Improving biodiversity – enhancing the basis for coffee cultivation

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Lake Constance Foundation
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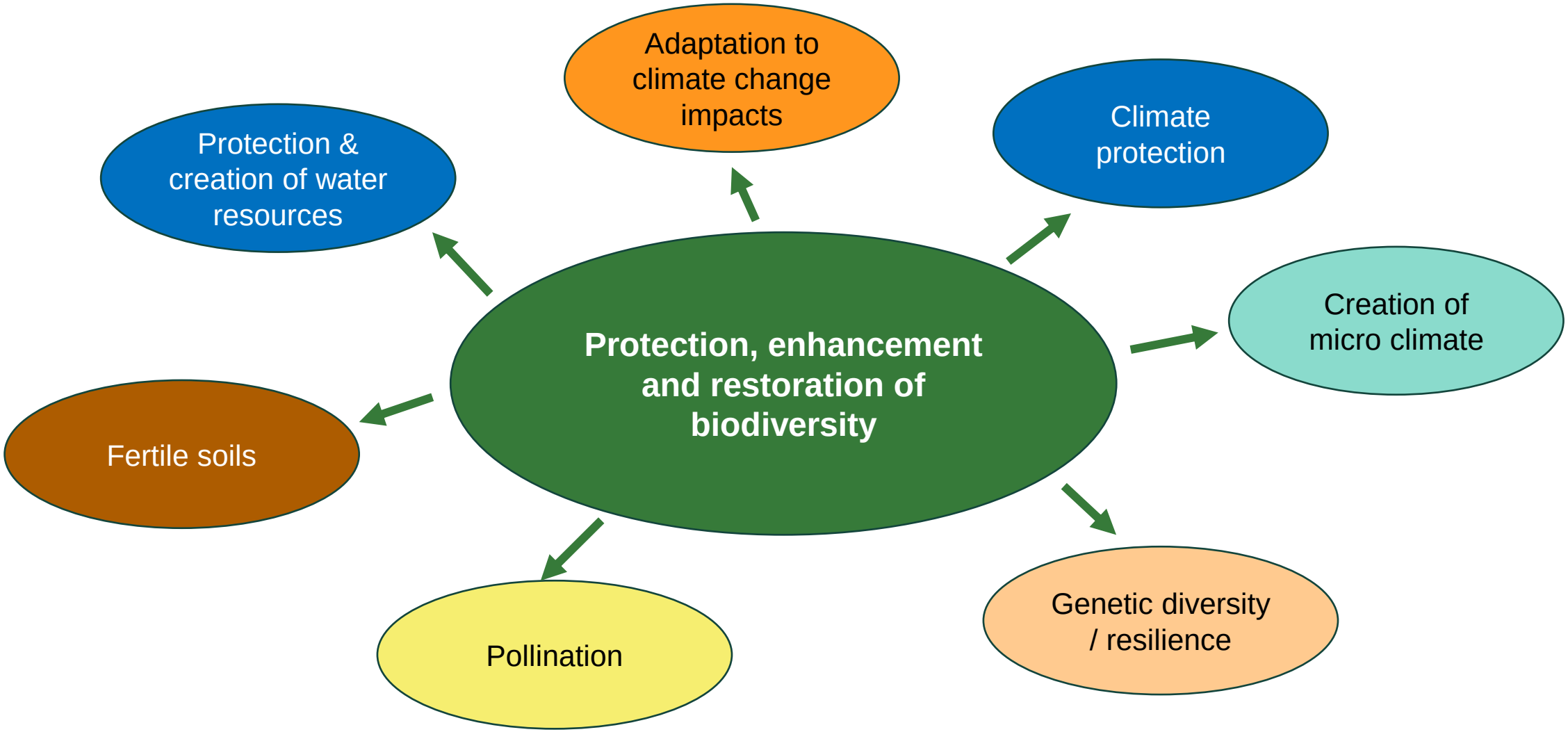
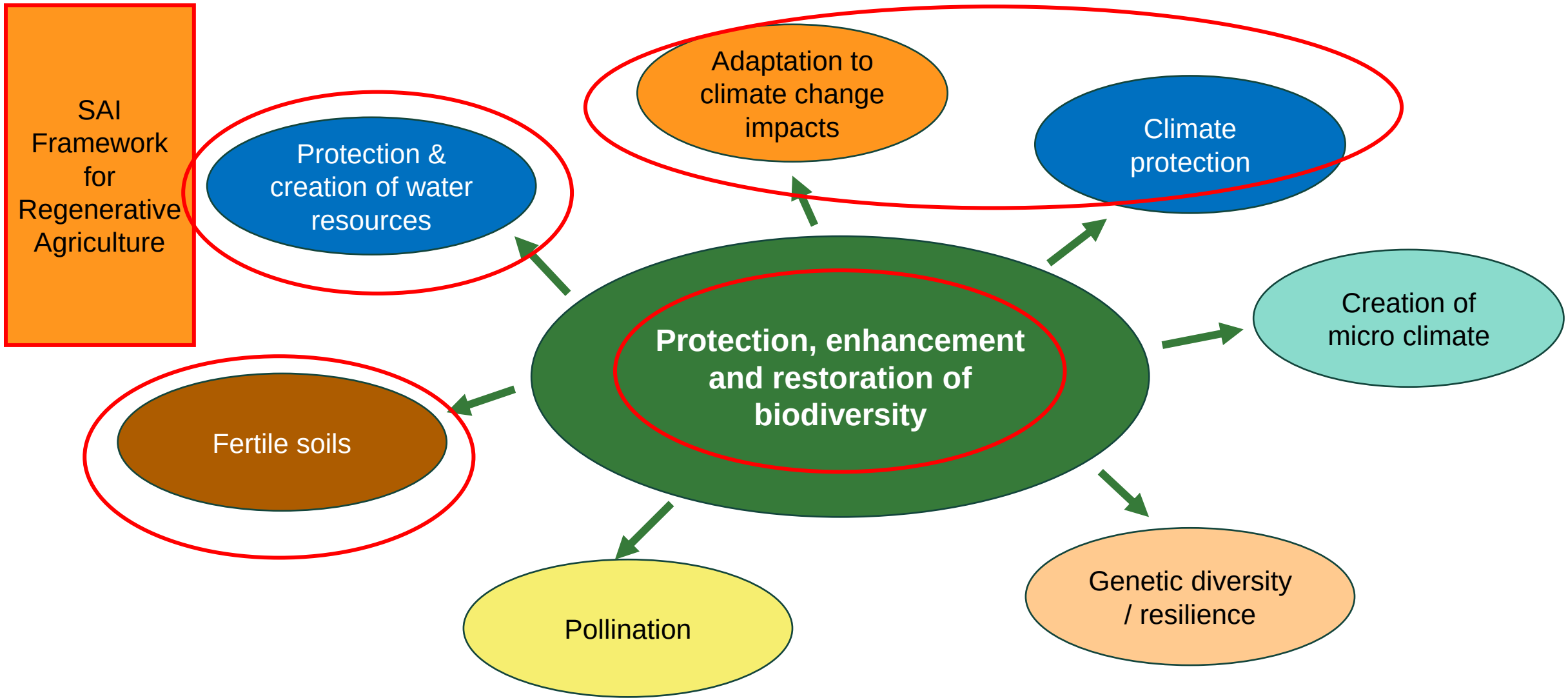
Important arguments to protect biodiversity: Protecting our basis for livelihoods and economy



