the assignments, and enable them to face the field challenges. The orientation involved visits to KEFRI station at Karura where they learnt about utilisation of prosopis, energy conservation. They later visited Kamurugu Agricultural Initiatives (KADI) project in Mbeere District, where they learnt about nursery establishment, tropical fruits production, and honey production. Finally, a meeting was held to discuss ICRAF and Agroforestry for Livelihoods Improvement (ALID) project procedures and the expected deliverables from the team. They were provided with all the necessary working tools, such as laptops, and digital cameras, before they were taken to their respective districts with their personal effects.

The team liaised with their respective Drought Management Officers (DMOs) who are the district project leaders for Arid Land Resource Management Programme (ALRMP). They identified and worked with other relevant stakeholders that included Kenya Forestry Research Institute (KEFRI), Kenya Agricultural Research Institute (KARI), Ministry of Agriculture (MOA), Ministry of Livestock Development and Fisheries (MOLFD), Arid Land information Network (ALIN), several community based organisations (CBOs), and farmer groups.

In the period of three months, the project was able to achieve the following:

a) Recruitment, orientation, and familiarisation of the field staff
b) Educational tour for farmers and extension staff to KEFRI-managed project in Kibwezi to study dryland farming techniques
c) Education tour to KEFRI Station at Karura to study economic uses of prosopis and efficient charcoal burning kilns and energy conservation devices
d) Training of farmers and extension staff on nursery establishment, management and transplanting of seedlings
e) Establishment of school-based fruit tree mother orchards
f) Training of extension staff and farmers on fruit trees grafting, budding, and protection from diseases and pests
g) Training of extension staff and farmers on beekeeping
h) Training in management and of prosopis species
i) Field days and demonstrations
j) Farmer-to-farmer exchange visits

In the process of implementing the project, the field team faced some problems and challenges. The time for the project was just too short for them to accomplish substantial impacts. The staff member based at Tana River got sick, and was forced to return back to Nairobi for specialised medical attention, after one and half months in the field. Therefore, it was not possible to accomplish what was expected in that district. There were high expectations from the local communities that were beyond the project mandate. For instance, they expected the government to
commission mechanical eradication of prosopis on a massive scale, and compensation for economic losses, resulting from the invasion of prosopis.

1. Introduction

Agroforestry for Livelihoods Improvement (ALID) was a project implemented by ICRAF, in collaboration with Arid Land Resource Management Programme (ALRMP) Phase II. The main purpose of the project was to improve the livelihoods of communities affected by the invasive *Prosopis juliflora* species in Baringo, Tana River, and Garissa districts. The focus of the project was to scale up the adoption of dryland farming practices, and economic use of prosopis species. This required building up the capacity of local farmers, and extension staff, to utilise prosopis in several economical ways that met their needs. These included the use of prosopis wood for furniture, fences, and energy, pods for animal feeds, and human recipes. The project helped the communities to initiate energy conservation measures, such as the use of efficient charcoal-making kilns like casamance.

ICRAF engaged three temporary staff members, and these were Ahmed Abdirahman, Jirma Ali Molu, and Joseph Chirchir. Henning Baur, the ICRAF Eastern Africa Regional Programme Coordinator, assisted by Charles Wambugu, the Dissemination & Research Officer, in the region, supervised them. The team was subjected to an intensive orientation exercise, to prepare them with knowledge and skills, for the field tasks and challenges. Ahmed Abdirahman was deployed to Garissa District, Jirma Ali Molu went to Tana River District, and Joseph Chirchir went to Baringo District.

The orientation programme involved a visit to the KEFRI station at Karura, where the team learnt about prosopis products and energy conservation kilns. They later went to Kamurugu Project, where they learnt about nursery establishment, tropical fruits production, honey production and improved bee hives. A meeting was held at ICRAF headquarters to discuss the tasks and expected deliverables from the newly recruited team. Each of them was asked to liaise with Drought Management Officer (DMO), who were the district leaders for ALRMP II project. They were also asked to explore, identify, and consult with other relevant project stakeholders that included KEFRI, KARI, MOA, MOLFD, ALIN, several CBOs, and farmer groups in their respective areas of work.

