

## Mentha Cultivation: A permanent solution for Crop damage by wildlife and livelihood of indigenous people

Nepal  
Rabin Kadariya



**Organization type:**

nonprofit/ngo/citizen sector

**Budget:**

\$10,000 - \$50,000

Website:

<http://www.ntnc.org.np>



- [Biodiversity](#)
- [Community development](#)
- [Conservation](#)
- [Economic development](#)
- [Income generation](#)
- [Sustainable agriculture](#)
- [Wildlife conservation](#)

Project Summary

Elevator Pitch

**Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.**

Very high levels of crop damage due to growing number of wildlife especially rhino, elephants and deer species, have been recorded in Bardia that causes food scarcity and build negative attitude towards the conservation of wildlife and biodiversity. Dhahal in 2001 recorded crop losses ranging from 35 to 76% by wildlife in the area. In 7 years, 1792 claims of crop damage by local people. The estimated annual value of crop-loss ranged from 50 USD to 180USD per houses depending upon distance from park's border. Mentha is an aromatic crop, not preferred by wildlife and totally safe from the wildlife. Our pilot project shows that the income from this crop is three times more than that of traditional crops. Adoption of mentha crop co-exist the human and wildlife in sound environment.

About Project

**Problem: What problem is this project trying to address?**

Surrounding the southern edge of the park is a buffer zone, created in 1996 to support the conservation of the park whilst also providing benefits to the buffer zone inhabitants. It is 327 sq km and has a population of about 120,000 in 15290 households from 17 VDCs. It is a physical designation of the interdependent relationship between the human population and the park; the population in the buffer zone are dependent on natural resources (for growing crops, grazing cattle, fuel and building materials etc.) and also suffer the effects of human wildlife conflict for example crop raiding by elephants, rhino, monkey, wild boar, ungulates, antelopes and birds. The population density in the terai is obviously high as compared to the hilly region of Nepal. After the eradication of malaria lots of hill peoples migrate from the hill and started to cultivate agriculture crop with the massive destruction of forest resources. As compared to other terai region the population of Bardiya district is high as its land is more productive for paddy and other cereal crops. Now, Bardiya has a mixed hill (known as pahadi) and tharu population who are known as the indigenous of terai as they have immunity power for malaria. In the 2001 census, 53% of people in Bardiya district identified themselves as tharu (indigenous people). A pernicious system of bonded labour known as Kamaiyas are also lived in the communal and forest land after government of Nepal declared the free from the land lord, however many ex-kamaiya now suffer the problem of being landless. Tharu, ex kamaiya and the so called untouchable cast from the hill migrants have small amount of land for their subsistence farming. Most of the people living around the park are illiterate and poor and their own cereals crops cannot fulfil for the whole year. As, they plant cereal crops (mainly rice, wheat, corn, potato and lentil) which are damaged by the wildlife. Sometimes the paddy crops planted in the rainy season destroy by the flood. They perceive negatively and consider the park as being only preserved for the wild animals that are no use of them. The conflicts that result from the destruction of crops and damage to property are serious conservation issues both in and outside the park. As the increase in human population and expansion of agriculture land for the settlement of landless people and ex-kamaiya foster the more crop depredation by the wildlife. This will raise serious dispute between local people and the park for the conservation of wildlife. On one hand, damages in a small extent may affect them seriously; on the other hand people who suffered from these damages are not getting compensation what they have actually lost. Different study in the buffer zone showed that total traditional agricultural crop depredation in terms of economic value is high. So minimizing the conflicts between local people and park is essential for the long run success of any conservation program. That's why it is time to change the cropping pattern and the replacement of traditional crops with unpalatable crops like mentha, camomile, lemongrass and other aromatic plants.

**Solution: What is the proposed solution? Please be specific!**

This project aims to mitigate crop damage by replacing the traditional crops with unpalatable crops like mentha which has high economic value. Previously, all project implemented different income generation activities for the local people but cannot mitigate the human wildlife conflict because they encourage those income generation activities which is more preferred by the wildlife. Different methods and tools were used in different times for the conservation of biodiversity in the protected areas; still people are not motivating and hesitate to take guardianship towards the park. This project is innovative for the conservation of biodiversity and livelihood enhancement through the cultivation of unpalatable aromatic crops. Side by side conservation education is also effective through innovative solution techniques. Only conservation education is not effective as people also raise the question what is the use of the conservation without any mitigation measures of the problem what they faced. This is demand driven and market oriented project with development of park ownership for the conservation of the flora and fauna as well as the critical ecosystem. As people were convinced from our pilot project it is the best solution to get rid of crop depredation by the wildlife.

