



Food and Agriculture  
Organization of the  
United Nations



Ministry of Forests  
and Environment

# International conference on agrobiodiversity

Sharing best practice in nature-based solutions from  
forest and farm producer organizations



## Technical report



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## Summary of the outcomes and call to action

The Agrobiodiversity Conference held in Pokhara, Nepal from 9-12 April 2024, brought together 180 in person participants from 32 countries – including many representatives of forest and farm producers' organizations (FFPOs) and Indigenous Peoples and Local Community (IPLCs) groups from both national, regional and global organizations. The conference involved a share fare and four field visits to allow peer-to-peer learning and exchange. Technical sessions involved presentations, panel question and answer sessions and working groups covering:

- 1 - What agrobiodiversity is and why it matters;
- 2 - How policies shape agroecology approaches that help to protect and manage agrobiodiversity for better or worse;
- 3 - Traditional knowledge of agroforestry systems and knowledge exchange practices that maintain agrobiodiversity;
- 4 - Seed and farm management techniques and innovations to sustain agrobiodiversity;
- 5 - Enterprise innovations that encourage diversification in what is planted; and
- 6 - Nature finance – improving flows to FFPOs and IPLCs. It concluded with a panel discussion on how alliances might advance agrobiodiversity globally.

Outcomes from the conference include a **call to action** globally in line with the following 10 key points:

1. **Agrobiodiversity conservation and sustainable use are essential to humanities' past, present and future**, and agroecological approaches that halt and reverse the drastic decline in animal and plant species and varieties used must become the mainstay of global agriculture if we are to achieve global food security in an increasingly variable and changing climate.
2. **Smallholder farmers, Indigenous Peoples and local communities are the current custodians of much of the world's remaining agrobiodiversity** – and their agroecological knowledge, seed systems, farming practices, diversified enterprises and finance systems demand respect, right's-based approaches, and direct financial support in response to global conventions on climate, biodiversity and desertification.
3. **Agroecology practiced by smallholder farmers, Indigenous Peoples and local communities integrates ecological resilience, social responsibility and economic efficiency** – and these stakeholders must therefore become primary actors in crafting laws and policies that are responsive to those integrated needs.
4. **Traditional knowledge is very important in sustaining diverse food culture and plant and animal cultivation**, and the unity and love required to foster collective action, so traditional knowledge on nutrition, health, and cultivation needs to be respected and promoted.
5. **Seed systems that develop, multiply, distribute and sustainably use agrobiodiversity require a pluralistic approach**: in situ farmers' practices, including community seed banks that conserve through use ever evolving landraces, with support from ex situ seed storage systems, and under an enabling policy environment that prioritizes the former but also involves every key stakeholder in the process.

6. **Agrobiodiversity-supporting enterprises can be developed from contextually specific yet integrated forest and farm landscapes**, that offer varied options for subsistence and commercial sale of food, fiber, fuel, fertilizer, medicines, cosmetics, tourism etc. – and require support for building regional aggregation and marketing units with trusted internal governance, internal investment funds, quality best practice production manuals, support services for lower-tier member groups, and linkages to pioneering impact-investment support partners while also promoting lesser-known crops and products whose sale can incentivize diversification in what is produced.
7. **Financial donors need to do better than get 0.3% (circa US\$ 2 billion) of international climate and nature finance to FFPOs and IPLCs groups**, and national finance processes around Nationally Determined Contributions (NDCs) and National Biodiversity Strategic Action Plans (NBSAPs) need to channel funding more directly to local groups, including linking more creatively to internally mobilized smallholder finance, savings and loan groups and financial cooperatives that are currently funding US\$ 368 billion per year of necessary climate adaptation – much of which involve agrobiodiversity conservation.
8. **A new political agenda is needed connected to the recent Kunming-Montreal Biodiversity Framework that favours the promotion of chemical free, and nature friendly agroecology-based farming systems** over chemically enhanced monocultures that provide temporarily cheap food but at the long-term expense of future food security.
9. **Support is required for ongoing knowledge exchanges on agrobiodiversity across countries** such that new evidence of agroecological success can be used to push for policy reforms (around diversified nutrition and food system transformation with a push for funding and financing to increase its accessibility).
10. **Greater use must be made of existing knowledge hubs (such as LI-BIRD) networks, groups, alliances, both nationally and internationally that promote agroecology** – strengthening members be they individual or even countries (such as the agroecology coalition that has 49 country members) and using programmes and projects to scale up and scale out.