To mitigate the economic loss, resulting from invasion of prosopis on pasture, and farmlands, the farmers were encouraged to diversify land production systems, and in particular, to incorporate improved dryland farming practices. The project staff conducted training sessions, education tours, and field days, for farmers and the extension staff in the three districts. The aim was to build their technical capacity in managing the prosopis menace, and in diversifying land use systems. Seedlings of quality fruit trees were procured from reputable organisations, within and outside the project districts, for establishment of mother orchards. This will make the local communities to sustainably access quality scion (planting) materials for grafting of fruit trees. Due to recent media reports on prosopis menace, the project staff encouraged discussions on the positive and negative importance of prosopis species.

The project focused on assisting communities affected by the invasion prosopis species. The species had colonised grazing and farmlands, on the landscapes of drier districts of northern
Kenya. The local communities claimed that the species had both positive and negative impacts to their lives. The species is a hard wood that matures quite fast, and is tolerant to harsh environmental conditions, such as drought, and saline soils. It was first introduced into Africa from Latin and Central America, and it reached Kenya in 1973. However, intensive promotion was done in the 1980s, by the Food and Agricultural Organisation (FAO), in collaboration with the Government of Kenya. The most common species in the region was *Prosopis juliflora* that was introduced to combat desertification, curb soil erosion, and to provide products like fuelwood, fodder, food, gum, building, and fencing materials, to communities residing in drier parts of the country. In addition, the species had some medicinal values.

However, prosopis spread rapidly across the arid districts of northern Kenya, turning into a noxious weed that is currently occupying millions of hectares of land. It develops into impenetrable thickets, taking over the pastures, and farmlands. Its negative impacts had become a petty subject for the national and regional media. Some of the problems cited by the local communities, and the media, included the sharp and strong thorns that hurt human beings and livestock; the pods were alleged to disfigure the jaws of goats; and the tree cover suppresses the growth of grasses and other useful plants. The communities alleged that the species had displaced many farmers and pastoral communities, through the formation of impenetrable thickets. The affected areas are predominantly occupied by pastoral communities, whose main source of livelihood is livestock, and any interference with grazing pastures, threatens their very survival.

Interaction with the affected communities revealed that, prosopis has both positive and negative impacts however, it was clear that, the affected communities had not yet realised the full potential uses of the species. Consequently, the project team, in collaboration with KEFRI, KARI, and the extension services, embarked on sensitising and training the affected communities on various economic uses of prosopis. The species produces high value products, such as furniture, charcoal, and carvings from the wood, in addition to human and livestock feeds from the pods.

To exploit the positive impacts of prosopis, a balance needs to be arrived on the level of eradication and conservation of the species in arid and semi-arid areas. Therefore, the project organised awareness creation on how to economically exploit and manage the prosopis thickets without its total eradication. Some of the impacts from these trainings were realised instantly; trained farmers started to manage the prosopis by pruning the thickets leading to positive change of attitude and behaviour by the affected communities. The trainers emphasised that prosopis invasion could be controlled, by putting it into economic use, while controlling its invasive spread. The participants explored the management options, including its physical elimination, and the recently introduced biological method, where its natural insect pest was used.
2. The achievements

(a) Recruitment, orientation, and familiarisation of the field staff

ICRAF organised an orientation programme for the newly recruited temporary staff, with the aim of familiarising them with knowledge and skills required to handle the tasks of implementing the project. This involved meetings, going through the project proposal and reports, visit to the KEFRI station at Karura, to learn about the use of prosopis and energy conservation technologies, and a visit to Kamurugu Agricultural Initiatives (KADI), to learn about dryland farming, and fruit trees production. The visits provided forum for the team to build linkages, and collaboration with the host organisations, for implementation of the project activities.

The team visited the KEFRI station at Karura Forest, to familiarise themselves with technologies that can benefit communities affected by the invasive prosopis species. The team learnt that, prosopis produces high quality timber, and fuel energy, animal feeds, honey, gums, and flour, for human food. Despite the species being invasive, the team learnt that prosopis is one of the rare species that survives in arid environment, owing to its tolerance to drought, and salty soils; it grows fast, fixes Nitrogen from the air, and coppices well. Its wood is hard and durable, and it is an excellent source of fuelwood, and timber. Flowers provide bee forage for honey production, while the pods are highly nutritious, providing livestock and human food. The team viewed furniture, and carvings, made from prosopis, and a variety of scientifically tested energy-saving kilns. It was clear to the team that, the management and control of prosopis could be achieved, through its efficient and economical utilisation.

