infonet-biovision

Enhancing Tree Planting

Consultancy Report

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biovision

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Acronyms

CBs	Community Based Organizations
CFAs	Community Forest Associations
CIW	Community Information Workers (= extensionists of I-B)
FCP	Farmer Communication Programme (the umbrella organisation of which I-B is part)
I-B	Infonet-Biovison
ICRAF	World Agroforestry Centre (formerly the International Centre for Research on Agroforestry)
KEFRI	Kenya Forestry Research Institute, Muguga, Nairobi
KFS	Kenya Forest Service
KFSC	Kenya Forest Service Centre
NGOs	Non-governmental Organizations
NTFP	Non-Timber Forest Products
ToR	Terms of Reference
WS	Workshop

Photo 1: Delegates and Infonet representatives at Auditorium at KEFRI. 21-2-2012

I. Foreword

This Back to Office Report is a combined WS and Consultancy report reporting and providing a summary on 1) what happened at the Tree Planting WS held at KEFRI February 2012, and 2) the progress to include a forestry info-curriculum on the Infonet-Biovision website, www.infonet-biovision.org. The report provide highlights from discussions and collate material distributed – and suggests specific information to be uploaded for Infonet as to embrace the ongoing effort including plant procurement, tree planting, and tree management on farms in Kenya.

II. Background

Infonet-Biovision, an initiative of Biovision Farmer Communication Programme, provides small-scale farmers, communities, NGOs, and trainers with practical information and knowledge on simple, workable and ecologically compatible practices and methods that sustain farming and household incomes. It offers an internet platform with operational knowledge developed by local capacities, farmers, and scientists. The content is largely need-based and defined by farmer groups and proof-read and completed by experts.

There is a countrywide increased concern about frequent droughts and increasingly hostile climate. This is causing increased awareness, interest for, and planting of trees at farm level. This cannot only be seen in the landscape and on farms but also visible through changes by an increasing number of tree nurseries being established through various community supported initiatives.

After two years of piloting outreach activities, it has become evident that farmers in all I-B project areas are increasingly aware of and concerned about climate changes affecting their crops, livestock and livelihoods in various ways. It has become evident that farmers are concerned and also interested in how to counteract effects of climate changes by planting appropriate trees and by adopting organic farming.

However, there seems to be limited information on authenticity of the genetic source, the plant quality, and the resilience of the tree species to withstand the climate extremes or climate changes. Moreover, the species offered provide only a limited choice of "the usual" exotic species like *Grevillea spp* and *Eucalyptus spp*. This limits the potential of species yields, adaptation, diversity, and their climate resilience.

Arial maps presented during the World Agroforestry seminar *Using vegetation maps to infer the suitability domain of useful tree species - focusing on continental and eastern Africa (*9th February 2012 [1]showed that although forests are diminishing, local tree planting efforts are increasing and most cropland in Africa showed 5-10 % tree coverage. Subsequently, The President of Kenya decreed that all farms should aim for minimum 10% tree coverage. This decree has now been adopted as official government policy of Kenya.

For an activity that affects farms now and for future, a stronger foundation for choice of planting material, propagation method, seed source, procedures of planting, timing, weeding and tree management is needed. The Biovision Farmer Communication Programme (FCP) and its Infonet project must make more choices and specific scientifically solidly grounded recommendations available. Other activities, such as infusion of new or better material to nurseries may also be relevant.

A. Why embark on tree planting?

Infonet-Biovision is looking into the avenue of strongly emphasising and promoting tree planting whenever justifiable and beneficial. In order to do so, IB must widen its

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[1] www.worldagroforestry.org/our_products/databases/useful-tree-species-africa

foundation by adding expertise, knowledge, strategies, resources, and plans to accommodate this. The workshop and consultancy exercise was an attempt to embrace a wider range of strongly interlinked issues for the sake of better use and management of natural resources.

It is important to Infonet to analyse and filter its web-based content being provided – what is there, its relevance, ease of access, what else is needed, etc. Equally important is exploring what can be sourced from alternative sources and what has to be constructed a new.

Justification of a stakeholders' Workshop

For the aforesaid mentioned reasons, a consultative workshop would bring together various stakeholders including farmer representatives, forestry experts, and FCP programme staff who provided information, suggestions, and ownership on this new avenue. Thus, a workshop was planned to justify and support the intervention of tree planting as part of Infonet's profile. It addressed most of the below mentioned issues (footnotes link to actual outcome):

A. Vision[2]: what kind of landscape do we wish to have in future (after 10-20 years)?
B. Sustainability[3]: how to safeguard food, fuel, fibre, timber and charcoal production facing climate instability?
C. Resilience[4]: how to mitigate effects of climate extremes on farms in the short, medium and long term?
D. Balance: how to ensure and balance healthy environments of biodiversity, land conservation, and tree and crop production?
E. Benefits[5]: what are the direct and indirect economic gains and sacrifices from planting trees?
F. Choice[6]: what to consider when planting trees in woodlots, plantation, or in agroforestry systems (home gardens, alley cropping, etc.)?
G. Non-Timber Forest Products (NTFP)[7]: what are the NTFP gains by planting trees (pollen/honey production, fodder, fruits, leaves, bark, medicinal, etc.)?
H. Energy[8]: can we attain a substantial and sustainable charcoal and firewood production regime?
I. Other issues: Analysis of the farmer questionnaires showed high interest in many of the following areas:
   - Soil fertility, erosion control, shade provision, water retention, etc
   - Conservation Agriculture with trees
   - Land rehabilitation and reclamation through afforestation and reforestation
   - Species conversion (??=mobilisation, domestication, or deployment?)
   - Seed source selection (local, regional, national, or international)?
   - Tree seed collection, treatment, storage and germination aids[9]
   - Alternatives to seed collection – vegetative propagation[10]
   - Use and value of ICRAF, KEFRI and other databases as source material for Infonet's content for CIWs and nursery owners as practical information source
   - Way forward

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[2] Touched upon by Coordinator (Anne Bruntse) during Agroforestry presentation: planting trees alter environment and biodiversity
[3] Only discussed briefly by some presenters. Refer to farmer questionnaire to judge interest
[4] During Anne Bruntse' presentation, participants requested more information to be made available
[5] Presentations by Muchiri and Ungogu (see pgm. In Annex). Participants requested information to be available
[6] Covered by Anders P. and Anne Bruntse. Participants requested more information to be made available
[7] NTFP - A product of biological origin other than wood derived from forests, other wooded land or trees outside forests. References from several presenters. Participants requested more information to be made available
[8] Refer to farmer questionnaire for expression of interest
[9] Subject of high interest by participants
[10] Subject of high interest by participants

By adding a tree facts database to the other topics, IB can provide a ground for users and outreach staff to advise users on species choice, plant production, seed source and provenance choice, etc. In field, tree planting, silviculture, and management have further to be dealt with. The beneficiaries are many but the primary legal users' needs and expectations must first be met. Promotion of local nurseries is another key to approach to achieving a diverse, robust and assured maximal gains that fulfil the users' needs.

A consultant was recruited to prepare, conduct, facilitate, communicate, and write up the event. He worked in close collaboration with Infonet-Biovision team to ensure that format and content generated could fit standards of Infonet-Biovision. A farmer questionnaire was sent out prior to the workshop to ensure a more realistic feedback from grassroots as compared to that by the Community Information Workers (CIWs) only.

B. Tree Planting support service

As Infonet-Biovision CIWs frequently start environmental conservation in their areas by supporting Tree Planting, their knowledge base is explored. At present, I-B CIWs have a limited knowledge. Further, the Infonet-Biovision homepage provides very limited information on tree planting initiatives. Information gaps that needed addressing were identified by the group work on day 4 as well as through the farmer questionnaires.
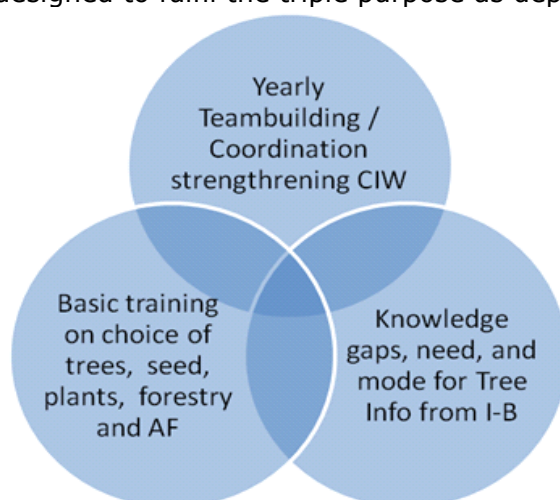
The tree species currently offered in I-B target areas which come from locally established nurseries initiated by Infonet CIWs provide only a very limited choice of mainly *Grevillea sp*. and *Eucalyptus sp*. This limits the potential of species yields, adaptation, diversity, and the total robustness towards climate change effects. Crucial factors to achieve mitigation against these weaknesses and promote tree growing are use of right choice of species, identification of suitable plants, and use of suitable seed sources, improved plant quality, and use of plants for better climate adaptation in rural areas.

C. Training WS on Tree Planting

Part of the CIW capacity for outreach is use of the database constructed by Infonet-Biovision as the main resource working tool. This workshop was planned by Infonet-Biovision and KEFRI to explore how to address some of the above mentioned issues and design appropriate ways of contributing to rural communities' capacity to rehabilitate, conserve and protect the natural ecosystems and promote the sustainable maintenance of a clean, healthy environment. This workshop was therefore intended to to equip and capacitate the CIWs of I-B to achieve this goal. Improved and simplified content on tree planting, cultivation, and environmental conservation is crucial to improving the work by CIWs and other users (e.g. extensionists from Ministry of Agriculture).

D. Objective of WS

The WS was designed to fulfil the triple purpose as depicted below:

1: Yearly teambuilding/Coordination – strengthening of CIW network

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2: Basic training on choice of trees, seed, plants, forestry and agroforestry
3: Determine knowledge gaps among participants, and which subjects that are mostly needed on Infonet-Biovision website

1: Yearly teambuilding/Coordination – strengthening of CIW network

The first objective of this WS was to strengthen teambuilding among the CIWs. The consensus on how to move forward, and knowledge sharing among the CIWs are crucially important dimensions to strengthen the Infonet-Biovision platform as well as strengthen its outreach network of knowledge gathering and sharing. The teambuilding strengthened the shared motivation and coherence of the CIWs and gives feed back to Infonet-Biovision on current trends and visions from communities. It serves as a platform to share ideas (e.g. the present success of the Katumani-Katoloni CBO in which the CBO sought alternative sources of fund raising). It defragments Infonet and visualise it, makes it real, pragmatic and operational by giving it identity in a plenum. Without this kind of "general assembly among stakeholders, Infonet could turn into an internet platform only without identity, people, and coordinated feedback provision.