**For additional information (presentations, recordings, background and outreach reports), please refer to Annex 1.**

# 1. Introduction

## 1.1. Why Agrobiodiversity

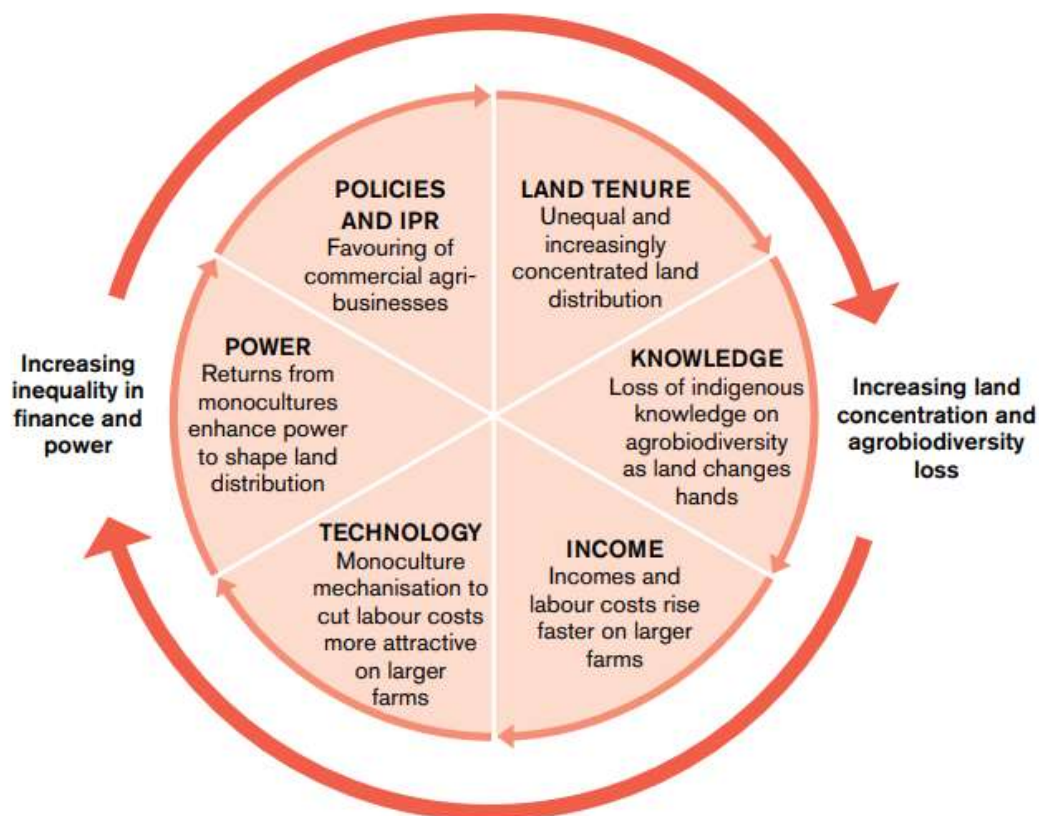
Nature degradation and increasing climate risks are a top concern for frontline forest and farm producers. They also have global societal impacts on access to food, energy, construction materials, healthcare and water sourced from global value chains. Farmers adopt different approaches to ensure the productive and sustainable use of natural resources and climate resilience. Agrobiodiversity is one component of agroecology that is vital to design and implement ecosystem-based adaptation activities that promote climate resilience in forest and farm landscapes and enterprises.

Agroecology is ‘the application of ecological approaches to agriculture’. It aims to employ management practices that use nature’s own cost-efficient processes to benefit production, ecological integrity of farms, and climate change adaptation. The practices are embedded in traditional knowledge and ever evolving local innovations that use renewable resources (nutrients, biomass, water) efficiently, thus decreasing the need for external resources such as agrochemicals. In addition, agroecology promotes diversification of production and products, minimizing harm to nature and improving nature’s functionality in the benefit of production.

