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WITH RESPECT

BIODIVERSITY ACTIONS

BLACK PEPPER IN THE WESTERN GHATS, INDIA

A Case Study

A Biodiversity Action Plan (BAP) provides guidance in designing and implementing concrete practices on sustainable use and conservation of biodiversity when growing and sourcing natural raw materials.



BLACK PEPPER *Piper nigrum*

The Facts

- Native to Kerala, in South India
- A flowering vine whose fruit can be processed into black, white, green and red peppercorns
- Used as spices and seasoning
- Black pepper is the world's most traded spice
- Grown in privately owned farms for several generations
- Some farms combine pepper with coffee, oranges, cardamom, cinnamon or vegetables
- An invasive tree species found on farms is used to hold up the pepper vines and for income diversification through the sale of its wood
- Pepper monoculture farms also exist, using concrete poles to support the vines
- Most farms use one improved variety of pepper instead of indigenous varieties
- Soils are often degraded
- Intensive pesticide application is common, including some banned pesticides

The Western Ghats

The Western Ghats is a mountain range stretching parallel to the western coast of the Indian peninsula. It is covered by montane rain forests on higher elevations, and moist deciduous forests lower down. A global biodiversity hotspot, the Western Ghats contain more than 30% of India's biodiversity with the montane rain forests sheltering most of India's endemic species. Many birds can be found, along with some iconic and threatened mammals, such as tigers, Asian elephants and leopards. Receiving heavy monsoon rainfall, the montane forests also play a critical role in redistributing water to other arid areas of the region.

Human–elephant conflicts

Despite its unique characteristics, the region is highly degraded: more than half of the montane rain forests have been cleared, and more than 75% of the moist deciduous forests have been cleared or converted. Agriculture (rubber, tea and coffee plantations), mining and hydroelectric projects as well as urban expansion due to an increasingly dense human population are the major causes of habitat degradation and forest clearing and fragmentation. This leads to human-wildlife conflicts in the area: wild animals, including elephants, do not have enough resources in the remaining natural habitats and enter farms in search of food and water, destroying crops and putting farm families and animals in danger.

Indigenous varieties of pepper were replaced by improved varieties years ago because the latter provided higher yields.

Although it provided an immediate benefit, the use of these improved varieties coupled with poor soil management has depleted nutrients in the soil and increased exposure to pests.

This has led to lower yields, lower quality and higher costs. A holistic approach ensuring good soil conditions, varietal diversity and adaptation to local conditions might not bring immediate profit but will offer greater long-term benefits.



SUSTAINABLE USE



GOAL 1 REDUCE CONTAMINATION FROM AGROCHEMICALS

■ Increase diversity on farm using indigenous varieties of pepper.

The use of mono and hybrid varieties of pepper causes increased incidence of pests, which threatens yields and requires intensive pesticide use. The improved variety used by farmers demonstrated non-resistance to pests in the long term.

The use of several different varieties, including indigenous ones, proved efficient in some farms to reduce pest presence. Expanding the use of several different varieties on farms will increase farm resilience to disease and pests.

■ Implement Integrated Pest Management (IPM) practices and reach a complete replacement of banned pesticides.

Provide technical support to farmers in the implementation of IPM, which includes: using biological control agents such as fungi, introducing pest repellent plants in the farming fields, trenching to regulate soil humidity and prevent root rotting, and keeping updated on pesticides that are banned and possible non-synthetic alternatives.

GOAL 2 IMPROVE SOIL STABILITY AND FERTILITY

■ Replace the invasive tree used for live support with a native species.

The invasive tree species currently used as live support (the tree on which the pepper vines grow and climb up) offers economic value to the farmers.

However, it contributes to soil degradation and threatens the local biodiversity. Native species that are known to contribute to soil fertility, such as Jack trees, can be used instead to support the vines.

■ Implement sustainable soil management practices.

The multi-cropping systems already in place are improved and are spread to monoculture farms. Other practices include trenching systems to control soil humidity. These practices will increase the organic content of the soil and its aggregate stability.

PREVIOUS PAGE: IMMATURE FRUIT OF BLACK PEPPER VINE *PIPER NIGRUM*

TOP: SLENDER LORIS *LORIS TARDIGRADUS*

LEFT: FRUITING JACK TREE *ARTOCARPUS HETEROPHYLLUS*



GOAL 3 CONTRIBUTE TO A BALANCED COEXISTENCE BETWEEN ELEPHANTS AND HUMANS

- **Conduct a study to understand the causes of the conflicts and identify relevant actions to reduce and avoid conflicts.**

Conflicts between elephants and farmers are common. Actions should be identified to avoid conflicts.

Experience has shown that a proper understanding of the situation is the very first step before taking any action and that the involvement of local communities is crucial. Integrating more than one solution (e.g. habitat regeneration, corridors, fencing, and warning systems) is often the most effective way forward.

- **Regenerate natural habitats.**

Providing resources to the elephants by planting native forest trees and establishing water ponds in the area surrounding the farms contributes to reducing the need of the animals to enter the farms.

Restoring degraded forests to increase connectivity and providing safe corridors for the movement of elephants also contributes to fewer encounters between humans and elephants.

Regenerating natural habitat is resource intensive and requires the collaboration of many stakeholders.

However, if the analysis of the situation identified habitat restoration as a suitable action, it will not only form a long-term solution for the reduction of conflicts, but also directly benefit local biodiversity.

