



**KENYA FORESTRY RESEARCH INSTITUTE
KITUI REGIONAL RESEARCH CENTRE**

Embu and Mbeere Group representatives' Training



Stakeholders' Training Report on Bamboo Use, Propagation and Management

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STAKEHOLDERS' TRAINING ON BAMBOO PROPAGATION, USE AND MANAGEMENT

Introduction

Kitui Centre started undertaking propagation of bamboo from culm cuttings in 2007/08 financial year. Establishment of Bamboo demonstration farms was started in November 2008. In 2011, the Centre started training farmers and other stakeholders on how to bamboo propagation, use and management in the farms. The Centre was able to train more than the one group targeted in the performance contract on bamboo. Most of the stakeholders trained were farmers representing various Self Help Groups, Farmer field School groups, Focal development area and community forest Associations. Other stakeholders trained were officers from the Ministry of Agricultural, Kenya forest Service and NEMA most of them being facilitators of study tours and other types of training. This training report mainly addresses training done for Embu and Mbeere group representatives. The participants were having a study tour of Mwingi and Kitui Districts and the bamboo training session involved demonstrations on bamboo seedling production in the Centre and a visit to bamboo field demonstration trial in Kisasi. A total of 24 farmers were trained as per list of attendants in Appendix 1.

Bamboo training for Embu and Mbeere Groups' representatives

Farmers from Embu and Mbeere Districts representing different Focal development Areas, community Forest Associations, Farmer Field Schools and other organizations were trained on bamboo uses, propagation and management on 3rd February 2011 at the Kitui Centre nursery. A field visit was made to the Bamboo river bank protection demonstration farm of Masila Kindiiu in Kisasi division in the former larger Kitui District.

Propagation steps demonstrated in Kitui Centre Bamboo Nursery

A thorough training was done for Mbeere and Embu farmers in Kitui Centre Nursery. Most of the photographs of the participants except for cover page and plate 5 are lacking in this report due to a technical problem with the camera used during the training. However, all technologies demonstrated had been photographed separately hence attached in this report to show content of the practical demonstration made to the farmers during the training on seedling production in the

Centre Bamboo nursery. Preparation of cuttings from bamboo culms and laying them down in beds in the nursery was done as shown in plate 1 below.



Plate 1: Culms cut into pieces with quadruple nodes

Use of sand to cover the culms and spraying the cuttings with termiticides and fungicides was demonstrated as shown in plate 2 below.



Plate 2: Spraying bamboo culms with chemical and covering with sand

Using culm cuttings which had developed roots and shoots, first splitting and replanting of culms for further multiplication of the bamboo cuttings was demonstrated in plates 3 and 4.



Plate 3: rooted culm cutting ready for first splitting demonstrated



Plate 4: First splitting of rooted cuttings demonstrated



Plate 5: Split seedlings shown to participants



Plate 6: replanting of split seedlings for further multiplication demonstrated

Embu and Mbeere farmers' training evaluation feed back

The farmers filled evaluations forms from which it was noted that 35% of the participants were females and 65% were males. Further analysis of the evaluation forms revealed that most of the participants were representatives of 7 Focal Development Area groups, 2 self help groups, one community forest Association and One Farmer Field School groups. Other participants were facilitators from National Environmental and Management Authority and Kenya Forest Service.

The organizations/groups represented by the participants in Appendix I are listed below:

1. Ikega Youth Self Help Groups
2. Kianjiro Community Forest Association
3. Ndurumori Focal Development Area
4. Kamarandi Focal Development Area
5. Mbeere Focal Development Area
6. Kimathimba Focal Development Area
7. Siakago Farmer Field School
8. Karia self help group –
9. Ntawa Focal Development Area
10. Kianjeru Focal Development Area
11. Mukwii Focal Development Area
12. Kenya forest Service
13. NEMA Mbeere

The levels of prior knowledge on bamboo propagation, use and management were indicated as poor by 22.7% , very poor by 18.2%, fair by 22.7%, high by 9.1%, and very high by 27.3%. Most of the participants indicating high level were KFS and NEMA officers and very few farmers. Irrespective of high level of prior knowledge on bamboo subject, most of the participants (78.3%) indicated to have gained new knowledge on bamboo propagation, uses, nursery establishment and management. All the participants indicated that their interests on the bamboo training had been met. As concerns the extent to which their interests were met, 85% of the participants indicated very well and 15% of them indicated moderately.

The farmers expressed what they expected to learn about bamboo in the future as outlined below:

- Marketing and value addition (47.6%)
- Facilitation of products (33.3%)
- Propagation of different types of bamboo (14.3%)
- Large scale propagation (4.8%)

The participants expressed desired actions after trained as:

- Starting bamboo nurseries (73.9%).
- Sharing knowledge and skills gained with other farmers (17.4%).

The participants commended that bamboo training be provided to more farmers to enhance river bank protection in the dry lands. They also recommended that a follow up on the training be made to encourage the farmers trained to implement actions proposed such as bamboo seedling production. They also requested that farmers in their areas be provided with seedlings to plant in the farms along river banks.

Conclusion and recommendations

Farmers are highly interested in engaging in bamboo seedling production for planting in their own farms and also for commercial purposes. However, very few farmers have knowledge and skills on how to produce bamboo seedlings. Therefore as recommended by farmers and other stakeholders trained over this period, it is important for KEFRI to extent this training to more farmers and other stakeholders such as KFS staff working in the nurseries not only in the dry lands but also in the highlands where a variety of bamboo species are known to perform very well. Farmers and stakeholders from other government ministries consent to the fact bamboo has a great potential of enhancing income generation for farmers as it does not take as long time as indigenous and most exotic trees to mature and be ready for use.

Requests for bamboo seedlings to be planted along the river banks by farmers in Embu, Mbeere and other districts in the Eastern region are increasing. Therefore, it is necessary for training on bamboo propagation to be followed up by training of carpenters and other entrepreneurs on use

of bamboo for furniture making and other commercial uses to ensure that farmers have a ready market for bamboo culms in their local market.

Farmers and other stakeholders who are knowledgeable and have experience on use of bamboo are also requesting for further research on preservation of bamboo raw materials (culms) against beetles that have been observed as very destructive making the bamboo furniture to be short lived. KEFRI Karura has been undertaking this research and should avail the information to the trainers for dissemination to the farmers and other stakeholders.

Appendix 1: Embu and Mbeere Groups' Bamboo training Participants

- 1) Thomas Irungu
- 2) Peter Kioko
- 3) John Njue
- 4) Agnes Kaluki
- 5) David Nthiga
- 6) Juliana Mbandi
- 7) Evantus Mugo
- 8) Mercy Nguku
- 9) Dorcas Njoki
- 10) Lucy Ndegi
- 11) Liza Njoki
- 12) Nellias Munyi
- 13) Lilian Mbuya
- 14) Nicasio Njiru
- 15) Nancy Njeri
- 16) Nancy Njeri
- 17) Jeremy Nyaga
- 18) David M. Ngurungu
- 19) Ann Muchungu
- 20) Simon N. Fecisio
- 21) Silas Muturi
- 22) Saravina Wambui
- 23) Martin Kahiga
- 24) Earnest Muturi