Agrobiodiversity (agricultural biodiversity) is ‘the subset of biodiversity found within agroecosystems (agricultural ecosystems), including the variety and variability of animals, plants, micro-organisms and wild foods at the genetic, species, and ecosystem levels, which are necessary to sustain key functions of those agroecosystem’. It is a key component of agroecology and has multiple benefits including food security and livelihood resilience, nutritional and health benefits, the provision of biomass energy and household materials, preservation of biocultural heritage, and the maintenance of ecosystem services including climate change mitigation.

Agrobiodiversity that enriches nature and nutrition is therefore an essential component of sustainable development. Research shows that smallholder farmers are the guardians of most of the world’s agrobiodiversity as they use and sell many traditional crop varieties, tree products and livestock. This meeting of organized smallholder forest and farm producer organizations (FFPOs), Indigenous Peoples and Local Communities (IPLCs) groups aims to highlight the severity of the challenge and advance practical solutions to protect nature and reduce climate change.

The rate of loss of agrobiodiversity is alarming. Of the 6,190 breeds of mammals domesticated historically for food and agriculture, 559 have become extinct (over 9 per cent) and at least 1,000 more are threatened. Of 7000 plant species cultivated historically for food, just 80 now make a major contribution to global food supply, just 9 contribute 66% of total global crop production (sugarcane, maize, rice, wheat, potatoes, soybeans, oil-palm fruit, sugar beet and cassava), and half of all plant-based calories come from only three species – rice, maize, and wheat. While less well documented, the same may be true of other plant-based products such as construction materials, medicines and cosmetic products. The causes of agrobiodiversity loss include various issues that are interlinked at different levels as shown in Figure 1.



**Figure 1.** Causes of agrobiodiversity loss. Increasing inequality in finance and power increases land concentrations and agrobiodiversity loss (Source: conference presentation – Duncan Macqueen).

International efforts have been made to address the loss of agrobiodiversity, notably in the 20 Aichi Targets of the Convention on Biological Diversity (CBD) but also in the 2030 Agenda for Sustainable Development, and the 2021-2030 UN Decade on Ecosystem Restoration, which is in close alignment with the United Nations Decade of Family Farming (UNFFF). The Global Environmental Facility (GEF) is in discussion to launch the Global Biodiversity Framework Fund.

Against this background, the goal of the Forest and Farm Facility (FFF) is to support forest and farm producers’ organizations (FFPOs) as the key change agents in delivering climate-resilient landscapes and improved livelihoods. FFF is a partnership hosted by FAO with co-management partners – the International Institute for Environment and Development (IIED), the International Union for Conservation of Nature (IUCN) and AgriCord that currently supports FFPOs in 12 partner countries: Bolivia, Ecuador, the Gambia, Ghana, Kenya, Liberia, Madagascar, Nepal, Togo, United Republic of Tanzania, Viet Nam and Zambia, as well as regional and global FFPOs worldwide. Now in its second phase of implementation, and with a budget of USD 65 million, FFF channels funds directly to FFPOs to achieve the following outcomes:

- Outcome 1. Enabling policy and legal frameworks
- Outcome 2. Increased entrepreneurship, access to markets and finance
- Outcome 3. Improved delivery of landscape-scale mitigation, adaptation and climate resilience
- Outcome 4. Improved and equitable access to social protection and cultural services.

FFF also provides support for peer-to-peer thematic learning events, technical training, the co-production of knowledge, communication and advocacy.

Nepal joined FFF in 2012, with activities starting in 2014 and supporting a wide range of FFPOs and IPLC groups spanning 2.9 million households – but with more localised climate resilient policy and value chain support across many different production systems including essential oils, non-timber products (NTFP), wood and bamboo products, and various agroforestry and agricultural products, such as leaf plate, organic vegetables, cardamom, garlic, bay leaf, ginger, turmeric, pepper, honey, lime, milk and dairy, and chiuri butter. Programme implementation is supported by a programme execution task team comprising FECOFUN, the FAO, and MoFE, an advisory committee, a consortium of FFPOs, and a business advisory group, with regular interactions in five districts spread across three provinces.

