



Essential Oil Crop Production in Private and Community Forest Land

Background

Nepalese farming system is dominated by subsistence family farms. There is a need to increase per unit return to minimize food insecurity, but farmers cannot always take risk of switching to new crops. Although community forest is taken as a successful model of community engagement in the conservation and management of natural resources, it remains underutilized in its economic potential. In this context, the Initiative for Agriculture Productivity and Commercialization (IAPAC) project implemented by ADRA Nepal in mid-west Nepal took a different approach to creating income opportunities for households who have inadequate land for commercial agriculture by engaging them in farming essential oil crops in community forestland and facilitating market linkages to enhance their livelihoods.

Issues/challenges

The project promoted fresh vegetable production as an income generating opportunities for rural farmers. However, there were number of households who owned very little land for vegetable farming. The prospects of off-farm income opportunities were also very limited in the project area and there was a chance that this section of community would be excluded from income opportunities. Further, the perishability of fresh vegetables did not make it a suitable option for remote areas where market is not readily available.



Picture 1: Plantation of Citronella in CFUG land

Methodology/Interventions

Dialogue with community forest and formation of essential oil producer group:

The project held a series of discussion with Community Forest User Group (CFUG) and facilitated the formation of 13 essential oil groups comprising 407 HHs. The majority of group members were women from Dalit, Janjati and Madhesi backgrounds.

Revising the operation plan of community forest:

The project facilitated a series of meetings and discussions with CFUG and also provided technical support to revise the operational plan including a provision to grow essential oil crops in close coordination with District Forest Office (DFO). Wherever CFUG did not exist, the project also facilitated the registration of CFUG with the DFO.

Capacity building training: These groups were provided capacity building training on technical aspects of essential oil farming and basics of cost-benefit analysis which included among others; nursery raising of Palmarosa and Chamomile, sucker production of Mentha, and cultivation of essential oil corps including Palmarosa, Mentha, Chamomile, Citronella and Lemongrass.

Demonstrations of essential oil crops production: In order to build the confidence of farmers in essential oil crop farming, the project supported the demonstration of production technology of different essential oil crops. These demonstration sites also served as training and learning ground for farmers.

Distillation unit (DU) establishment and capacity strengthening: The project supported the establishment of two new DUs and helped to improve the processing system of 9 existing DUs in collaboration with District Forest Office and District Development Committee. A comprehensive business plan for operation of the DU was facilitated and post-harvest training (quality control and storage) was also provided.

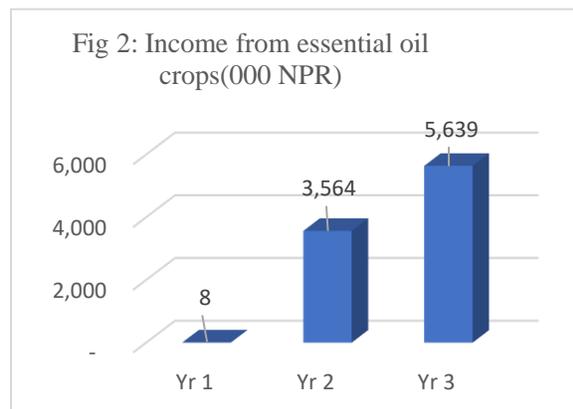
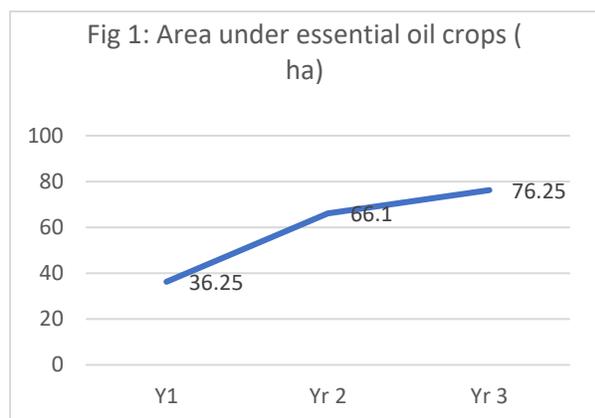
Market facilitation: A number of meetings were organized with essential oil traders based in Nepalgunj and the visit to trade fair in Nepalgunj and Kathmandu was organized to link DUs with traders.

Change/Results

Benefits from this practice were seen among target groups within 5 to 9 months of implementation. This was due to growth/harvesting periods of the essential oil crops selected for plantation. Within three years of the project, the area under essential oil crops increased by more than two-fold.