2: Basic training on choice of trees, seed, plants, forestry and agroforestry

The second objective of this WS was to provide training on knowledge gaining, common motivation, persuasive assurance of the specific advantages of planting trees and how to payattention to special needs of the rural communities. This workshop (ref adjusted program in appendix B) focused thoroughly on seed choices, methods of multiplication, practical nursery management, where to get improved seed and planting material, uses of tree products (visit to KEFRI unit at Muguga 0n day 2). Extensive resource reference material was provided by both ICRAF and KEFRI for participants to take home, a list of which is provided, and some of which could become part of the Infonet-Biovision website.

3: Determine user defined knowledge gaps among participants

The third objective sought to determine user knowledge gaps. Subjects that are mostly needed on Infonet-Biovision website were to be defined by core users and stakeholders. To be in a position to do this 43 topics were suggested and put into questionnaires to collect information filled by CIWs interviewing farmers prior to the WS. An overview of this is provided on page 14: Farmer Survey (Questionnaires). By extracting, analysing, and prioritising these topics Infonet has now identified and clarified the information needs it should address. More specifically, the group work on day 4 dealt with this, but there was no sufficient time to scrutinize and discuss the results during the WS. Thus, the WS just had a quick discussion on possible issues. In the week that followed, the Infonet team compiled the questionnaires and now the project has a comprehensive picture of communities information/knowledge needs. The results defined way forward for constructing content on tree planting and management. For detailed discussion: see the section on Results of Group Discussions.

III.   Activities

A. Main activities

Three days of the workshop were devoted to training, demonstration and provision of knowledge and information on tree planting, species and provenance choice, seed and plant material sourcing, and nursery management. The last 2 days were spent on assessing farmers' and CIWs' needs, planning, and teambuilding issues. As seen in *Workshop Programme* (Appendix B), numerous topics were handled by various institutions including KEFRI, KFS, KFSC, ICRAF, as well as Infonet's coordinator and the consultant assigned.

B. Areas covered

The topics focused largely on initiation of tree plantings rather than on tree management in general. Thus, major areas appear in the final Workshop Programme in Appendix B. Major topics covered were: species choice, gains by tree improvement, gains from better seed sources, provenance choice, species screening, seed handling, processing, testing, storage, seed source establishment and management, nursery, cloning, cuttings, tree growers associations, seed access, myths and beliefs, and wood processing. A presentation on the Vietnam experience was given as a possible alternative approach to the Kenyan as clones are taken into farm forestry.

Several presenters including the KEFRI director Dr Chikamai, FCP coordinator Dr. David Amudavi and others emphasised that nowadays the prevailing interest is not solely "tree planting", but also "tree growing" – meaning that a more commercial approach to planning tree inclusion in farm management is recommended and encouraged. It is important for Infonet content planning team to make sure this aspect is given due consideration when planning website content. The following section provides some of the areas covered.

1. Situation of Forests and Forestry in Kenya

The Kenya Forest Service (KFS) presented a paper by Jennifer Ngige giving a deeper overview of the Kenyan forest and forestry situation at present. KFS' mandate is to increase forest cover and to ensure sustainable forest management for all forest types. At present a citizen consumes 1 m^3 wood per year, there are 40 mio. citizens, but the sustainable production is only 30 million m^3. Therefore we have a deficit of about 10 million m^3 wood / yr (timber, furniture & construction, fuelwood, poles, etc) every year. KFS favours planting of more indigenous trees than exotics as these underpin a number of other sectors (power, water, tourism, farms). This suggests that more indigenous trees should be domesticated. On-farm diversification by farmers from agricultural crops to commercial tree crops use primarily eucalypts due to their attractive returns, but proper varieties for different zones need to be used if farmers are to benefit. New *Eucalyptus spp*. should also be infused to add new traits and suitability as performance differs. Community forestry and their derived Community Forest Associations (CFAs) are strongly promoted. KFS recommends that charcoal-burners should not be demonized as we all depend on them and their products. KFS now works more outside the forest gate and with farmers as compared to earlier management regimes. A collaboration partnership with Infonet outreach network could be highly beneficial.

2. The Eucalyptus Debate

There is concern from the environmental lobby that the eucalyptus forests/woodlots will have adverse effects on water, erosion, and biodiversity. Every day of the WS the Eucalyptus debate cropped up. It was mentioned by all the speakers. The forgoing scenario has resulted in unprecedented growth of the farm-forestry sub-sector where the species of choice is eucalyptus. Anders had a presentation on the outcome of Eucalyptus based on scientific facts and on the KFS science and facts-based Guide for Forest Extension Officers to address the production and environmental effects. This guide was distributed to all. It is highly recommended for uploading on the Infonet website as it addresses all the issues in the current debate scientifically, and gives recommendations on where to plant and not to plant eucalyptus, benefits and profits, management practices and choice of variety for different locations.

3. Forest Seed Sector

The Kenya Forest Service Centre (KFSC) relies to a high extent on on-farm seed sources though they do not technically qualify as seed stands in terms of number of mother trees, their form and health condition and the isolation distance of the sources from other trees of the same species. Most farmers and informal seed vendors collect seeds from such sources and sell to development projects. Most of the seeds procured through those

channels are of inferior and unknown genetic and physiological quality but contribute a significant amount (about 60%) of National seedling production. It is for these and many other reasons KFSC is involved with the informal seed sector in the production, promotion and use of high quality tree seeds. This initiative encourages local farmers, registered farmer groups, and other landowners, to register their seed sources and be listed as seed producers (see *Appendix I: Farm Seed Contract with KFSC*). The registration implies formal recognition of the seed source and seeds. This deliberate policy is aimed at promoting availability of seeds and enhancing the overall quality of seeds of sources not owned by KFSC/government.

KFSC inspects, assesses, documents, and approves the seed source to ascertain its suitability. The inspection team consists of Manager KFSC, a Tree Breeder, Seed collection officer, local KFSC officer and a pathologist or entomologist. Criteria for selecting sources are:

- Accessibility - the seed source should be accessible by car
- Performance, vitality and conformity to end use must be above average > 20 trees
- More than 50% of the target trees should be mature in the case of natural forest
- The stem form of selected trees should be straight with well formed crowns
- No pests and diseases

Following approval, KFSC agrees with the source owner on delivery of tree seed under set terms and conditions. Both providers and users benefits in a fair and equitable manner.

IV. Assessment of Infonet's Website-content and Farmers' Preferred Tree Species

Thursday morning sessions of group work was organized by Anne to determine A) how the Infonet content on trees was viewed by users, and how to improve the clarity and ease of access. Further in session B) specific tree species was listed as a start for farmer preference in different agro-ecological zones.

In both sessions participants were divided into groups with members from representing the major agro-ecological zones in Kenya. The participant from Coast, Eunice, joined the drylands group. There were 5 groups as follows:

A. Group work on Needed Infonet Content

Highlands Group:

Members: Paul Muchiri – secretary; Paul Muhuha – chairman; Joseph Mwaura; Christine Njagi and Julius Murangiri

Wishes for content presented from this group were as follows:
- Conservation of energy- improved stoves
- Biogas/ bio energy plantings (*Croton megalocarpus* and Castor oil)
- Oil extraction technologies
- Briquette technology
- Bamboo propagation and industrialization of products
- Fruit planting – awareness – good management – value addition
- Control diseases in fruits
- Planting technique
- Multi-grafting technique
- Fruit tree products
- Firewood
- Animal feed
- Juice making
- Organic manure preparation

- Charcoal making
- Bonsai trees
- Shade/ornamental trees

Rift Valley Group

Members: Benson Chege, Nellie Wambui, Esther Kiruthi, Grace Nyambura, and Joseph Twala.

The demand for information from this group was as follows:
- Trees for soil conservation. There is a need to expound more on the rooting system of different trees, interims of wide spreading roots, deep roots or fibrous tree roots. This will help the farmer to choose the better tree to plant on the farm – wide spreading (affecting crops), fibrous (dry the soil), tap root – fetching nutrients from deep soil
- Nitrogen fixing – more information on nitrogen fixing trees.
- Water utilization. Best trees for agroforestry should have little water needs – there is need to know which trees consume little/a lot of water.
- Canopy cover – expound on trees with light canopy and those with dense canopy. This will allow the farmer to choose the best for wind break, bee keeping etc.
- Tree biomass amount and quality. Suitability of leaves to be used on the farm for compost and mulch and how much a tree produces for reasons of composting and soil conservation and to avoid trees with chemicals that disturb crops etc (allelopathy).
- River bank protection. Should avail information on the right indigenous trees which can be planted along the river banks for conserving both soil and water.
- Fodder crops. Need more info on trees for fodder esp. in dry areas e.g. *Balanites, Acacia, Adansonia, Prosopis*

Eastern Group (Machakos/Kitui)

Members: Margaret Kioko, John Mutisya, Anthony Musili, Patrick Kimeu, Eunice Mwanyanya, Ruth Mutisya, Victoria Mutinda, Sammy Mututu, and Julian Mutuku.

Wish for content were as follows:
- Species of economic value for the area
- Seed sources (identification and management)
- Seed collection and handling (breaking seed dormancy)
- Nursery establishment and management (Preparation of nursery beds and mixing of soil)
- Facts about Eucalyptus
- Trees for fodder /fertilizer
- Plant propagation – vegetative
- More trees to be added for medicinal value
- Value addition on wood
- Best trees for beekeeping project
- Species suitable for charcoal
- Drought impact
- Renewable energy

Western Group

Members: Sarah Mahaya, Evaryne Onganga, William Buluma, Geoffrey Juma, Alfred Amusibwe, Thomas Mutuli, Thomas Masii, and Kelvin Majani.

Needs for content were identified as follows:
- Which crops to grow with which trees – can eucalyptus be intercropped?
- List of trees for agro ecological zones
- Pests and disease management – remedies
- Trees with special uses (trees and culture)
- Tree names in local languages
- Tree species found in Western – there is a need to expand list of tree species on Infonet website
- Management of tree nurseries

- Seed collection management
- Trees that conserve and purify water sources – *Sizygium guenensis*, (mussema) *Ficus thoningi* (mukumu), *Ficus sespirit* (mukuyu), *Picechova javenica*, *Ficus lutea*, *Mesopia emitis*, *bamboo spp*.
- And most of indigenous species

Central Group

Members: Edinah, Sarah Karanja, David Karanja, Peter Murage and Joseph Makumi.

The group requested for exhaustive information on:
- Tree species for specific areas i.e. Muranga, Aberdares
- Agroforestry fruits
- Seed collection
- Nursery management
- Locally adaptive propagation techniques
- Agroforestry for smallholder farms (design)
- Tree management such as pruning, etc
- Agroforestry as a business/ income generation how to improve:
 - sale of carbon credits
 - sale and value addition of fruits
 - sale of seeds
 - fodder trees
 - timber trees
 - trees for honey production
 - ecotourism

After the group work there was a plenum discussion where it was decided that it would be best to rank information on the Infonet website according to uses and then put the climatic requirement in the datasheet on the individual trees. This is preferred to the present system which sorts content according to agro ecological zones. This is already a huge clarification which justifies how important it is to format content according to users' needs.
The above will be compiled gradually and according to available resources by the Infonet content management team, see the identified material in Appendix G on Material screened. A lot of information already exists – in many cases Infonet may only have to ask for copy rights of papers, uploads, and pictures to publish content from other sources.