EXPECTED IMPACT

Experience and literature show that:

- Fauna moves into reforested areas; its abundance is similar to that found in natural sites.
- Isolated populations are vulnerable to extinction. Improving the inter-connectivity of habitats contributes to the circulation or movement of fauna and flora.
- Areas with plantings of native species hold more wildlife than other areas/habitats.
- Reducing pesticide use and excluding harmful products decrease the negative impacts of farming on biodiversity.
- Promoting beneficial insects and controlling pests through natural methods reduce the need for pesticides.
- Avoiding excess pesticide inputs benefits invertebrate populations, plants and birds. A higher diversity of soil fauna can be found in low chemical-input systems.

TOP: ASIAN ELEPHANTS *ELEPHAS MAXIMUS*

BELOW: BLACK PEPPER VINES GROWING IN CARDAMOM (*ELETTARIA CARDAMOMUM*) PLANTATION

Healthy ecosystems are necessary for a balanced coexistence between wildlife and humans in areas rich in wildlife that also have a dense human population.

Landscape restoration requires coordinated action with local organisations and governments. Habitat restoration providing a long-term and sustainable solution to reduce human-wildlife conflicts will benefit all stakeholders, from the farmers and villagers to the local governments that need to compensate farmers for their losses and take costly measures when conflicts occur.



Regenerating soils through the implementation of sustainable soil management practices contributes to increased soil fertility and plant health.

Sustainable soil management practices also make the farm more resilient to droughts or heavy rains. This could contribute to stabilise and even increase pepper yields, as well as to improve quality. This may lead to medium to long-term economic benefits, compensating for the loss of the sale of timber from the invasive species.

CONSERVATION

REGENERATION

HOW TO BEGIN?

Acting for biodiversity means acting in a systemic and context specific way. You can:

- Assess opportunities and threats to biodiversity in the context of your sourcing.
- Implement actions that focus on conservation, restoration, and sustainable use.
- Plan different measures and coordinate with different actors along the supply chain, particularly with local communities.

Roles and responsibilities

- An international organisation provided support to a company working on sustainable production of spices to engage with UEBT in the definition of a BAP.
- The sustainability manager at the company played a crucial role in facilitating the understanding of the BAP approach among company staff and ensuring the engagement of farmers.
- A team of two agronomists carried out all phases of the BAP definition with the support and feedback of UEBT. They are also actively involved in supporting the farmers and monitoring progress and impacts.
- Farmers are responsible for carrying out the measures, but the company is providing technical and financial support. Moreover, the company ensures long-term commercial relations with the farmers as an incentive for taking biodiversity action.
- The international organisation is the main party responsible for the initial work carrying out the study to identify the best actions to reach a peaceful human-elephant coexistence. If a company has technical staff to work with farmers, the company may replicate the BAP approach across different supply chains without the support of external actors.

Learnings to share

- Setting a BAP allows stakeholders to define actions on actual biodiversity needs and prioritise them according to their feasibility and relevance for farmers.
- The BAP approach allows for checks and balances (adjustments). There are measures that may represent an economic loss for the farmers but they are compensated with other measures.
- The BAP provides an approach that can be generalised and replicated. In a process of continuous improvement, the close monitoring of the measures provides lessons that can be used to improve the current BAP and encourage the definition of new actions.

References

- Rawat, G.S., Desai, A., Somanathan, H., Wikramanayake, E. D. (n.d.). North Western Ghats Montane Rain Forests. www.worldwildlife.org/ecoregions/im0135 (Retrieved 25 Sep 20)
- Rawat, G.S., Desai, A., Somanathan, H., Wikramanayake, E. D. (n.d.). North Western Ghats Moist Deciduous Forests. www.worldwildlife.org/ecoregions/im0134 (Retrieved 25 Sep 20)
- Smith, R.K., Meredith, H. & Sutherland, W.J. (2017) in: W.J. Sutherland, L.V. Dicks, N. Ockendon & R.K. Smith (eds) *What Works in Conservation 2017*. Open Book Publishers, Cambridge, UK. (Smith et al; 2017)
- Western Ghats and Sri Lanka. (n.d.) www.cepf.net/our-work/biodiversity-hotspots/western-ghats-and-sri-lanka (Retrieved 25 Sep 20)

The UEBT Standard

UEBT's Ethical BioTrade Standard—through its requirements in Principles 1 and 2 (Conservation of Biodiversity/Sustainable Use of Biodiversity)—guides its members and their suppliers to define and implement systemic approaches to biodiversity conservation and sustainable use.

To facilitate this process, UEBT recommends companies adopt Biodiversity Action Plans (BAPs) as a strategic road map for businesses to contribute to reversing the loss of biodiversity on Earth.

- The BAP also provides an approach that can be scaled up to an entire landscape. The conservation actions beyond farms require interaction with local organisations and allow for collaboration with existing projects, such as those working on animal-wildlife conflict reduction.

About UEBT and this work

This case study is one of many examples of plans and types of actions that can be taken to reduce negative impacts on biodiversity or promote positive impacts. The initial motivation for the BAP was to promote landscape actions for sustainable pepper production. The company studied felt the BAP was a good tool for this and they also received support from an international organisation to engage with UEBT in the work.

UEBT has drawn this material from its work with various companies and provides these cases to inspire companies to take concrete actions in their own supply chains.

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