**Impact: How does it Work**

**Example: Walk us through a specific example(s) of how this solution makes a difference; include its primary activities.**

ApproximateThis project focuses on: (1) the provision of the solution for the crop depredation, (2) the mitigation of human-wildlife conflicts, (3) the improvement of the economic condition of indigenous people, and (4) awareness raising for the biodiversity conservation of national park by providing knowledge on its importance. As a resolution approach, growing alternative crops that are unpalatable to wild animals, like mentha (aromatic crops for producing essential oils). As well as the plant is a profitable crop. Initially 500 farmers will be selected from 5 settlements where crop damage is severe, based on our crop damage assessment database. Before implementing project community groups are aware on its importance with the active involvement of stakeholders. After the selection of farmers, annual and five years cultivation plan will be prepared. Required seeds or sucker will be provided as farmers are going to adopt new crop first time. Field level training will be organized for the proper cultivation and harvesting of crop. Similarly toolkit will be prepared and distributed to each farmer. For the distillation of its oil five community based multipurpose distillation unit will be established. Further materials on mentha and other medicinal plants were distributed to massive cultivation of mentha and improve the quality of oil. In order to sell mentha oil, market promotion and coordination workshop will be organized among the traders, cooperatives and farmers. In order to disseminate the knowledge, understanding and engagement of the local community, education sessions regarding conservation of wildlife and natural resources will be organized. More than 4000 community members and school students will be participated in those sessions where jungle visit, video show and participatory sessions will be arranged. Twenty eco club formed around the school of the park boundary will perform the different activities such as street drama, quiz contest, conservation songs competition, celebration of world environment day, wetland day, biodiversity day etc. to disseminate conservation message to the local communities and school students. Similarly, eco teacher workshop will held with the active participation of eco-teacher form the local schools by considering their active role for the delivery of conservation message to the students.

**About You**

**Organization:**

National Trust for Nature Conservation (NTNC)

**About You**

**First Name**

Rabin

**Last Name**

Kadariya

**Twitter**

**Facebook Profile**

**About Your Organization**

**Organization Name**

National Trust for Nature Conservation (NTNC)

**Organization Country**

NP

, BH

**Country where this project is creating social impact**

, BH

**How long has your organization been operating?**

More than 5 years

**Is the project that you are entering related to this organization?**

Yes

The information you provide here will be used to fill in any parts of your profile that have been left blank, such as interests, organization information, and website. No contact information will be made public. Please uncheck here if you do not want this to happen..

Innovation

**What stage is your project in?**

Operating for 1 5 years

**Share the story of the founder and what inspired the founder to start this project**

Recognition is growing that the successful management of protected area ultimately depends on the cooperation and support of local people. In parks where mammals and birds population have expanded and there are no enough grasses in dry period, these animals often pose severe threats to local people's crops. Crop raiding and predation by park wildlife may further increase the problems of securing a sustainable livelihood for people living next to these areas. In addition, guarding and the construction and maintenance of other protective measures like electric fence bear heavy indirect cost owing to time and financial investment involved. To minimize crop damage, Mentha crop was started after seeing the ineffectiveness of electric fence and other protection measures. Farmer received the total crop as this crop is totally safe from wildlife except the minor damage from trampling. Now the farmers and wildlife are mutually benefited. Some expressions of mentha founder farmer are:

"I saw my neighbours earning good money from Mentha and decided to start this farming. Mentha farming is very good. The best. I've just sold some for a very good price. And the wild animals don't come in my field. It definitely changed life for my family. I can buy some modern technology and health and education. If you do something and work hard, the effort will be paid back". Ram Krisna Chaudhari

Social Impact

**Please describe how your project has been successful and how that success is measured**

NTNC implements its activities by giving focus on human welfare, biodiversity conservation, people participation, transparency and demand driven. It also gives especial focus on high level stakeholders for the successful completion of project. We also regularly update database for the assessment of project and learning to replicate such program in other areas. Buffer Zone User Groups are implementation organization whereas Buffer Zone Management Committees and Buffer Zone Management Council put ahead for the coordination and participation of other stakeholders to sensitize the project. The major partner is Bardia National Park which is governmental organization for the conservation of biodiversity at Bardia. In each and every step of activities, Bardia National Park, NTNC and BZMC and its subsidiaries committees are involved. Still most of users and school students are unknown about the importance of conservation. Conservation education sessions built strong commitment towards the conservation. Our joint monitoring explore new modality and guardianship towards the user groups and ultimately to farmers. Conservation of biodiversity is challenging job thus. NTNC gives emphasis on community's needs and wildlife damage issues to motive local people for the conservation of biodiversity and endangered species in nature. A coordination workshop will organize to share the project objectives, its role in biodiversity conservation, targeted communities and budget. Feedbacks and comments will be incorporated while implementing project. Some indicators are fixed to measure the success of the project.

1. Number of farmer involved in the commercial mentha cultivation
2. Area of mentha cultivation per farmer
3. yearly income from the mentha cultivation (production in litter)
4. No of distillation plant installed
5. Community contribution for the installation of distillation plant
6. Sustainability of distillation unit
7. Neighbouring farmer's motivation and enthusiasm for mentha adoption
8. Yearly expenditure and living standard of local people.
9. Amount of crop depredation by wildlife
10. People motivation toward wildlife sympathy and Biodiversity Conservation
11. No of student and community member's involvement in conservation activities.
12. Market of products.