The highlands group has generally larger size farms, and their wishes are quite different to the rest. It is not certain whether it is farm size, or better education level that cause this difference, but their special wishes for information on alternative energy sources to complement tree products should all be catered for as much as possible. It may in future have great relevance to other areas.

B: Session on Species Selection

The same groups in session B were handed out (incomplete) tree tables from ICRAF based on old literature (printed from the new blockbuster, the ICRAF website). These lists specify different species that were found originally in the 17 different agro ecological zones of Kenya (Smaling 1993[11]) and do not include exotic species. However, the indigenous trees listed include all major uses as originally recorded. The groups were asked to look through the lists for their areas and tick the ones they wanted to promote including their most desired uses. Exotic species were added by the delegates.

The delegates became keen on the topic and were so devoted - groups continued the work deep into lunch hours. Some very good response was collected–: All the printed out ICRAF lists were returned with comments, preferences, and even new so far unlisted uses of

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[11] Smaling, E.M.A., 1993. An agro-ecological framework for integrated nutrient management, with special reference to Kenya. Doctoral thesis, Agricultural University, Wageningen, The Netherlands, (X) + 250 pp.

some of the preferred species, and other suitable trees for the respective regions were added including exotic species. Follow up will be made to include them all in Infonet content. It appears it is time for ICRAF to update their databases. When it comes to species uses it is only qualitative marked with either Yes or No for all possible uses. Furthermore, this checkmarks appear often not to be substantially founded and contains errors. Whether trees can be used for a certain use or not should take a participatory approach combined with experts knowledge. The task to perfect the database is immense and complicated, however, as it could easily be a elaborate, year-long task based on research and rural appraisals. Further uses and ranking differ so whether e.g. coconut wood is usable for furniture depends on region, culture, and market.
During the following discussion in plenum, Infonet CIWs agreed to utilize resource persons in their areas to map anecdotal knowledge from elderly villagers. Many expressed that such local knowledge should be preserved and recorded for future use. Otherwise, coming generations will be depraved of such knowledge.

As Bo Tengnas (Infonet friend and consultant) have stated and Anders Pedersen further reiterated, many species are repeatedly grown in several zones which means that they are generally suitable and have a wider range than the agroclimatic zoning currently used by Infonet prescribes. Zoning itself must not determine species choice but are at most a guiding tool. Many of the listed species are less known. In the discussion that followed, suggestions of setting up trial plots locally to screen for more species were made.

C. Group Work on Methods of Scaling Up Tree Planting

More group work took place in the afternoon on 23/2 on Bottlenecks for Scaling up Tree Planting. The group members were assigned to group 1, 2, and 3 respectively – they were chosen evenly and randomly (by assigning numbers 1,2,3 according to where people sat in the room) with 10-11 delegates per group.

Group 1: Scaling up

The task became to identify **Bottlenecks to <u>Methods for creating Impact</u> through scaling up tree planting**. Keywords: How to motivate, engage, and assist present and potential planters? How to scale up for the farmer, the community, the larger area?

The group assigned this task answered this question not by identifying bottlenecks so much as identifying positive actions that Infonet (CIWs) outreach could undertake to create impact in tree planting. A bullet list of positive actions that may create impact in tree planting was presented by the group:

- Looking at cases of sharing practices by doing
- Lead potential growers to market
- Join groups with common interest
- Cooperate with local administration
- Saving funds to be established for farmers
- Tokens/incentives (computers etc.) should be rewarded good groups
- Tree programs for schools
- Assist to get the right seed (not to lose momentum when ready)
- Demonstrate role models
- Farmer exchange visits
- Capacitate farmers
- Provide information and literature
- Community field days on tree planting
- Awareness creation
- Link to international days (e.g. Forestry days. Planting days).
- Advocacy by use of mobile phone messages? (?)

Group 2: Quality

The task was to identify **How to Improve Quality of Plantings and Revenues through scaling up tree planting**. Keywords: Seed, Planting material, tendering of plants, weeding, thinning, pruning, market access, etc. Ways forward…
This group actually identified some bottlenecks as a way of recommending how to improve planting and revenue as seen from list below:

The following list was presented by the group (also randomly chosen):
- Increase information in general – the awareness and knowledge is low
- Empower farmers to protect indigenous species
- Motivate farmers by spreading awareness
- Demonstrate better practices (a lot of seeds get lost)
- Lack of seed banks – tree species disappear to charcoal burners
- No linking (to suppliers?)
- Small centres should be attached to larger centres
- Transfer elders' knowledge to new generation of people
- Tendering of plants insufficient
- Selective weeding
- Disease & pest control lacking
- Pruning and thinning not applied
- Ongoing trials / demos wanted
- Develop better policies (incentives?) for CBOs to join up with NGOs
- Revenue poor or delayed
- Centres required as focal points
- Engage young people and teenagers
- Gender issue to level out: men have most user rights. Women run nurseries better!?
- Collection of anecdotal knowledge urgent

Group 3: Role of Infonet

This group (also randomly chosen) was asked to identify, list, and prioritise **needs of Infonet** CIWs to assist in alleviating bottlenecks in scaling up tree planting – Where can we make a difference (e.g. coordination, supplies, advice, trainings, etc.). They were meant to be specific (who, how, when, where, what), but the results that came back from the discussion were more general. This suggests that the question was not formulated clearly enough.

A list of Infonet CIWs needs in order to alleviate bottlenecks in tree planting was presented by the group:

- Infonet to coordinate better with other bodies, e.g. MoA, Health, CBOs, Churches
- Safaricom/Airtel services to be used in communication
- Participate in Field Days with youth
- Partnering with local events (e.g. marathon day)
- Field days
- I-B cooperate with companies
- Training of Trainers
- Demand driven training
- Focus on practicalities (tools, showing how to do, etc.)

General discussion

There was appreciation of I-B. I-B should take advantage of what is already built. The success is not only linking to farmers but also in linking to KARI and other local based organizations/institutes. I-B has a big heart and is very caring in the approach. Knowledge on I-B is useful. Most farmers have still no computers. CIWs should liaise closer with schools. I-Bs stronger funding would be appreciated. Broadcasting on local radio is recommended. A larger discussion came on opportunities and whether to compete with or to join Government Extensionists. The general consensus was that it is most effective to collaborate closely with other local service providers and generally complement each other

rather than to compete. The consultant expressed worries if I-Bs profile become diluted or disappeared in the crowd of Govt. extensionists or others. The Infonet-Biovision coordinator saw low profiling and a strong demand driven approach as the only sustainable solution. Infonet outreach Network appears to grow. A delegate suggested introduction of county meetings. Build on experiences! A suggestion came on how to support farmers to allow them to pursue opportunities by themselves. More cooperation with MoA should be encouraged. This was questioned by the consultant as he felt that the Ministry extensionists are weak and may pull out a lot of resources with uncertain gains for the receivers. Further, it may deprive Infonet the credit of its efforts. A farmer insisted that "functioning" is the key: make things happen yourself and people will come to you.
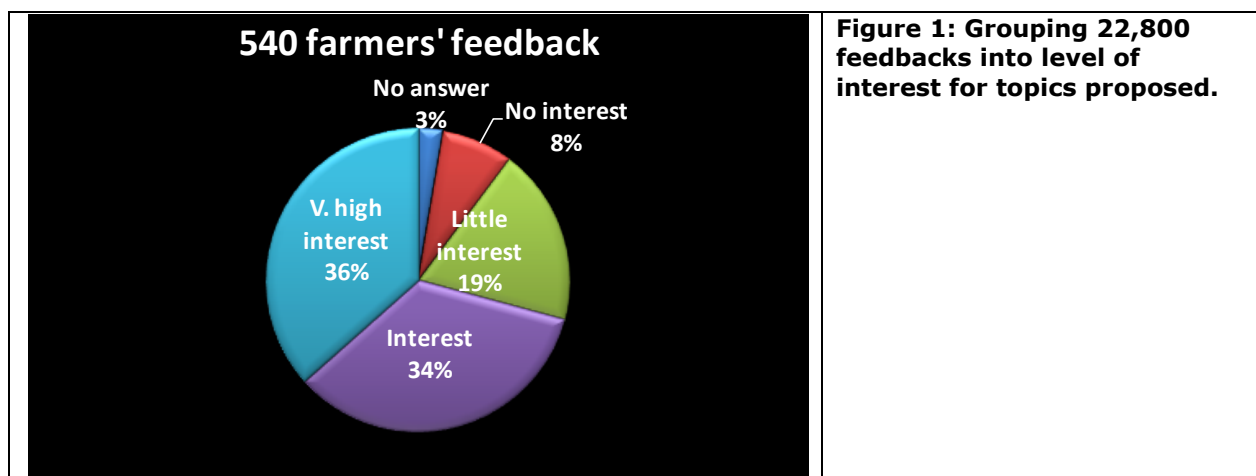
D. Farmer Survey (Questionnaires)

Before coming to the workshop, all CIWs were provided with farmer questionnaires and instructions for filling. The overall topic was: **Which information about growing trees is most in need or of particular interest?** Each interviewer interviewed 20 - 40 farmers in his/her area, of which all plant or potentially are planting trees. Interview conducted by most Community Information Workers (CIWs) and other delegates. The task was to give scores for expressed attitude towards information needed, done on a scale from 0, 1, 2, or 3, as follows:

Attitude ➜	No data	No interest or need	Little interest or need	Interested or needed	Very interested/ needed
Score ➜	blank	0	1	2	3

Blank = No answer 0=No interest/need; 1= Little interest/need 2= Interested/need; 3= Very interested/needed

Farmers were selected randomly and as scattered as possible with max. 2 per village. The formats used for farmer by farmer were kept as originals and now kept by Infonet-Biovision. Summary sheets at CIW level for all his/hers farmers are calculated and combined by the CIW into summary sheets. The sheets were mostly crosschecked and counts were made. Total scores were checked and validated for each Info-topic (Reference number). Interviews were confrontational (direct) between CIW and farmer. They took place 5-18 February 2012. Compilation was done 19-20 February. Individual sheets were brought in for the WS. Collate/compile data for all farmers into one sheet (Sheet 2). Thereafter they were further scrutinized, crosschecked, corrected, and amalgamated by Anders and Hudson. From results in Figure 1, it appears that about 70% of replies urged for more information on the topics elaborated in Fig.2. Surprisingly few topics are not adressed or of no interest at all (less than 11 percent). .

Figure 1: Grouping 22,800 feedbacks into level of interest for topics proposed.