The visit to Kamurugu Agricultural Initiatives (KADI) in Mbeere District aimed at exposing the newly recruited staff to improved practices of beekeeping, and fruit farming in dry areas, and exploring the possibilities for future sourcing of quality fruit tree seedlings, and scion materials for grafting. KADI
is a grassroots support organisation, of the Catholic Diocese of Embu, and its activities are based at Iriamurai Village, in Mbeere District. Its focus is promotion of agri-business activities in fruits and honey production, processing, and marketing. The organisation produces, and distributes, high quality tree seedlings, such as mangoes, guava, and *Melia volkensii*.

**(b) Educational tour to KEFRI-managed project in Kibwezi**

The educational tour involved farmers and extension staff from the three project districts. The aim of the education visit was, to familiarise the farmers and extension staff on the best practices and innovations of dryland farming, and to identify agroforestry tree species that are suitable for dry areas. Water harvesting techniques were identified to be crucial for plants’ survival in arid and semi-arid areas. The expectation from the project staff was that, in future, the tour participants would demonstrate the knowledge gained, skills, and innovations, to their communities. It was expected that they would adapt the new technologies to fit their own environment. They were also expected to explore alternative tree species that could be used to replace the invasive prosopis. Garissa and Baringo districts conducted their tours within the same dates, whereas Tana River District did it later.

In Baringo, nine farmers and two extension staff were selected, from Marigat and Barwessa divisions, which are the drier parts of the district. The extension staff were from MOA and ALIN project in Marigat Division. Garissa District sent nine farmers from five farms, i.e. Al-Hamdu, Al-Fatah, Salama, Towfiq, Nasib, and Bur-Algi Women Group farms. Two extension officers, from MOA and MOLD, accompanied the farmers. In Tana River, fifteen participants participated in the tour. Unfortunately, the Tana River group had trouble on their way back, after their hired vehicle broke down, and they had to go travel back on buses.

At the KEFRI Station in Kibwezi, the tour participants learnt about seed pre-treatment technologies, tree nursery establishment, and management. Some of the species in the nursery included *Melia volkensii*, *Jatropha curcus*, *Acacia tortilis*, and *Azedarachta indica*. The team visited farmers, and learnt about dryland farming practices. They saw improved water harvesting technologies, applied for the production of fruit trees and vegetables. They visited agroforestry farmers, who had intercropped food crops with *Melia Volkensii* trees. The team visited “Utheu Wa Akâ” Women Group that was managing a commercial vegetable and tree nursery. Some of the species in the nurseries included mangoes, pawpaw, passion, watermelons, banana, and pumpkins. Vegetables, such as okra, chillies, and mangoes, were for export market. The producers are well linked to the Horticultural Crops Development Authority (HCDA) that helped them to identify, and deal with authorised fruit and vegetable exporters. The visitors appreciated the need for crop diversification, as a way of maximising the land use, and coping with unpredictable climatic conditions.
(c) Education tour to KEFRI station at Karura
Farmers from Baringo and Garissa districts visited the KEFRI Station at Karura; however, the farmers from Tana River could not make it, due to the long distance they had to travel back. The purpose for this tour was to expose the participants to methods of economical and efficient use of prosopis. These included efficient charcoal burning kilns, and furniture made from prosopis. The farmers went through various sections that had products of prosopis, such as flour made from prosopis pods, used as both animal feeds (coarse flour), and human food (fine flour). Samples of the prosopis flour had been tested, and revealed that it has more proteins and starch than wheat flour. Other products of prosopis were high quality charcoal, fuelwood, and timber.

The team also learnt about timber treatment processes, and improved beehives. Examples of charcoal burning kilns included portable metal drums, and “Casamance” kilns. The tour guide explained that a Casamance kiln has an energy recovery rate of about 30%, and gives greater yield of charcoal, compared to traditional kilns that have less than 10% recovery rates. Baringo farmers placed orders for four inlet pipes, and the main pipe, for setting up demonstrations of Casamance kilns, as well as samples for fabrication of more pipes, to benefit more people in the district, through demonstrations, and purchase by individual farmers, for their own home use.

In Baringo and Garissa, the Department of Home Economics, under the Ministry of Agriculture, identified individuals to assist in training of farmers, through demonstrations on efficient use of energy. An expert from the KEFRI Station at Karura, with experience in use of efficient kilns, was involved in Farmer Field Schools (FFS) trainings. Other potential income-generating activities based on prosopis, included curio shops, and use of prosopis pods, as source of human food and livestock feeds.