**How many people have been impacted by your project?**

1,001- 10,000

**How many people could be impacted by your project in the next three years?**

1,001-10,000

**How will your project evolve over the next three years?**

Farmers who are supported in the initial year will provide the suckers to the other members and neighbouring group in the next cropping season. Newly enter farmers use the same distillation unit with nominal charge which goes to the community fund. As the proposed distillation unit is multipurpose, other aromatic pants can be distilled so the project has aimed to diversity the alternative crops in different seasons such as chamomile, lemon grass, French basil, Indian basil. The existing wild herbs leaves are also harvested in sustainable way to produce the oil. For the extraction of wild herbs pro-poor users groups are involved so that the landless people will be benefited in the next year.

**What barriers might hinder the success of your project and how do you plan to overcome them?**

Mentha has a powerful role for protecting from wildlife, but it can grow only during winter and spring seasons, so that it is necessary to promote other unpalatable crops such as chamomile, lemon grass, citronella, marigold, sacred basil for the minimization of annual crop damage and optimum utilization of distillation unit. Multipurpose distillation Unit made from steel seems to be beneficial for crops diversification and quality of oil. Lantana camera, an invasive species, which hinders the growth of forest and grassland, can be used as fire for distillation unit. It helps to maintain the better vegetation condition of community forest. The only risk that will be occurred through excessive mentha cultivation, soil quality would be worse which can be managed by adding sufficient farmyard manure and rotational cropping. For the food security in local level, aromatic crops should be promoted only in those lands which lies contiguous to the park boundary and where crop damage by wildlife is severe.

**Tell us about your partnerships**

Before implementation of project, series of the interaction and the orientation programme will be organized among the Buffer Zone Management Council, Buffer Zone User Committee, Functional Groups and the farmers. Lesson learned from our pilot project will be shared among the farmers and the stakeholders. Market of the menthol oil will be secured by doing agreement between the private company and the functional groups. The training will be organized before cultivation of the mentha plant in the farm level with participatory approach. Regular participatory and joint monitoring will be conducted for the proper implementation and success of the project. With the cultivation of mentha, conservation education also runs side by side to create the awareness about biodiversity conservation and link the conservation with the crop depredation mitigation measure. At the end farmers will be able to take action on biodiversity conservation and feeling ownership of park and its wildlife. National Trust for Nature Conservation (NTNC), Buffer Zone Management Council (BZMC), Bardiya National Park (BNP), Zoological Society of London (ZSL), Buffer Zone Management Committee (BZMC), Functional Groups (FG) and Dabur Nepal Private Limited will directly involve in the proposed project whereas the Terai Arc landscape (TAL - WWF) and Western Terai Arc Landscape Project(WTLCP) support indirectly as they have implemented varieties of activities from community development to park management. TAL and WTLCP focused their activities other than propose project working area. After seeing the progress of this proposed project there is a high chance of replication of the same type of project by TAL and WTLCP in their work area.

**Explain your selections****How do you plan to strengthen your project in the next three years?**

The project aims to involve 500 farmers in the adoption of mentha crop with five community distillation unit in the initial year. Farmers who are supported in the initial year will provide the suckers to the other members and neighbouring group in the next cropping season. Newly enter farmers use the same distillation unit with nominal charge which goes to the community fund. As the proposed distillation unit is multipurpose, other aromatic plants can be distilled so the project has aimed to diversity the alternative crops in different seasons such as chamomile, lemon grass, French basil, Indian basil. The existing wild herbs leaves are also harvested in sustainable way to produce the oil. For the extraction of wild herbs pro-poor users groups are involved so that the landless people will be benefited in the next year. Further training and community mobilization will be organized by the field staffs of NTNC in collaboration with community based organization and Bardia National Park.

## Challenges

**Which barriers to employment does your innovation address?**

**Please select up to three in order of relevancy to your project.**

**PRIMARY**

Lack of skills/training

**SECONDARY**

Lack of access to information and networks

**TERTIARY**

Lack of efficiency

**Please describe how your innovation specifically tackles the barriers listed above.**

Mentha is a new crop for the commercial cultivation although every household has planted for their domestic medicine. They do not have proper knowledge and skill for its cultivation techniques and distillation. so the project has planned to organize field level training to exhibit the cultivation and harvesting techniques. Market price will be assured by setting a cooperative of those farmers who involve in mentha cultivation. Interaction meeting will be organized among the herbal company and cooperative so the maximum benefit goes to the farmers. Quality of oil is ensured by establishing steel coated distillation unit, proper packaging and storing. There might be a chance of degrading soil quality of land. Rotational cropping and farm yard manure application can mitigate the problem.

**Are you trying to scale your organization or initiative?**

**If yes, please check up to three potential pathways in order of relevancy to you.**

**PRIMARY****SECONDARY****TERTIARY**

**Please describe which of your growth activities are current or planned for the immediate future.**

**Do you collaborate with any of the following: (Check all that apply)**

NGOs/Nonprofits.

**If yes, how have these collaborations helped your innovation to succeed?**