Of 24 feedbacks from delegates the efforts by delegates and the obvious trustworthiness were evaluated relentlessly by the team, see the scores in Appendix E: Participants List + Individual Survey Score ↓. Some answers cast doubt on reliability simply by the way they were filled. Others were seeking shortcuts. The majority appeared in good order and were returned after tremendous efforts.

 Results show in general a solid need and interest on a wide range of tree cultivation issues. E.g. medicinal uses, planting, tendering of young trees, soil improvement came up with high scores. Only two issues, charcoal production and tree climbing had a majority of less interested farmers. The remaining 41 issues, see Figure 2 and Appendix F: Farmer Survey Results, were all of major interest for the majority of the interviewees. The uncertainty and possibly bias that are part of such survey is assumed outweighed by the comprehensive amount of responses resulting in a trustworthy feedback. Quite a consistent and strong result leaving no doubt on the outcry for more information access in virtually any corner of all aspects related to planting and growing trees with success.

Figure 2: Result of Infonet-Biovision farmer survey for 44 issues related to tree cultivation.

NB: Question 39 deleted. "Nil" or "little interest" is bulked into "Low Interest", while answers "interested" and "very interested" are grouped into High interest. Data February 2012. Approx. 540 farmers interviewed on 43 issues by 24 infonet CIWs, farmers, and associates. 22,840 replies.

V.   Discussion and Outcome of Workshop

A stunning interest for tree planting was repeatedly expressed by the delegates. Most (all?) aspects of topics related to tree planting were welcomed and adopted by the delegates. The hunger for knowledge and encouragement for Infonet to embark strongly on adding tree planting information was clearly spelled out by the groups as well as from discussions and the planning event. The participants expressed a need to proceed further

from not only tree planting but also tree cultivation, tree management, and marketing of wood and tree products. These latter issues were only in glimpses dealt with during the WS (except for the visit to the wood research excursion to Karura).

As a result of this WS, Infonet-Biovision now has an expressed, quantified, and qualified demand from its main users to create an improved platform of information on Tree planting and management with specific wishes for content subject as a guideline for the way forward. The major challenge now comes to prioritization and selection of material. In *Appendix G: Material screened*, a first list and a range of recommended material for uploading is launched. In addition, the species information at Infonet at present should be replaced with or infused by that of www.prota4U.org.

The WS became altogether more of a training event than a discussion and group work forum (see Objective 2, page). Due to time constraints no course evaluation was conducted. Likewise, no evaluation of the delegates comprehension and added performance was given and all were given certificate despite some were only present very sporadic. It was the perception of the facilitator that people were very motivated, almost inexhaustible, engaged – and willing to spend every evening on extended programme or on socialising with the group. The teambuilding part was even more evident – a lot of talks, discussions, and a wide forum of persons who dared to speak up during sessions. Questions were frequent and contributed to a proactive and constructive atmosphere. The balanced ratio male/female gave sweet vibrations and an active dance-floor on the last evening.

The venue of having KEFRI hosting the event tied new knots and increased information shared and added to the networking. Several publications from KEFRI were ordered and gathered by the participants.

KEFRI as a venue was chosen in nice rural and peaceful settings. There are things to improve when KEFRI becomes host - these in areas of liaison, coordination, communication, access, information, price-info, internet, attendance, introduction, shopping, and services. Instead of 10 persons 10% focused on our WS it would be better with a single person 100% devoted and present throughout to make things happen.

We and KEFRI-training section realised that our participants were young people committed to improving their own environments in their communities, and not the usual crowd of mostly middle aged and elderly extensionists. As a result of the WS, Infonet-Biovision was granted 2-3 seats per course (4 courses per year) on the **Participatory Natural Resources Management Course,** running quarterly, most recently 12th – 25th February, 2012.

Another course, held yearly, is the Regional Training Course on Mitigating Climate Change in Africa through Social Forestry. Next course comes in October/November this year.

Two or more delegates expressed interest in becoming seed distributers (or stockists) for KEFRI having seed outlets.

The last Appendix on *Farm Seed Supply Contract to National Grid* shows a form encouraging Infonet farmers to register to become seed suppliers to KFSC, provided they have access to good or superior seed sources.

VI.   Some Ideas / Recommendations

Several issues came across during the consultancy. Some are pertinent, others may be taken as time allows them to be in-cooperated in annual workplan and fund raising activities.

Tree improvement at local level (practice, genetic material, processing, markets). The WS covered the seed, seed source, species, and genetic quality. More intense, tailored and deeper knowledge is required once we have selected priority species locally. Missing issues are species screening trials, lay-out, successive conversion of tree stands to become seed sources, shortcuts in seed sources, breeding seedling orchards, use of felled trees, etc. Further comes below:

A comprehensive training course in 2013 on planting design, spacing, weeding, survey, inventory, transect, field tendering, tree management, pruning, thinning (mode, strength and timings), goal-oriented mgmt, relative spacing, maximise flowering, fruiting and seeding, crop assessment could be considered by Infonet-Biovision.

Together with others (e.g. ICRAF, KFS, or KEFRI): Organise a regional WS (Rwanda, Burundi, Tanzania, Somalia, S-Sudan, DRC, Uganda and Kenya: on widening the genetic base of applied tree species. Domestication – research, reality or illusion?

Baseline survey on Infonet-Biovision farmer groups as there seems to be a vague or unclear anchoring of stakeholders. This could be a wrong observation and has neither been discussed nor probed. However, are these groups devoted to Infonet or have they arisen from other sources or initiatives. How can they or I-B claim them as part of I-B groups, setting of minimum criteria[12]?

Database on Infonet Farmer Groups. The groups appear not to be clearly defined (see above) and their involvement and benefits to/from I-B are not clear? Details on farmers groups name, numbers, name, sex, location, age, and names of chairman, secretary, and treasurer[13] Likewise, what do the groups do, are they permanent or just grapping opportunities? What is their capacity to engage, mechanisms of operations, etc? A database could be the backbone of Infonet-Biovision and could provide research information, search options, statistics, baselines etc. which can be used in ongoing reporting as well as in new interventions.

Database on Infonet partners
Also the I-B partners seem not clearly defined. What does it take to be a partner and are the criteria to count and qualify as a partner to Infonet established? Details on partners' name, doings, size, location, and contact details[14].

Adjust ToRs for all Infonet-Biovision staff and apply common and transparent rules for travels, consultancies, meetings, night-overs. Performance based contracts and probation period for all present and coming assignments

The World Bank has a budget inviting decision makers to VN to study how planting can be enhanced by giving soft loans to smallholders who, upon planting, in return gets title deeds on the land planted.

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[12] Comment by Anne Bruntse: the groups are NOT only I-B groups. They are genuine interest groups organized by themselves and registered with Min. of Social services. The CIWs find out where they are and what their interests are and try to assist them with good information on how to move forward.
[13] Comment by Anne Bruntse: such a database is planned by Infonet with groups registered on googlemap for all service providers and well-wishers to clearly identify them. Infonet outreach has no monopoly in working with these groups, and find it detrimental to try to isolate them
[14] Anne Bruntse: the most important are listed on the project website as partners by presence of logo

Forest Field Schools (FoFS) a concept developed by FAO, KFS and modified by the consultant. See Concept description in Appendix. Independently, a unique (and successful!) case has been reported from Kenya[15]). Concept prescribes training in the forest, participatory actions like inventories, plantings, felling thinnings species selection etc. Simplified Farmer Field Schools as a tool for natural forest management by villagers through screening of very few species, types, and provenances without much documentation. The FoFS could be an option for I-B in the future to use the concept to have more intensive, tangible training and coaching on spot enabling villagers to manage the planting without hesitation.

Development of rare crops, rare fruits, and rare tree varieties of commercial value could likely be combined with market concepts and value addition. Infonet can identify suitable information from the internet and write up articles for new opportunities. Enough information exists to initiate. This requires intensive research, which KEFRI and ICRAF could do. This might be beyond Infonet's scope and mandate, but on-farm-research is useful and crucial for any development on this.

<div align="right">Anders P Pedersen 16-03-2012</div>

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[15] Check this link: www.kenyaforestservice.org/index.php?option=com_content&view=article&id=281:farmers-field-schools-in-kakamega-county-graduates&catid=223:hict&Itemid=98

Appendix A.   Terms of Reference

<ins>International Consultant to Provide Infonet Content</ins>
<ins>Version 5 as per 25/1-2012</ins> (Abbreviated):

Task 1
The overall task is, together with Infonet Biovision, to prepare, facilitate, and follow up on a workshop on Tree-planting strategies for farmers. More specifically, to:

Assist Infonet team preparing WS program, make calls, and discuss input with keynote speakers, etc. (2 days). Infonet staff will identify experts before arrival of consultant so work can proceed easily
Dissemination, registration, documentation, logistics (Infonet, KEFRI and consultant) receive papers, and presentations. (2 days) Done by Consultant
Prepare own presentations and papers on key issues of tree planting (choices, design, plan, manage, and analyse etc.). Prepare group work (4days).
Facilitate WS (4 days)
   a. Group work (guide presentations, co-chair discussions, extract conclusions and opinions)
   b. Work in plenum, chair, facilitate, contribute, records
   c. If time allows: Field Exercise
WS Report together with rapporteurs for each session (Findings, prevailing opinions, recommendations from audience, bottlenecks, and ways forward) (3days) – This is prepared from the first day the WS starts to accomplish the report (adds 2 days).
Follow-up or initial work (6 days):
   • Before workshop – Review Infonet content in collaboration with Infonet and identify glaring gaps (compare notes from Bo Tengnas)
   • Identify content areas and structure for content fill in
   • Provide contributions to content as time allows and agree with Infonet on work

Task 2
Prepare a JRS or other proposal (1 day)

Deliverables
Planning and conduction of WS, including own delivery of 5-8 presentations/papers
Compilation of information (papers. posters, material distributed, ppt-presentations, etc. on selected topics
Compilation of group work
Workshop report
Content contributions
   a. The consultant keeps a roster (timesheet) and account for activities each day contracted
   b. Content Drafts shall be submitted to Infonet management for checks and comments
   c. The consultant review contributions according to questions and recommendations from WS, farmers and Infonet Content management

Manning, remuneration, accounting, and time frame

Staff identified is Dr. Anders P Pedersen, contracted directly by Infonet-Biovision.
Period anticipated falls from 31/1 – 28/2 – 2012
The consultant is given an initial contract of 20 working days including research, report compilation and content contributions.

Saturdays count for half work days, Sundays are off-days irrespectively of holding work or not. Extension of contract as agreed after verbal discussions with the consultant.