(d) Training on nursery establishment and management
The aim of this training was to help the farmers and extension staff, to raise the quality of tree nurseries, through improved nursery management practices. The training also aimed at providing skills on seed collection, handling, and pre-treatment methods. The training in Baringo was conducted at Soi Community Forum Nursery, in Salawa Division. The nursery belonged to an organised group that produced seedlings for income generation. The facilitators were drawn from KARI Station at Marigat, and Ministry of Agriculture, in Salawa Division. The tree nursery is located near a community dam that was constructed with assistance of UNDP. The group aimed at raising 20,000 seedlings by the end of the year. This was a “hands on training,” with emphasis on appropriate procedures in nursery establishment, and management. Issues on transplanting procedures were also discussed.

In Tana River District, thirty farmers, and two extension officers, participated in two-day training at the District Commissioner’s boardroom. The training was facilitated by staff from KADI. The training also covered the beekeeping aspects. Training in Garissa District was conducted at the Garissa Farmers Training Centre (FTC), and involved thirty farmers, and two extension staff from MOA and MOLFD, at the district level. The participants learnt about the types of nurseries, the factors to consider for nursery location (such as water availability, soil fertility, slope and security), nursery layout, seedbed preparation, etc. The need for appropriate preparation of nursery media (ratios in mixtures of soils and manure), seed handling, and procurement of quality seeds, seed extraction, seed drying, storage and pre-treatment. They also learnt about best practices in nursery operations.
such as watering, spraying, weeding, root pruning, labelling, pest and disease control and transplanting of seedlings.

The farmers were particularly keen on various diseases and pests that affect fruit trees, such as mangoes and citrus, as well as vegetables. They inquired about the most effective agro-chemicals in the market, for controlling diseases and pests that affect fruit trees. The facilitators went into details of application, dosage, stage of applying the chemicals, the safety precautions in handling the chemical, and the equipment. Many farmers were shocked to learn how they were abusing the use of chemicals, such as Furaden 5G that is a soil treatment chemical, against nematodes and other soil pests, on vegetables, and other annual crops. They were advised that the chemical is only meant for perennial plants, such as the fruit trees, since its potency last for 3 months. Farmers were advised not to harvest vegetables, such as kales, and tomatoes, within few days after applying chemicals. The most common pests cited by the farmers, during the training, were aphids that suck sap from fruits, and normally hides under the leaves, midge fly that damages leaves causing browning or blackening of the leaves.

(e) Establishment of school-based fruit tree mother orchards

The aim for this training was to help the farmers establish and manage fruit tree orchards that would in future provide scion materials for supporting existing and upcoming nurseries. This was ultimately expected to lead to improvements in nutritional status and income generating capacity of the targeted communities. The trainings focused on appropriate establishment and management of fruit orchards of mangoes, citrus, and guava.

In Baringo, the training on orchard establishment, and management, was conducted at Oinobmoi Boarding Secondary School. The school was selected to host the mother orchard, due to its close proximity to the main road, and reliable source of water, to support the growth of fruit seedlings. Prior to the establishment of the orchard, the stakeholders held a meeting at the school. A technician from KARI trained the participants on critical steps for successful orchard establishment and management. He emphasised on grafting, budding, transplanting, watering, and protection of seedlings against damages by livestock, diseases, and pests.

In Garissa, a two-day intensive training was organised at Garissa Farmers Training Centre (FTC). This involved thirty farmers and two extension officers from MOA and MOLD, at the district level. Two resource persons, from Kamurugu Agricultural Development Initiatives (KADI), conducted the training. An orchard was successfully established in the Young Muslim Secondary School, located within Garissa Town. The school was selected, because it had a large farm, and was one of the best performing secondary schools in North Eastern Province. It is both a boarding and day school, and it neighbours an orphanage school. The project had procured 200 seedlings of grafted mangoes from KADI, and out of that, fifty seedlings were planted in the school compound. Fifty more were planted the orphanage school. The planting was done by farmers, as part of the field practices, during a training session that was facilitated by KADI trainers. The process of training, and planting the seedlings, was delayed due to the warnings of possible flooding of the area, issued by Kenya Electricity Generating Company (KENGEN). The remaining a hundred seedlings were taken to Sankuri Secondary School that is 30 km northwest of Garissa Town.
In Tana River, a committee was set up, to select the appropriate school for establishment of the mother orchard. Mau Mau Girls’ Secondary School was selected, since it met the set criteria that included availability of reliable source of water, security of seedlings, and the presence of agricultural club(s) for managing the orchard. The committee discussed the details of establishing the orchard with the school administration. This was an important step for ensuring proper care of the orchard. In this meeting, the management committee consisting of ten members, drawn from the students, teachers, and MOA staff, was set up. Their mandate was to guide the establishment and management of the orchard. The project procured 190 seedlings from KADI, and provided four hose pipes, for the establishment of the orchard.