Biodiversity = key element of Regenerative Agriculture



Coffee cultivation = Increasing negative impacts on biodiversity

South and Central America:

Destruction and degradation of ecosystems

Projections show that climate change could reduce the area suitable for Arabica coffee worldwide by around 50%.

Arabica coffee (100% of coffee in Colombia): Growing areas must be at an altitude of 1,000 to 2,000 metres and the temperature during cultivation must not exceed 25°C.

- Higher-lying areas in the Cordillera are more suitable, i.e. coffee cultivation once again becomes a threat to high-altitude (protected) forest areas.
- Large monoculture areas; isolated habitats; little habitat connectivity. Water bodies /

Degradation of water balance & aquatic ecosystems

- Deforestation / fewer agroforestry systems: negative effects on the water balance and promote erosion.
- Climate change creates more favourable conditions for pests and diseases = increasing use of pesticides (including pesticides classified as highly hazardous class Ia by the WHO).
- Pesticides, fertilisers and other chemicals pollute aquatic ecosystems. Insufficient buffer zones along water bodies promote pollution and sedimentation.
- The wet process of processing green coffee in particular requires large volumes of water.

Degradation of soil

- Less rooting of the soil in sun-grown plantations and plantations with few shade trees
- Up to 2.5 times more erosion in sun-grown plantations than in shade-grown plantations

Loss of species

Honduras, Guatemala, El Salvador: (Illegal) coffee cultivation in protected areas; Andean forest with high biodiversity is being cut down or degraded; Studies in various countries show significant losses in the number of species studied (trees, birds, ants, butterflies); Sun-grown plantations have the lowest species diversity; llegal hunting and fishing on the plantations