Follow up

Extension of contract *might* be relevant if needed/justified. Issues preliminary identified:

1. Discuss and define visions, strategies and plans by integrating tree planting as a core activity of IBs capacity and metier
2. Develop Idea catalogue for I-B with 10-20 issues (according to interest from WS) on possible ways forward and new interventions (xx days)
3. Possibly elaborate 1-2 proposals or concept notes
4. Compile appropriate content and exemplify into Infonet structure on tree planting practices for Kenya. The final result is a practical tool to assist and guide farmers on whether, where, which, and how to plant trees in areas that could be made available for this activity/investment
5. Discuss and possibly advice on intervention in more African countries
6. Advice on funding opportunities

The candidate

Anders Pedersen is a Danish national, international forester and PhD holder in tree improvement. He has 7 years experience in East Africa on long and short term contracts and speaks Kiswahili well. He has a long and short term experience in project technical assistance and management in developping countries.

Profile in project identification, planning, management, execution, quality assessment, reporting, evaluation, training, extension, team-building and networks. Forestry, agriculture, extension, yield, improvement, management, rehabilitation, biodiversity, field research, and conservation. He is specialized in tree improvement, silviculture; species mobilisation, non-timber-forest-products and species, conservation of forest genetic resources; nurseries, farmer field schools, biodiversity; agroforestry; forest rehabilitation; seed biology, research, procurement and handling; field trials, management of natural forests, community forestry, rural development, and poverty alleviation

He was identified through the professional web-based network LinkedIn by chance as he was unknown to I-B. After a number of email discussions with I-B, he was found to be qualified for the tasks which have been developed in a dialogue with him. CV and list of referees provided

Appendix B.   Workshop Programme

Sun 19th February			
Time	Topic	Who	Notes
p.m.	Arrival to KEFRI and KARI, registration	Njeri	
18:00	Dinner at KEFRI (optional)		
19:00	Transport to KARI by bus	KEFRI-logistics	

Mon 20th February			
Time	Topic	Who	Notes
08:00	Registration and refunds	Njeri	
08:30	Opening address by Infonet-Biovision	Anne Bruntse, Infonet	
08:55	Logistics related to the course	Njeri I-B + Lucy KEFRI	
09:00	Infonet-Biovision now embarking on tree planting	Anne	
9:20	Intro round 1	Delegates	
9:35	Presenting the Programme	Anders Pedersen	
09:45	Opening - Welcome to KEFRI - Intro Round 2. Tree Planting in a context	Ben Chikamai	Director of KEFRI
10:30	Coffee Break		
11:00	Gains from Basic Tree Improvement, Genetics, and Plant Production	Anders	General
12:15	Agroforestry	Anne Bruntse	
13:00	Lunch		
14:00	Species Selection	Anders	
15:00	Coffee Break		
16:15	Placing value of forest production	Dr. M. Muchiri	KEFRI (this lecture given 1st time 16/2-12 at PNRM-course)
17:00	Announcements	Anne	
18:30	Get Together barbecue at KEFRI	all	Outside food canteen

Tue 21th February			
Time	Topic	Who	Notes
8:30	Tree planting. What is in it for the farmer?	Jennifer Ngige, KFS	Subsistence oriented presentation
09:50	Information available KEFRI	Paul Tuwei	Info-officer at KEFRI
10:30	Coffee Break	all	
11:00	Nursery Mgmt and simple propagation methods (Handouts: i) simple seed quality guidelines, ii) growing fruits and nuts in Kenya and iii) Nursery book iv)Seed dormancy and pre-treatment	Anne Mbora	ICRAF (not only WAC material)
12:00	Seed collection, handling, storage and testing	Anne Mbora	ICRAF
13:00	Lunch		
14:00	Field trip to Karura forest and Forest Product Research Centre	Reuben Shanda	Demo of bamboo, wood processing, charcoal prod., NTFPs
16:30	Tree Biotechnology unit at Karura forest	Mr. Samueli	Tree Biotechnology Pgm. Trust nursery
	Nursery, Mountain View (Kangemi) along Waiyaki way owned by Wangige farmer	David Njogu	Commercial Nursery

Time	Topic	Who	Notes
19:30	Film: Tree Planting in Drylands – 30 minutes		Bamboo room
Wed 22nd February (Practice on Seed Sourcing, Handling, and Supply)			
Time	Topic	Who	Notes
11:30	Species and Provenance choice	Anders	
14:00	Material suggested. Links, literature, hand outs	Anders	
09:20	KFSC. What we do - Statistics and Overview	W. Omondi	Director of Kenya Forest Seed Centre
09:50	Recent development of Seed Sources. Seed Source Overview. List superior + recommended Seed Sources	KFSC	
10:15	Coffee Break		
10:35	Departure to nearby Kenya Forest Seed Centre		
10:50	Facilities (extraction, cleaning, drying, testing, storage, pretreatment, sowing in research nursery)	Peter Angaine	Do not rush: there are many crucial details new to delegates
11:50	Where, when, how to buy the best suitable and well bred seed?	KFSC	Lecture not held
12:20	Seed Lab	Agnes	Very well presented seed laboratory testing procedures
12:30	Collect info (and seed samples?)	KFSC	Incl climbing demonstration with all the right equipment
12:45	Back to KEFRI for lunch		
14:00	Field TRIP (seed source types, management, classification, tree improvement, seed source delineation, seed source design, management, collection method, seed handling in field)	KFSC	Saw *Euc. grandis* provenance stand & *Warburgia ugandensis* SPA
16:15	Seed source classification / provenances	Anders	
19:00	Film (video) on Nursery Techniques	KEFRI	
Thu 23rd February Group Work Day: **Infonet-Biovision's role being instrumental in supporting tree planting**			
Time	Topic	Who	Notes
08:30	TREE SEED SOURCES , Choice, Assessment, and Classification, establishment and management	Anders	
09:15	Questionnaire Survey. Outcome, procedure, weaknesses	Anders	Hudson receive and process data
09:30	On line demo of Info-Nets Homepage on info on Trees	Hudson	
09:45	PROTA4U presentation & demo (internet-wired computer)	Anders	
10:15	Group Work– Species choice: 5 Groups from different eco-zones in Kenya (uneven sized groups)	Anne	
12:00	Presentations by group		
13:00	Lunch		
14:00	Group Work: **Bottlenecks for Scaling up Tree Planting** 1. Method and Impact. Keywords: How to motivate, engage, and assist present and potential planters? How to scale up for the farmer, the community, the larger area? 2. Improved Quality of Plantings and Revenues. Keywords: Seed, Planting material, tendering of plants, weeding, thinning, pruning, market access, etc. Ways forward… 3. Needs from Infonet – Where can we make a difference (e.g. co-ordination, supplies, advice, trainings, etc.) Be specific (who, how, when, where, what)	Anders	
16:00	Presentations by group		

17:00	Plenum Discussions		
19:00	Farewell Party at the auditorium		
Fri 24rd February (Planning Day)			
08:30	Other ways? Tree planting ways and success in Vietnam	Anders	
08:50	Planning 2012 (and ahead)	Anne	Only for Infonet-Biovision CIWs
10:45	Tree and People Dimensions From Emotions and Beliefs to Faith and Facts	Paul Ongugo KEFRI?	Co-existence, indigenous and anecdotal knowledge
12:15	Briefing – News from Biovision Trust and Farmer Communication Programme	David Amudavi	Guest: Peter Mwenda MSc.-student at ICIPE
13:00	Certificate hand-over (David). Closing by Infonet and KEFRI	Anne	Closing remarks by Josephine
13:30	Lunch, Check Out and Farewell	all	

Appendix C.   Involved Resource Persons

KEFRI logistic Lucy Kavindah, KEFRI, tel 0722215566 @: kavindah@yahoo.co.uk
Presenter: Anne Mbora ICRAF, tel. @: A.mbora@cgiar.org
Dr. Paul Ongugo, KEFRI, tel. 0722820660 @: paulongugo@live.com
Dr. M. Muchiri, KEFRI tel 0722873675 @:   mbaemuchiri2002@yahoo.com
Dr. P.M. Kariuki, KFS tel 0722801309 @: pmkariuki@yahoo.com (eventually not met)
Director, Dr. William Omondi, KFSC/KEFRI, tel 0726333265 @: williamomondi2004@yahoo.co.uk
Training Manager Michael Mukolwe KEFRI 0733850391 @: michaelmukolwe@yahoo.com
Director Ben Chikamai KEFRI 0722157414 @: director@kefri.org
Pgm. Asst. Hudson Wereh, Infonet-Biovision, 0726395415 @:hudson_wereh@hotmail.com
Outreach Facilitator Njeri Kinuthia: Infonet-Biovision, 0724456420 @:
Consultant Anders Pedersen, Infonet-Biovision, 0734897796 @: anderspp@gmail.com
Coordinator Anne Bruntse, Infonet-Biovision, 0723822145, @: abruntse@ymail.com
Director David Amudavi, Biovision, tel 0717627098, @: damudavi@icipe.org
Anders Pedersen, Infonet-Biovision, 0734897796 @ anders_pp@yahoo.com
Samueli Mwema, Tree Biotechnology Pgm. Trust, Karura @ samuelimwema@gmailcom
Jennifer Ngige, KFS, tel 0722331690 @: ngigejw@gmail.com
Reuben Shanda KEFRI Wood Product Research Centre, Karura, 0721320562 @ shandaru@yahoo.com

Appendix D. Consultant's activities

Sat	28-Jan	Departure Jutland, arr. Copenhagen, collecting books at University
Sun	29-Jan	Departure Copenhagen Airport. Transit Cairo
Mon	30-Jan	Arrival NBO, lodging. Introduction to office, Check accommodation
Tue	31-Jan	Field visit in Machacos, Inauguration of Kilimo Kimwe
Wed	01-Feb	Visit KEFRI. WS resources. Collect material. Check in apt.
Thu	02-Feb	Work in Office. Program, Questionnaire
Fri	03-Feb	Questionnaire. Program. Check Infonet-Biovision Homepage
Sat	04-Feb	Examining PROTA4U database
Sun	05-Feb	Examining ICRAF database
Mon	06-Feb	Appointments with ICRAF/KEFRI. Emails, requests, logistic
Tue	07-Feb	Day at KEFRI and KFSC. Appointments, programme, etc.
Wed	08-Feb	Develop program
Thu	09-Feb	Day at ICRAF. Collect matr. Appointments, Seminar
Fri	10-Feb	Submit 1st program. Contact key persons
Sat	11-Feb	Study Tree database
Sun	12-Feb	1st draft of JRS proposal
Mon	13-Feb	Collect material, sort and document. Keynote speakers
Tue	14-Feb	Revise program. Communicate with keynote speakers
Wed	15-Feb	Meeting at Safari Park on Biotechnology (org. by AfDB)
Thu	16-Feb	Study additional material. Doing citations. WS Logistics
Fri	17-Feb	Revise program. Communicate with keynote speakers
Sat	18-Feb	Preparing WS lectures
Sun	19-Feb	Packing and move to KEFRI. Meet participants. Check facilities
Mon	20-Feb	WS Day 1 (refer to Program, Annex B)
Tue	21-Feb	WS Day 2 (refer to Program, Annex B)
Wed	22-Feb	WS Day 3 (refer to Program, Annex B)
Thu	23-Feb	WS Day 4 (refer to Program, Annex B)
Fri	24-Feb	WS Day 5 (refer to Program, Annex B)
Sat	25-Feb	Structure report. Follow up emails. Appreciations
Sun	26-Feb	Arrange and upload photos. Evaluation to KEFRI director.
Mon	27-Feb	Start drafting WS / BtO report
Tue	28-Feb	Questionnaires. Summary and conclusion
Wed	29-Feb	Start drafting WS / BtO report
Thu	01-Mar	Drafting Report
Fri	02-Mar	Debriefing at Icipe. Take into account comments.
Sat	03-Mar	Drafting Report. Packing down. Departure