(f) Training on fruit trees grafting, budding and protection from diseases and pests
In Garissa, staff from KADI trained twenty farmers, and four MOA extension staff, on grafting, and budding of fruit trees, such as mangoes, citrus, and guava. The purpose for conducting the training was, to equip the farmers and extension staff with modern skills in grafting, and budding, through “hands on,” and demonstrations. The facilitators used tools like grafting and budding knives, pruning shears, grafting tapes, and the adhesive tapes. The participants learnt the importance of labelling seedlings, and the labelling techniques. Selection, and handling of rootstalls, and scion materials, was discussed in details. The diameter of the scion materials should be the same, or slightly smaller, than the rootstock material. Demonstrations on grafting, and budding, were done, and the participants practiced the learnt skills, using rootstocks, sourced from Garissa FTC, and scions from KADI.

(g) Training on Beekeeping
The purpose for conducting these trainings was, to assist the farmers and extension staff to get knowledge and skills in modern beekeeping techniques, and link them to sources of improved beehives, such as the “Langstroth hives,” and the Kenya Top Bar Hives (KTBH).” The project aimed at sensitising the farmers on the potentials for commercialisation of honey production, and enabled many beekeepers to improve the quality and quantity of honey being produced in the project areas and, thus, improve their nutritional status, and increase their incomes.

Three groups, with forty farmers, were trained in Baringo. These were Naitunga FFS, Sachgaa SHG, and Perkerra Beekeepers. The topics covered, included importance of beekeeping, different types of hives, modern beekeeping technologies, types of honey-harvesting gear, modern ways of harvesting honey, marketing of honey, etc. The trainings involved demonstrations on how to harvest the honey from modern beehives using equipments such as bee-suit and the hive tools.
The trainers were drawn from KARI and MOLFD. Future arrangements were made to procure modern beehives from Kerio Valley Development Authority (KVDA).

In Garissa, KADI staff facilitated the training of farmers in apiculture. The organisation has long experience in bee keeping and making of improved hives such as the Langstroth and Kenya Top Bar Hives. Demonstrations were conducted on appropriate methods for harvesting and processing the honey, how to use the smoker and the need to wear full gear (overall, gloves, gumboots and veil) for harvesting the honey. To avoid bee stings, the participants were advised to approach the beehives only from the back of the hives. Participants also learnt the necessary steps to take in the event of being stung by the bees. The training was quite interesting and participants additional one-day training event that was organised at the FTC. Ten Langstroth beehives were awarded to farmers who showed interest and commitment to engagement in apiculture.

![Langstroth hives that are efficient in honey production](image)

**Training in management and use of prosopis species**

The focus of the project staff was to create awareness, and conduct training to the local community on how to control the invasive spread of prosopis, and at the same time, uses it for economic purpose. The species was introduced to curb soil erosion, and to provide products, such as fuelwood, fodder, food, gum, building, and fencing materials. The advantages and disadvantages of the species were explored, and its management methods were discussed. Its management included recently introduced biological method, where the effectiveness of an insect pest was being tested. The other control method was physical elimination of the plant, through cutting it down, and using its products for economic purpose such as fuelwood, charcoal, and timber.

In collaboration with KEFRI Karura Forest Products Resource Centre, the project conducted trainings in Baringo and Garissa on energy conservation techniques. The trainings involved the local extension staff from MOA and Forest Department. The trainers emphasised charcoal production, using efficient charcoal production techniques, such as Casamance kilns. Demonstrations and hands-on trainings on using Casamance kilns to burn prosopis charcoal were done. The trainings also covered the broad aspects of energy conservation, such as the use of improved cooking stoves and fireless cookers. The facilitators were from the KEFRI Station at Karura. In Garissa, ten farmers and two extension officers, from the Forest Department and MOA, participated in the training. The project donated two sets of pipes for demonstrations of Casamance kilns. The trainers recommended replacement of three-stone stoves with simple parallel brick stoves, which could reduce wood requirement by one-third, and enclosed wood-stoves made from
reinforced mud with metal-top plates, which can reduce wood consumption, by two-thirds. Different types of improved charcoal and firewood stoves were displayed.