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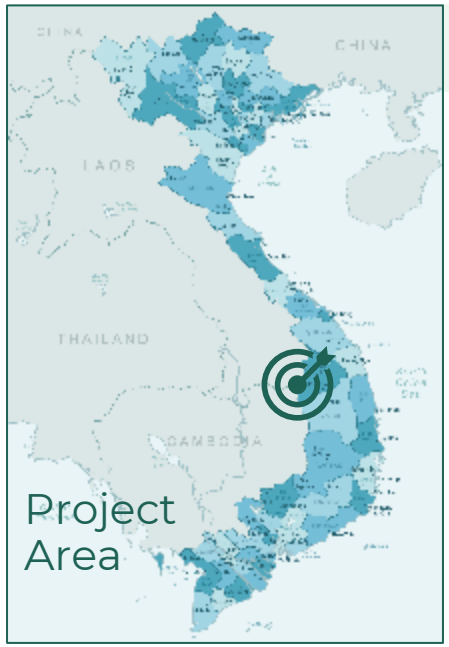
Sustaining biodiversity in coffee production





Project Objective:

To improve biodiversity in coffee production in Vietnam by setting up and implementing biodiversity action plans, using the Biodiversity Performance Tool.

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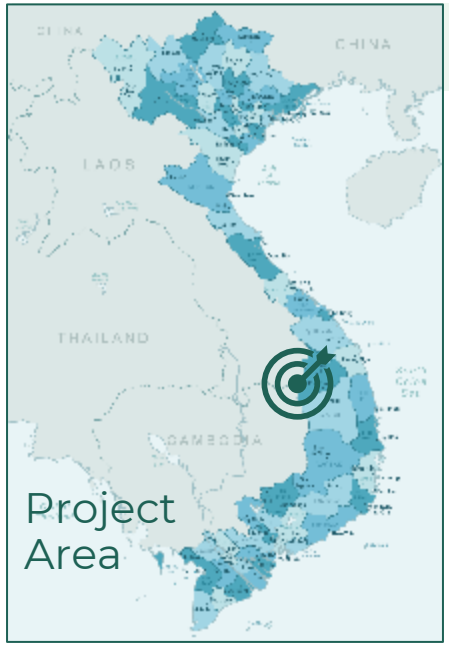
Sustaining biodiversity in coffee production





Project Overview:

- Implementation time: Jan. 2021 – End 2022
- Project location: Gia Lai Province, Vietnam
- Project partners:
  - Project management and coordination: 4C
  - International partners: Lake Constance Foundation and Fundación Humedales
  - Local implementation partners: Agriculture and Forestry Research & Development Center for Mountainous Region (ADC) and Vinh Hiep

Biodiversity Performance Tool Coffee (BPT)

The BPT is

- Support for farmers to realize the baseline on biodiversity on the farm:
  in a structured way and covering all relevant aspects
- Basic evaluation of the baseline situation:
  Aspects are evaluated into green, yellow, red - according to thesholds of the BPT key data and indicators
- Valuable input for a sound Biodiversity Action Plan
- To basically monitor the implementation of the BAP and document improvements
- **To better comply with the criteria of 4C Standard related to biodiversity**

The BPT supports 4C Unit managers and auditors in evaluating the Biodiversity Management of the farm: Are all relevant aspects considered? Are the weaknesses addressed? Does the farmer achieve continuous improvement?

The BPT is not

- An 4C audit
- Replacing the requirements of the 4C Standard
- For blaming the farmer

BPT elaborated in the frame of the initiative Food for Biodiversity

Biodiversity Performance Tool Coffee

BPT for individual farms

BPT Questionaire covering
- Biodiversity management: habitats, species, invasive species, ecological structures, biotope corridors etc.
- **Agricultural practises:** Fertilizer management, erosion, pesticides use, water, agro-biodiversity

BPT Thresholds for each of the key data /indicators collected in the questionaire

BPT Excel or BPT database to process the data of the questionare and relate them to the thresholds

BPT Baseline with evaluation

Of Biodiversity management: habitats, species, invasive species, ecological structures, biotope corridors etc.
- **Agricultural practises:** Fertilizer management, erosion, pesticides use, water, agro-biodiversity

BPT Convoy for Smallholder Cooperatives = BAP on landscape level

Project steps

Baseline assessment and Farm mapping using the BPT

Biodiversity Action Plan based on:

- Identification of potential for improvement
- Recommendations for measures

Aligning with international and local regulations on biodiversity protection. Training for farmers.