Appendix E. Participants List + Individual Survey Score
➜

#	PARTICIPANTS' NAME	ORGANIZATION	REGION	Simu	Email	Questionnaire comments by Anders and Hudson	Score [16]
1	Margaret Kioko	Katumani farmers resource center	Machakos	0712530151	margaretkioko91@yahoo.com	Nothing received. Said to have not received instruction	♀♀
2	John Mutisya	Katumani farmers resource center	Machakos	0724621162	johnmutisya79@yahoo.com	Filled 20 questionnaires	♂
3	Anthony Musili	Katumani farmers resource center	Machakos	0714338198	musili.anthony@yahoo.com	Did 30 questionnaires	♂♂
4	Patrick Kimeu	Katumani farmers resource center	Machakos	0726692479	mutungakimeu@yahoo.com	Did 30 questionnaires. Lacked some info from I-B	♂♂
5	Joseph Mwaura	Kinangop farmers resource center	Kinangop	0717742147	mwaurajoseph96@yahoo.com	21 qu. filled and presented with the summary sheet	♂♂
6	Ednah Mwende	Wangige farmers resource center	Kiambu	0734191155		Filled 13 questionnaires and her work is very clear	♂
7	Benson Chegeh	Gilgil farmers resource center	Gilgil	0723504018	bensonchegekuria@yahoo.com	22 qu. filled. Summary sheet. Very genuine work	♂♂♂
8	Nellie Wambui	Gilgil farmers resource center	Gilgil	0703360100	**gcap2000@gmail.com**	23 qu. filled. No summary	♂♂
9	Sarah Mahaya	Lengo agricultural center	Eldoret	0716419993	sarahmahaya48@yahoo.com	Used summary sheet as questionnaire. 38 filled ticking in cells. No farmers' details provided on filled sheets	♂
10	Evelyn Onganga	Kisii farmers resource center	Kisii	0713560449	everlynemo@yahoo.com	Nothing received, no explanation?	♀♀♀
11	Dominic Ndunguya	Njabini farmers resource center	Njabini	0721385373	dntnet20002yahoo.com	9 qu. Presented in 1 sheet.	♀
12	Eunice Mwanyanya	MOA Kilifi	Kilifi	0722448354	sarumme@yahoo.com	Only a typed summary sheet. Did not understand the task. No filled questionnaires	♀♀
13	David Karanja	Organic Agriculture center of kenya	Muranga	0735427846	bio_farming@yahoo.com	Filled 20 questionnaires	♂♂
14	Sarah Karanja	Muranga farmers resource center	Muranga	0713212454	sarahkaranja57@yahoo.com	21 farmers. Summary sheet plus all qu. Job well done	♂♂

[16] N/A = not subjected to evaluation (not instructed prior to WS ♀♀♀ = totally unacceptable ♀♀ = unacceptable ♀ = almost tolerated ♂ = acceptable ♂♂ = good ♂♂♂ = mission completed to full satisfaction

15	Julius Murangiri	Foundation for young farmers	Meru	0716684121 0734076722	farmersfoundation@gmail.com	Que. not filled properly. How many were done ??	??👍
16	Geoffrey Juma	Samia [wetlands]	Busia	0721525689	**samiawetlands@gmail.com**	38 qu. filled. No summary sheet. Doubt data authenticity	?👍
17	William Buluma	S.I.N.G.I. [Busia]	Busia	0713332568	williambuluma@yahoo.com	28 qu. filled. No summary sheet. Doubt authenticity	?👍
18	Ruth Mutisya	Katumani farmers resource center	Machakos	0736767132	ruthmutete@yahoo.com	30 questionnaires filled. Summary sheet excellent	👍👍👍
19	Paul Muhuha	Kinangop farmer	Kinangop	0726020466	muhuhaaec@yahoo.com	Filled 20 questionnaires	👍
20	Alfred Amusibwa	itof	Webuye	0724331456 2	**itof7@organickenya.org**	18 qu. filled. Presented in summary sheet	👍👍
21	Peter Murage	itof	Kirinyaga	0724331375	itof2@organickenya.or	25 qu. meticulously filled. Summary sheet excellent. All sheets provided. Neat work	👍👍👍
22	Victoria Mutinda	itof	Kangudo	0724331405	itof@organickenya.org	Did 20 questionnaires	👍
23	Peter Kamau	Organic farmer		0721793759	pkamau@organickenya.org	did not attend workshop	N/A
24	David Njogu	Wangige farmer	Kiambu	0735552354		only attended 1 day and showed his nursery	N/A
25	Sammy Mututu	Machakos farmer	Machakos	0723950139	sammymututu@yahoo.com	Not asked to fill questionnaire	N/A
26	Julian Mutuku	Kitui farmer	Kitui	0711953342		Not asked to fill questionnaire	N/A
27	Joseph Makumi	KENVO, South abaderes	Kijabe	0722166989	makumijoe@gmail.com	6 qu. filled. Presented with summary sheet	👍
28	Thomas Mutuli	Rural Outreach Program [ROP]	Mbale	0727160840	thomasmutuli@yahoo.com	30 qu. filled. All documents presented. Good work.	👍👍👍
29	Thomas Masii	Muliro farmers [Kakamega]	Kakamega	0701422880	mulirufcg@gmail.com	20 farmers filled. Did well in given his young age and complication of task	👍
30	Esther Kiruthi	CSHEP [Kiserian]	Ngong	0727977009	cshep@gmail.com	Filled 30 questionnaires	👍👍👍
31	Kelvin Majani	ROP	Mbale	0716058714	Kelvin.majani@yahoo.com	No outcome?	???👍
32	Christine Njagi (KEFRI Agent)	Donconsult Ltd Greenken	Meru	0729716824	info@donconsult.org	Not asked to fill questionnaire	N/A
33	Joseph Twala	Seed sales Officer	KEFRI	0723500176	Joseph_twala@yahoo.com	Not asked to fill questionnaire	N/A
34	Grace Nyam-bura Kamanu	Seed Laboratory	ICRAF		g.kamanu@cgiar.org	Not asked to fill questionnaire	N/A

Appendix F.   Farmer Survey Results

Ref. #	No of farmers replying:					
	No answer	No interest	Little interest	Interest	V. high interest	Tot.
1. Species Choice	20	41	82	193	211	547
2. Plant origin (provenance, hybrid, clone, etc.)	28	68	89	171	176	532
3. Genetics and seed source	23	45	121	182	159	530
4. How to make and manage seed sources	13	33	124	188	187	545
5. Climate Change and Trees	3	39	99	162	230	533
6. Seed (collection, handling, storage, pre-treatment)	9	31	87	200	220	547
7. Fodder value	7	24	96	162	247	536
8. Medicinal uses / Trees and health	12	12	67	170	283	544
9. Trees and Culture	29	66	122	171	142	530
10. How/where to choose nursery?	10	30	99	209	194	542
11. Plant propagation (seedling, cutting, wildling, plantlet, etc.)	3	30	78	196	237	544
12. Nursery management	8	34	79	184	239	544
13. Tree improvement	8	48	75	219	190	540
14. Trees and Fires	21	61	150	170	128	530
15. Prices (wood, seed, seedling, charcoal, fuelwood, etc.)	3	30	137	182	173	525
16. Tree Uses	2	18	96	191	208	515
17. Market options	7	41	89	190	207	534
18. Wood products / wood quality	18	33	131	202	148	532
19. Tree climbing	52	165	130	91	93	531
20. Ways of Planting (design)	6	19	106	221	188	540
21. Planting techniques	7	20	82	237	191	537
22. Tendering young trees (weeding, roughing, pest control)	6	18	75	215	231	545
23. Tree management / Silviculture	7	31	80	207	210	535
24. Agroforestry models	8	20	104	173	232	537
25. Plantation (spacing, alignment, design)	10	30	145	205	155	545
26. Oil Production	29	82	104	133	185	533
27. Water (consumption, retention, watershed)	8	45	73	200	204	530
28. Drought impact	17	40	97	152	226	532
29. Trees and Climate	12	23	89	192	209	525
30. Wood fire value	6	57	147	186	134	530
31. Wood fire resistance	48	54	139	181	112	534
32. Fertiliser effects of trees	22	46	98	152	217	535
33. Soil improvement	2	14	59	176	285	536
34. Charcoal	40	104	152	124	112	532
35. Yield (seed, fruits)	8	22	92	188	225	535
36. Yield (wood)	12	31	139	172	178	532
37. Rotation age / Years until harvest	22	51	127	159	155	514
38. Revenue, costs, and profits by planting	23	46	118	178	150	515
40. Beekeeping	4	54	71	189	215	533
41. Mulching	8	35	81	212	182	518
42. Trees and Environment	4	13	65	190	241	513
43. Erosion control	9	15	53	195	245	517
44. Crop and Tree together (interaction)	10	19	78	146	199	452
	604	1738	4325	7816	8353	22836

Appendix G. Material screened

This section provides an overview and a start on information material relevant to Tree Planting in Kenya and East-Africa.