The participants explored potential markets for prosopis products, and possibilities of being linked to these potential markets. A South African company once provided market for prosopis pods to the Kenyan farmers. A German company, and an Asian company, showed interest, and are planning to establish factories for processing prosopis pods for livestock feeds. Surveys had been conducted at Marigat area, while KEFRI was negotiating with the Germany Company to provide pod dryers to Marigat farmers. KEFRI was also buying seeds from farmers, as a way of encouraging them to manage the spread of prosopis.

Farmers were taught the methods of collecting quality pods for processing into livestock feeds. The training sessions helped the farmers to realise why in the past they collected pods that fetched very little financial returns. The South African company was paying a maximum of KES 8 per kilogramme, but the farmers fetched less money, because they were collecting poor quality pods. The pods must be dried properly, before grinding them. To get quality products from prosopis, the farmers were advised to thin the plants.

The participants learnt how to prepare recipes from prosopis flour. The products included cakes, “chapattis, and mandazis,” and the participants were treated to a lunch of prosopis recipes. The participants went through a “hands on” training of burning prosopis charcoal using Casamance kiln. They arranged logs, and completed the process of setting up a casamance kiln. The participants felt that there was need to scale up the training, to reach a critical mass of the affected communities, in order to bring the prosopis menace under control. However, market for prosopis products remains an elusive dream that requires more research, and address to the policy issue that affect marketing of wood products in the country. There is need to identify mechanisms that would provide incentives to the farmers to utilise prosopis at a wide scale, and thus, help to control its spread.
(i) Farmer field days, demonstrations, and meetings
In Garissa, a field day was held at the Millennium Development Village–Dertu. It was organised in conjunction with the Forest Department, and officials of Millennium Development Goals. Prior to the event of the field day, announcements were made through the local radio station known as Star FM based at Garissa. The organising committee invited the local administration officials, NGOs, government departments, and farmers. There were many displays made from prosopis that included charcoal, poles, prosopis recipes, feed products, and furniture (beds, tables, stools, floor tiles, penholders, and carvings). The displays also included improved cooking and energy saving devices. The local media (Star FM), and the national media (KNA and KBC), provided live coverage of the event, and conducted interviews with the project team, and the public. The media coverage attracted many listeners, who had developed lots of interest in prosopis.

(j) Farmers' exchange visits
Farmer-to-farmer exchange visits were organised, where farmers from Baringo visited farmers in Garissa, to exchange skills and knowledge, related to project activities. The event was conducted at the Garissa Farmers Training Centre. Farmers and extension staff from the two districts interacted freely, and shared experience. Demonstrations of various products of prosopis were displayed. In addition, Garissa farmers demonstrated the making of wax candles, and strong ropes from the inner bark of prosopis. Women from Bour-Algi location explained and demonstrated the weaving of various patterns of ropes, for use at home, and for sale. Farmers from Baringo toured farms in Garissa, and exchanged ideas on innovative ways of dryland farming, management, and utilisation of prosopis, apiculture, and the general principles in crop protection.
3. Conclusion and recommendations

Implementation of the project was well coordinated, but the project duration was too short to realise substantial impacts. The target communities provided support to the implementing team; an indicator that the project was addressing the community needs. To meet the long-term impacts of the project, there is need for continuation of the project activities and, in addition, incorporate more research aspects into the project. It was clear that, crop production could be increased on land cleared off the prosopis. The implications are that, crops and prosopis interactions may be beneficial to the farmer, since a sustainable supply of prosopis products, and improved crop production could be achieved, in an improved crop and prosopis farming system. The spread of prosopis has been attributed to the goats that feed on pods, and a continuous crop and prosopis field would help keep off the goats.

There is need to put more efforts on research in marketing and policy of prosopis products. The affected communities need to be provided with incentives, to exploit the potential economic benefits derived from prosopis, in order for them to control the spread of the species. This requires wide-scale utilisation of prosopis if its broad spread would be brought under control. For instance, the government can provide incentives to entrepreneurs, who wish to set up industries for processing of livestock feeds, timber products, and commercial charcoal burners, for major towns in the country by reducing, or removing taxes associated with setting up factories. The project could identify some potential entrepreneurs, who could be exposed to exploitation of prosopis in other countries in the world, such as India.

The media should be involved in sensitising the communities on the potential benefits that can be derived from prosopis. The current media coverage focuses on negative impacts from prosopis, without disseminating all the facts.