Picture 2: Distillation Unit established by Sadabaha CFUG, Fattapur, Banke



- Access to oil distillation facility improved and loss of oil yield due to long waiting periods reduced and 840 HHs directly benefitting from DUs
- Essential oil producers have generated an income of NPR 9,216,398 (€83,700) during the project period

Box 1: Quantity of essential oil produced and revenue generated by Sadabahar essential oil group/distillation unit

Crops	Oil produced (Kg.)	Sale value (NPR)
Mentha	192	288,000
Citronella/ Lemmon grass	44	79,200
Chamomile	0.5	24,000
Eucalyptus	8	16,000
French basil	3	15,000
Total	247.5	422,200

In addition to the essential oil, hydrosol which is a byproduct could be sold to phenyl/soap manufacturers to generate additional income. Since this practice provided income to previously subsistence farming women, it empowered them to make financial decisions. There was agreement among stakeholders that this practice was an effective way to maximize community resource utilization and that it had a positive environmental impact by preventing degradation from open cattle grazing.

Constraints

Since smallholders have limited ability to take risk, it is hard to generate their interest at the beginning. However, adoption rate increases once people start to see real economic benefits of essential oil production. Farmers have little technical knowhow as public extension advisory is not available for essential oil crops. Despite having a promising export potential, access to premium market is difficult due to volume, quality and certification issues.

Lessons learned

This practice delivered results however, the lessons that were learned through which impact could have been further enhanced were;

- Synchronization of essential oil production with market needs was needed to further improve benefits
- Citronella, Palmarosa and Lemongrass are hardy crops for CFUG land and Mentha and Chamomile for irrigated crop land
- Improvement in quality and storage mechanism was required to respond more effectively to export market demands
- Product diversification and lengthening of production season required for the utilization of distillation units for its sustainability
- Collective marketing offered bigger volume to large buyers. However, fix priced contract is not enforceable due to possibility of breaching contract by both parties in case of price fluctuation

Case 1: We will not have to travel to India to buy mentha suckers



Picture 3: Farmer Mr Chaudhary in his mentha farm

I am Khoj lal Chaudhary of Phattepur VDC -7, Sarri, Banke. I am the chairperson of Sugandha essential oil producer group. I got a training on mentha sucker production from IAPAC project. Previously, we had to procure mentha suckers from Indian markets and did not have knowledge on the production of mentha planting materials. After the training, I planted 3900 mentha tips on 1.5 kattha (500 sq m) of land. Mentha tips were supported by the IAPAC project.

I was able to produce 250 kg of mentha suckers and earned NPR 8000 (€ 73) by selling the suckers to mentha growers in first year. In the second year, I earned NPR 20,000 (€182). I am expecting to earn more than the past years this year. This has become an important source of

income for me. As mentha suckers are locally available, farmers are saving time and money by no more travelling to Indian markets to buy mentha suckers.

Sustainability and replicability

The sustainability of intervention was ensured through community participation right from the planning stage. The project contributed was only 30% of the total cost of plantation and rest was raised by community. The DUs were established in collaboration with government agencies and CFUG ensuring their support and ownership. DUs have developed the business plan with a system of usage fee for processing services which will be used to pay the operator and future maintenance cost. In addition, DU maintenance and equipment knowledge was provided to the operators and community. The plantation of essential oil crops in barren and unused community land provided environmental benefits by conserving the forest against open grazing. Although the market price can fluctuate, relationship between producers and buyers has been established through regular dialogue and development of trust.

There is an abundance of community forest land which can be potentially used for essential oil crop production. On the other hand, varied agro-climate and biodiversity is ideally suited for growing almost all essential oil species. The Nepali labor market is also predominantly agricultural based and includes a significant number of landless/smallholder farmers. Together with the fact that essential oils are, one of the most important commodities exported from Nepal and command a high value for a low volume of product creates a great opportunity for efficient up-scaling. Essential oil produced in forest land is organic by default and an internationally recognized certificate/quality seal would allow higher pricing and access to additional markets including premium international markets provided there is a coordinated effort from private and public sector to access this market.

Conclusion

Experience of IAPAC project shows that essential oil crops can be an important income and employment generating opportunities for smallholders and landless HHs as the barren land within community forest can be utilized for their cultivation. It has to be embraced as an income option by stakeholders and public extension services in technology transfer would encourage more producers to engage in essential oil crop production. A more secure and more profitable market linkage could be switching to organic products and supplying to premium market. However, ability to supply required volume consistently and complying with quality standards would be mandatory preconditions to operate in a well-coordinated supply chain.

For further information:

ADRA Nepal Country Office, Sanepa, Lalitpur, Nepal
Phone: (+977)-1-5555913/14; Fax: (+977)-1-5554251
Email: info@adranepal.org; Website: www.adranepal.org

Published Date: February 2019

This document is the product of Initiative for Agricultural Productivity and Commercialization (IAPAC) Project funded by European Union and Austrian Development Agency through ADRA Austria and implemented by ADRA Nepal and iDE Nepal in partnership with BASE, DECOS, SAPPROS, AEC and Renewable World.