A. Databases:

Presentation of PROTA4U.com e.g. flooring for Kenya HQ in Wageningen), and branch: **Network Office Africa** C/o ICRAF, Nairobi, Kenya **Tel** +254 (0)20 7224782 E-mail: prota.kenya@cgiar.org Internet: www.prota.org	http://en.wikipedia.org/
ICRAF/DFID/EU/IFAD 2010 **Agroforestry Database** A tree reference and selection guide (ver. **4.0)** by Orwa C, Mutua A , Kindt R , Jamnadass R, and Simons A Information on the management, use and ecology of a wide range of tree species used in agroforestry **Distrituted to all delegates** --- *AP Comment: Useful, provided you know what species you are looking for. Strongly divided into exotics and indigenous. However, can impossibly make any species choice solely based on this database*	
On CD-rom from ICRAF **Distributed 30+ copies**	Online version http://www.worldagroforestry.org/resources/databases/agroforestree *Remark: currently updated but far from perfect when is comes to uses. No quantification or ranking of uses*

B. Databases not recommended:

From http://www.ecodiv.org/trapnell/trapnell.html
Potential Natural Vegetation for Central and SW Kenya. A tool for the selection of indigenous tree species

ICRAF and the Danish FLD adapted old vegetation maps to identify the best indigenous trees to grow. Species lists for each of the original vegetation types and obtained information on potential functions of each species from databases, literature and herbarium specimens from the East African Herbarium.
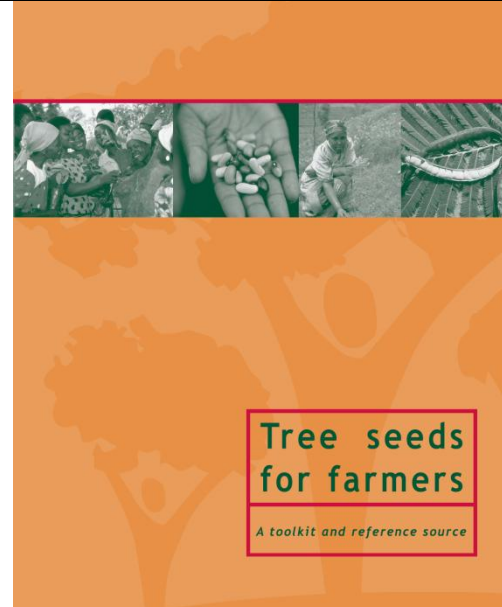
Comment: Useless for operational as well as development purposes. Difficult and tedious to use, very course maps with too many eco-zones. Only locally indigenous species will appear. Does neither reflect the present landscape, the vegetation, and the climate dynamics. Of mainly historic value.
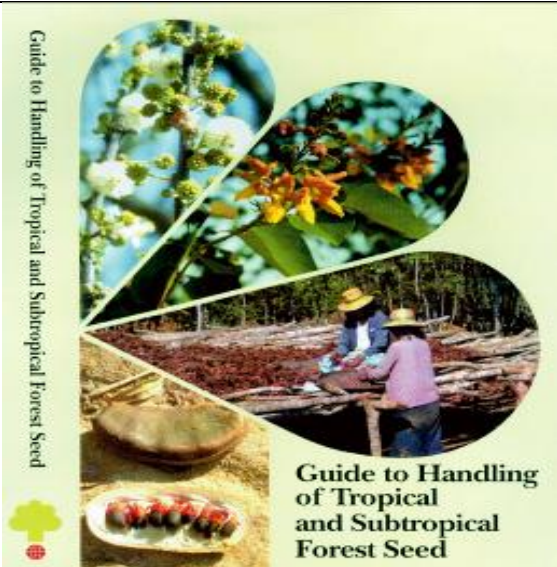
ICRAF's Rockefeller-database: "Useful Tree Species for Africa" tool claim to enable you to select useful tree species for planting anywhere in Africa using Google Earth

---

Comment: Newly launched in 2012. Difficult to use, ask for many programs, menus, and do not appear convincing. Useless for practice, for development use, and for any use that relates to present landuses. Can not select species from this. Promise too much, good for nothing. A show off thing for national herbarium use at the most

ICRAF Tree Database (on CD-rom) Older version. To be replaced by the new version 4.0
Distributed 15 copies

C. Seed Toolkits

<table>
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Tree seeds
for farmers

A toolkit and reference source

</td>
<td>

ICRAF 2006: Tree seeds for farmers: A toolkit and reference source. Kindt R., Lillesø, J-P. B. Mbora A., Muriuki J., Wambugu C., Frost W.,Beniest J., Aithal A., Awimbo J., Rao S., Holding-Anyonge C. Download the Tree Seeds for Farmers toolkit. 232 pages.
 English Version or: http://www.worldagroforestry.org/resources/databases/tree-seeds-for-farmers or: http://sl.life.ku.dk/English/outreach_publications/computerbased_tools/potential_natural_vegetation/~/media/Sl/Resultater_Outreach_Publications/Programmes/Potential_natural_vegetation/Toolkit.ashx (open as pdf-file!)

Comment by AP: Comprehensive, the state of the art reference book, entails many subjects. However, as it is not specific neither on species or methods, designs etc, it is too generic to directly operate from without local, additional knowledge

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Guide to Handling
of Tropical
and Subtropical
Forest Seed

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DANIDA Forest Seed Centre, Denmark. 2000 by Lars Schmidt **Guide to handling of tropical and subtropical forest seed.** Xxi+511 pp.

Download: http://curis.ku.dk/portal-life/en/publications/guide-to-handling-of-tropical-and-subtropical-forest-seed(04448600-8813-11df-928f-000ea68e967b).html

Comment by AP: The book entails all aspects of seed handling. An alternative to ICRAF toolkit. Very well written & inspiring

</td>
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Content by chapters:
Chapter 1: Introduction
Chapter 2: Seed Biology, Development and Ecology
Chapter 3: Planning and Preparation of Seed Collections
Chapter 4: Seed Collection
Chapter 5: Fruit and Seed Handling between Collection and Processing
Chapter 6: Seed Processing
Chapter 7: Phytosanitary Problems and Seed Treatment
Chapter 8: Seed Storage

Chapter 9: Dormancy and Pretreatment
Chapter 10: Germination and Seedling Establishment
Chapter 11: Seed Testing
Chapter 12: Genetic Implications of Seed Handling
Chapter 13: Microsymbiont Management
Chapter 14: Seed Documentation
Chapter 15: Trade and Transfer of Forest See Download individual chapters here:

Index of Botanical names. Appendix to the above book
16 hard-copies handed out

Winrock International 2003: Tree seed management. Seed sources, seed collection and seed handling. A field manual for field workers and farmers. TFRI Extension Series No. 152. Indonesia. 54 pp Download pdf
6 hard-copies handed out

Florabank guidelines; best practice for seed collection and use Download from Flora Bank

Tropical trees: propagation and planting manuals produced by Longman
  o   VOLUME 1: Rooting cuttings of tropical trees Download from FAO
  o   VOLUME 2: raising seedlings of tropical trees Download from FAO
  o   VOLUME 3: growing good tropical trees for planting Download from FAO
  o   VOLUME 4: preparing to plant tropical trees Download from FAO

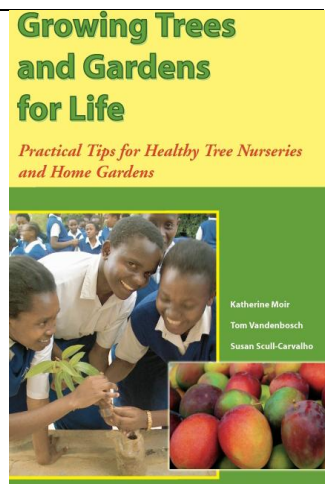Seed leaflets developed by the former Danida Forest Seed Centre Download from Forest and Landscape Denmark

D. Nursery manuals
  o   ICRAF 1999. Good tree nursery practices. Practical guidelines for community nurseries. Nairobi, Kenya. 95 pp. Download
Comments by AP: Fairly advanced, high quality. More universal, a bit academic. Not particularly tailored for Kenyan conditions. Vegetative propagation is lacking! Good section on how to conduct small experiments for ongoing improvement of plant quality
  o   ICRAF 1999: Good tree nursery practices. Practical guidelines for research nurseries. ICRAF Nairobi, Kenya. 90 pp. Download
  o   Business skills for small-scale seed producers produced by Soniia David and Beth Oliver Download from CIAT-Africa

•   RELMA 2003: Nasari za miche. Mwongozo wa wenye nasari kwenye vitongoji vya miji. By Caleb Basweti, Technical Report no. 3, 43 pages   **6 hard-copies handed out**
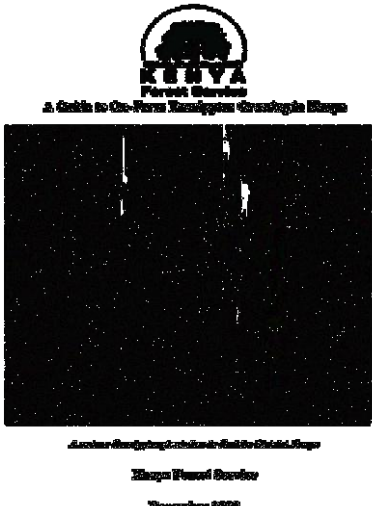
Jacaranda Designs Ltd 2007 and ICRAF 2007: Growing Trees and Gardens for Life. Practical Tips for Healthy Tree Nurseries and Home gardens. Nairobi.By Moir, K.; Van-den Bosch, T.;Scull-Carvalho, S. Flemish Association for Development Cooperation VVOB, Brussels Belgium, 88p.

Comments by AP: Extremely nice layout and product: inspiring publication, one feels like planting straight forward. Keywords: Growth; Gardens; Nursery raising; Home gardens; Silviculture. In Swahili as well as in English

Distributed to all delegates (more copies at I-B)

E. Literature

	To be uploaded: A Guide to On-Farm Eucalyptus Growing in Kenya (Kenya Forest Service 2009): http://www.wrm.org.uy/countries/Kenya/Eucalyptus_guidelines.pdf **Handed out 33 copies** The Eucalyptus – No more myths (in The Forestry & Wildlife News, vol. 4, June 2011), 2 pages http://www.forestryandwildlife.go.ke/wp-content/uploads/2011/07/Newsletter-FINAL.pdf

KEFRI /Japan 2006: SOCIAL FORESTRY TECHNIQUES - PART ONE Textbook for training course at Kitui Regional Training Centre. CD-rom (1 pdf.file)
KEFRI 2007: Thoughts and Practices in Social Forestry. PART TWO. CD-rom

Comments by AP: the CD roms are on hand. A bit outdated and of limited value but very much oriented to Kenya condition

F. Useful links

http://www.forestryandwildlife.go.ke/?page_id=243

The Tree Seed Suppliers Directory lists suppliers of seed and microsymbiont for over 5939 tree species.

Comments by AP: Basically a solid product and good reference. However, in reality difficult to use directly by seed users/ buyers as most suppliers would not react on minor requests. Seed business is not following traditional market patterns and relies more on contacts, trust, networks, etc.