Implementing Biodiversity Action Plan and regular monitoring. Elaboration of a BAP on a landscape level = cooperative level

Lesson learnt sharing and replication

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Sound Biodiversity Management

Sound Regenerative Agriculture

BJECT

Setting targets for biodiversity outcomes:

Targets are focused to increase potential for biodiver

- **improve and create habitats**
- **reduce negative impacts of agricultural practic**

Targets are based on the evaluation of the baseline = current situation and potential

Targets are achievable

- **tailored recommendations for measures**
- **Increase of knowledge by training and support biodiversity expert**
- **Farmer decides which measures to include into**

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OBJECTIVE

To **improve biodiversity in coffee production in Vietnam** by **setting up** and **implementing biodiversity action plans**, using the **Biodiversity Performance Tool**

Implementing measures of agroecology & regenerative agriculture - Results (1):

Significant changes on the ground after 1 year of implementing measures:

- **Intercropping** with fruit trees or other perennial crops, breaking the monoculture system
- **Increased vegetative layers** to cover soil surface
- Maintaining and planting flowers/shrubs to **protect beneficial insects** (pollinators), bee populations were increased
- **Shade tree maintenance and incrementation**
- **Good farming practices** widely implemented (zero-pesticide farm, compost organic waste and return it to farm, etc.)
- **Buffer zones to protect water bodies, surrounding area and allowing movement of wild animals**

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Results (2):

- **Awareness Raising and Capacity Building:**
  - Practical skills to establish the micro-ecosystem of coffee farms, eliminate bad practices and risks of decreasing biodiversity performance
  - Integrated Pest Management (IPM) and Weed Management (IWM), incorporation of plants that attract beneficial insects and pollinators
  - Promotion of shade trees and intercropping

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Results (3):

- **Further potential impacts at larger scales**:
  - Inclusion of 4C requirements in Vinh Hiep trainings, with focus on the importance of biodiversity and its role in climate change resilience
  - Adjacent farms are the next subject of expansion of the project (building a network of cooperation on landscape level)

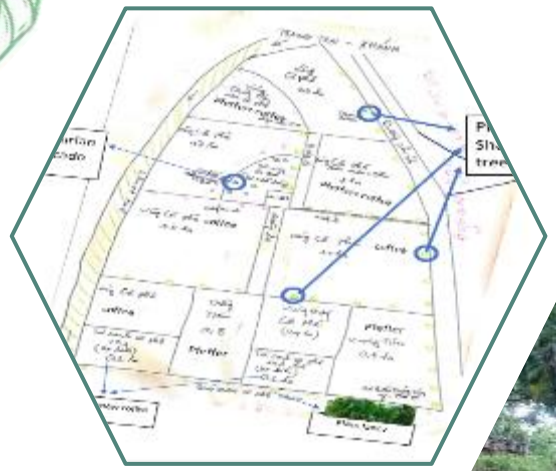
Roll out:

Training on biodiversity by Vinh Hiep for all farmers in 10 communities of Dak Doa district

Improvement of 4C criteria with relevance for biodiversity

Work in progress: Implementation of monitoring

Significant changes
achieved on the ground



Farm planning

Bee keeping

Shade trees

Intercropping

Cover soil surface

More living space for beneficial insects

Composting

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Challenges specially for small holder farmers

Creation of habitats and buffer zones need space = reducing agricultural production surface;

Biodiversity compatible agricultural practices need knowledge and realistic alternatives, e.g. use of beneficial insects instead of pesticides;

Landscape approach is much more effective and beneficial for biodiversity, but requires collaboration of all farmers of the cooperative

Some measures need financial resources (e.g. seedlings, seeds) = smallholder farmers cannot cover these costs;

Added value of coffee produced more biodiversity friendly is not paid by the market; positive impacts are not immediately = why should farmers be committed?

Key Takeaways

Practical, cost and time-saving solutions are piloted and ready to be implemented!!!

- Farmers' awareness on protecting and improving biodiversity can be effectively increased through an practical easy to use tool and participatory baseline assessment
- Many improvement actions on the ground are **feasible** and **affordable** for farmers. Additional costs for certain measures need to be covered.
  The cooperation of local companies and/or NGOs is crucial
- The BPT tool is voluntary and ready for use.
  Can be used as an internal assessment tool vs 4C requirements on biodiversity for being certified
- **Sound protection, enhancement and management of biodiversity is key for an successful Regenerative Agriculture, because all relevant aspects depend on this**

Current and upcoming legislation of the European Union

Relevant for Biodiversity – Relevant for Food – Relevant for Coffee

EU No-Deforestation Regulation

Currently included coffee, cacao, palm oil, cattle, soya, rubber, wood

EU Taxonomy

Orientation for financial institutions to invest and support more sustainable economic sectors

Corporate Sustainability Reporting Directive

require large companies and listed companies to publish regular reports on the social and environmental risks they face, and on how their activities impact people and the environment. E4 Standards = Biodiversity

EU Supply Chain Legislation (in preparation)

Companies operating in the EU need to implement certain due diligence obligations in order to prevent that their business activities have negative implications on human rights and the environment in their chains of activity within and outside Europe.

EU Green Claims Directive (in preparation) to avoid

Thanks for your attention!

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Please have a look also to

Food for Biodiversity
https://food-biodiversity.de/en/

Biodiversity in Standards for the Food Sector
https://www.business-biodiversity.eu/en/food-standards