The Botanical Nomenclature Database provides information on the correct taxonomy of trees, including synonyms and common names

The Slide Database allows you to search our collection of agroforestry images

The Tree Diversity Analysis - A toolkit and reference source analysing species survey data, including:
- Species accumulation curves for site-based and individual-based species accumulation, including a new technique for exact calculation of site-based species accumulation
- methods for investigating differences in diversity and evenness and methods of rarefaction to the same sample size for different subsets of the data.
- Modern regression methods of generalized linear models and generalized additive models that are often appropriate for investigating patterns of species occurrence and species counts
- Methods of ordination for investigating community structure and the influence of environmental characteristics, including recent methods such as distance-based redundancy analysis and constrained analysis of principal coordinates

The Molecular Markers for Tropical Trees: - Statistical Analysis of Dominant Data

FACT (Forest, Farm, and Community Tree) Network:
http://www.winrock.org/fnrm/factnet/factnet.htm

G. Contact Address

To ensure communities are involved in decision making, the CFA are represented in the board of the Kenya Forest service through Forests Conservation Committees (FCC) which also draws their membership from local authorities and other key stakeholders in forestry matters

Community Forest Associations (CFAs)
Forest Trees Nurseries Association of Kenya (FOTNAK)
Waumini House
1st floor Westlands
P.O. Box 64159 00620
Nairobi
Tel. 254 204 450 161, 254 734 887 772, 254 729 210 001, 254 770 100 474
Email: fotnak09@gmail.com

Kenya Forest Growers Association
Waumini House, 1st floor Westlands, P.O. Box 64159 00620, Nairobi
Tel. 254 734 887 772, 254 729 210 001, 254 770 100 474
Email: info@kefga.co.ke   Website: www.kefga.co.ke

H. Where to get quality plants or seed?

Quality seeds can be bought or obtained from authorized seed suppliers such as

KEFRI (contact- 0722157414/ Wireless: +254-20-2010651/2; email: kefri@nbi.ispkenya.com

1. Vi-Agroforestry Project
+254-57 2020386 Email: kisumu@viafp.org

2. Laikipia Tree seeds and Seedling Dealers Association (LETSSDA)
Michael Mugo/Timu Tel +254 721824333 / 0721996266 /0734452131

3 Kenya Tree Seed and Nursery Operators (KATRENSO)
John Mwangi British (Secretary) +254 734632476
Edward Mutitu (Chairman) +254 721809095 Beatrice Wanjiku Kiragu (Treasurer): +254 736447017/722250691   Gil Kamau +254 735744232

4 Green Zone Development Project
Mwanzia +254 2511222 / 2511299 jmwanzia@kenyaforestservice.org

5 Mt. Kenya East Pilot project for natural resources management - MKEPP
+254 068-31376 Email: pmu@mkepp.or.ke

6. Clone cuttings:
Head office/ Clone centre, P.O. Box64159-00620, Karura forest, Nairobi Tel +254 020 020641 & 0202519959   Email info@tree-biotech.com Web site: www.tree-biotech.com

Subcentres of TBPT:
Eldoret Centre -Tel: 0723 541 064, 0723541064 Next to Ndonyo lessos creameries- Eldoret
Email: tbpteldoret@gmail.com
Kilgoris Centre-Tel: 0731640623, 0731640623, DFOs office, Kilgoris- Transmara District
Email tbptkilgoris@gmail.com

Gede Centre-Tel: 0735 819 909, 0735 819 909, KFS/KEFRI Office Gede – Malindi
Email tbptgede@gmail.com

Meru-Tel: 0725 886 014, 0725 886 014, DFOs office - Kinoru Meru Centrel
Email:tbptmeru@gmail.com

Lamu Center-Tel: 0717 705 042
Saba Saba village (Lamu)   Email: tbptlamu@gmail.com

I. Other material distributed

Presented by Anne Mbora, ICRAF, on 22/2-2012 (**Copies to all:**)
ICRAF 2008: Growing high priority fruits and nuts in Kenya: Uses + management. 59 pp.
ICRAF 2008. Good Nursery Practices in Kenya : a Simple Guide. Nairobi. 36 pp.
ICRAF 2009: Tree seed quality guide. Nairobi. 28pp
ICRAF2012: Seed Dormancy, Simple Pre-sowing treatment 2012

ICRAF Policy Briefs: www.worldagroforestry.org/our_products/publications/
Afica' Biocarbon experience
Green fertilizer can boost food security in Africa
Trees on farms: tackling triple challenge of mitigation, adaptation and food security

RELMA 1994: Agroforestry Extension Manual for Kenya. By Bo Tengnas. Excerpt of 143
pages: 45 pages photocopied in handout **Distributed to all**

RELMA 1992: Agroforestry Extension Manual for Eastern Zambia. By Bo Tengnas. Excerpt
of 100+ pages: 15 pages photocopied in handout **Distributed to all**

Not yet distributed (priced 850 Ksh/book) KEFRI 2004: Tree Seed Hand Book of Kenya
(2nd edition) by Omondi et al. 284 pages

KEFRI 2009: Mitigating Climate Change in Africa through Social Forestry 20 pages

KEFRI 2009: Tree Seed Collection, Handling, and Seedling Production. Training and
Reference Manual, A4 size, 21 pages

Appendix H.   WS Photo Safari ✦

Appendix I. Farm Seed Contract with KFSC

KENYA FORESTRY RESEARCH INSTITUTE

CONTRACT FOR SEED PRODUCTION

This contract is between the Kenya Forestry Research Institute hereby referred as the contractor and

Ms/Mr...hereby referred to as the Producer

P.O. BOX................................Tel...

County................................Location..

Whereby both parties agree that the Producer shall provide seeds to the contractor according to the following specifications

Species..

Provenance...

Quality Standards: Minimum germination..............%   minimum purity......................................%

Purchase price Ksh. ..../ kg

Signed...................................Date...

Name (Producer)...

Signed...................................Date...

Name (Contractor)..Official Stamp.....................................
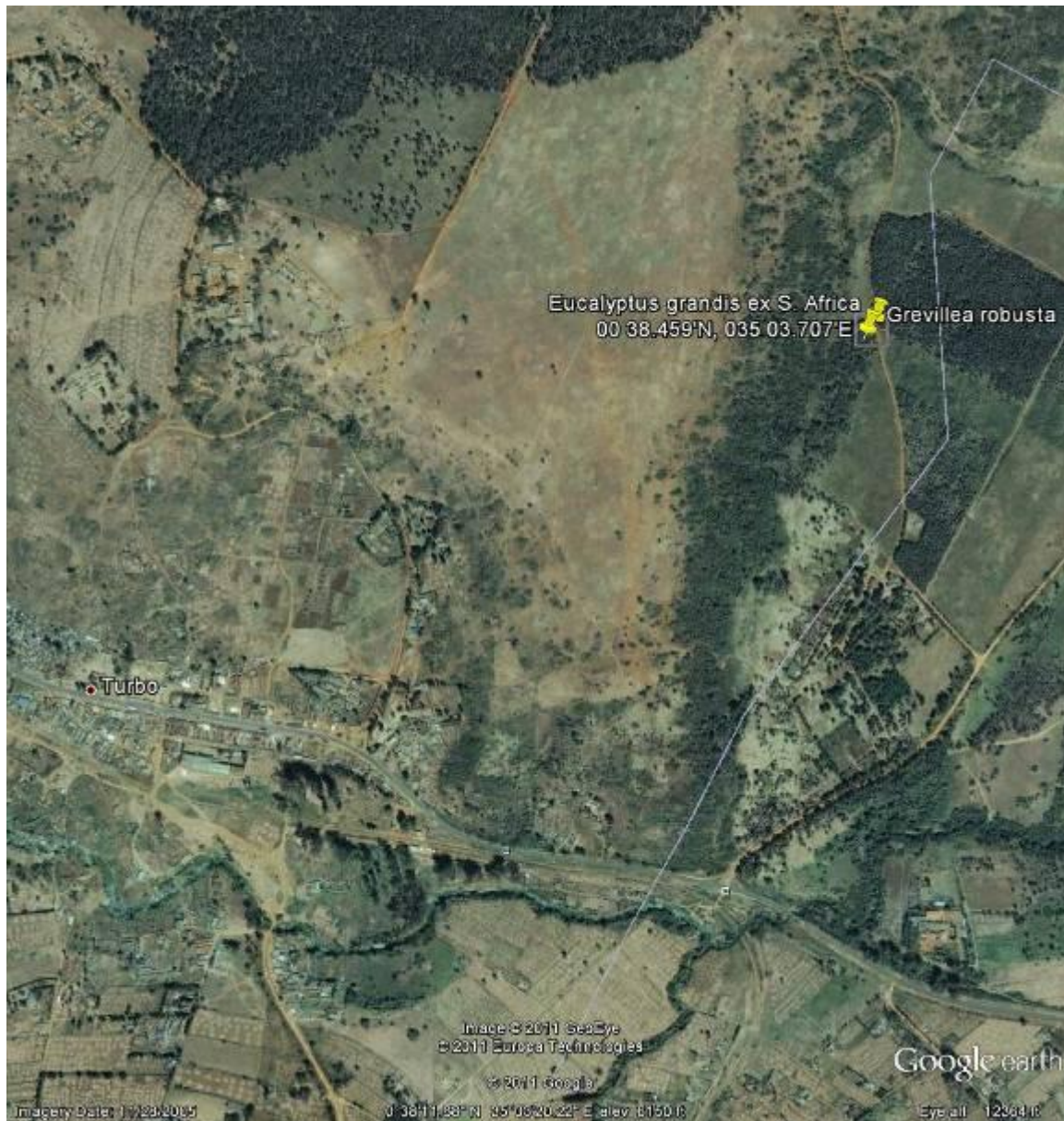
Terms and conditions of contract

1. KEFRI shall be responsible for the inspection, evaluation and registration of the seed source and provide advice on management and methods and time of collection.

2. The Producer shall ensure security of the seed source and all seeds collected from the source before delivery to the contractor.

3. The Producer shall notify the contractor when the seeds are ready for delivery to the nearest KEFRI Regional Center and Sub-Centers.

4. Payment of the delivered seeds shall be made within 30 days after receiving and upon completion of various physiological tests to determine their quality

5. Any seed lot, which fails to meet the standards as agreed to in this contract, shall be returned to the producer and KEFRI having no obligation of meeting the incurred costs of production or will be subject to a re-negotiated agreement.

6. The Collector is free to monitor the testing process of the delivered seeds at the KFSC laboratories and nurseries

7. In the event of a dispute arising from this contract, the matter shall be referred to the Tree Seed Advisory Committee for arbitration

Appendix J. Seed Sources on Google Earth

Examples of KFSC photo register of seed sources, here of Grevillea robusta and Euc. grandis at Turbo in Kakamega county 00°38.459'N 035° 03.707'E at 1849m

Appendix K.   Forest Field Schools Concept

Concept and characteristics (By Anders Pedersen)

FoFSs are a method to demonstrate, innovate, and implement techniques and capacitate communities for more specific and for better forest management

- **A school class with no walls**
- **Local community are teachers**
- **Innovative elements**
- **Learning by doing (species selection, roughing, selective thinning etc.)**
- **Showing by doing – seeing is believing!**
- **Participatory natural resource assessment (PNRA)**

Photo 2: A Forest Field School in Vilindwe, a village near Songe the district capital of Kilindi district, Tanga region, Tanzania. Some 25 farmers and pastoralists listen to directives, guidelines, share experience and views. Nov. 2007 (EnviroCare)

Photo 3: The Forest Field Schools can be mobile. Important is on the spot presence with provision of specific recommendations and showing by doing. On the picture, trainers prove their own recommendation by doings in the surrounding target area. Kilindi, Nov. 2007 (EnviroCare) Tanzania