## **1.2. Forest and farm producers' organizations (FFPOs) as the key focus of the conference**

FFPOs including groups of Indigenous Peoples and Local Communities (IPLC) draw their membership from smallholders who comprise 84 percent of all farms worldwide in diverse and highly efficient landscapes. They produce 35 percent of the world's food on just 24 percent of its agricultural land, i.e. with high productivity per unit area. But they are in competition with industrial-scale monocultures that target the production of cheap food. In general, markets homogenize production into monocultures driven by the need for product uniformity and scale efficiency. According to the United Nations Convention to Combat Desertification (UNCCD) Global Land Outlook 2 report, released in 2022, up to 40 percent of the planet's land is degraded, directly affecting half of humanity and threatening roughly half of global gross domestic production (GDP) that is moderately or highly reliant on natural resources (i.e. approximately USD 44 trillion).<sup>1</sup> If business as usual continues through 2050, projections suggest that degradation will expand across an area of approximately 16 million km<sup>2</sup>, almost the size of South America.

FFPOs offer a viable alternative and can help drive a paradigm shift away from large-scale monoculture systems, which are vulnerable to climate change and highly inequitable. They engage in a set of activities to achieve market scale, but with different smallholdings that can produce diverse baskets of many different products from a single landscape and with high productivity per unit area. For developing countries, export trade can often be limited to a few commodities, but local trade and consumption embrace a very large number of products. Diversifying farms in these systems provides better food and nutrition and more secure access to renewable energy, accessible construction materials, healthcare products and cosmetics among others. Moreover, this diversity also helps cushion the effects of shocks from climate change, pandemics and market-related fluctuations.

It is vital that more financial resources are mobilized by and channeled towards the organizations of smallholder producers, local communities and Indigenous Peoples. They own or manage at least 4.35 billion hectares – roughly half - of forest and farm landscapes yet receive less than 2 percent of climate and nature finance. They are primary agents in delivering agrobiodiversity solutions.

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<sup>1</sup> United Nations Convention to Combat Desertification. 2022. The Global Land Outlook, second edition. UNCCD, Bonn. [www.unccd.int/sites/default/files/2022-04/UNCCD\\_GLO2\\_low-res\\_2.pdf](http://www.unccd.int/sites/default/files/2022-04/UNCCD_GLO2_low-res_2.pdf)



### 1.3 Objectives achieved during the conference

Overall, the participants shared innovative traditional and scientific knowledge on how FFPOs and IPLC organizations can advance agroecological practices, agrobiodiverse planting materials and climate smart business and finance models that enrich nature and nutrition. The gathering of the representatives from FFPOs and IPLC groups, governments, local and international civil society organizations and other stakeholders from Asia, Africa, Latin America and Europe helped to enhance peer learning through South-South and triangular cooperation and stimulated upscaling of good practices across a global network of FFPOs facilitated by the FFF. FFPOs from the Global South, particularly Asia, Africa and Latin America had the opportunity to exchange knowledge and discuss common challenges in maintaining agrobiodiversity, which can enable them to adapt their own models from lessons learned to the benefit of their members' livelihoods. The conference also prepared the ground to strengthen the collaboration and synergy of FFPOs with governmental institutions, the private sector, finance institutions and other relevant stakeholders to promote agrobiodiversity linked to forest and farm value chains. Finally, it generated a body of knowledge developed and owned by FFPOs, which will constitute a technical paper (forthcoming).

### 1.4 This report

The above-mentioned objectives were achieved through multiple components of the conference – comprising an inaugural session with introductory remarks and statements from policy makers and leaders of relevant global/regional support programmes, followed by six (6) technical sessions that dive deep into diverse themes relevant to FFPO-led agrobiodiversity and a set of tailored field visits. A closing session emphasized key messages, action points and commitments.

This report presents the key messages and lessons emerging from the stakeholders' gathering at the conference. It synthesizes the key information, insights and recommendations shared under themes, rather than returning a chronological flow of the conference proceedings, presentations and information delivered at the event.

## 2. Setting the scene: remarks from policy makers and program leaders

The International Conference on Agrobiodiversity started with the inaugural session where policymakers and program leaders highlighted the importance of the gathering on agrobiodiversity and what Nepal has to offer to facilitate useful discussion on the pressing topic. Chaired by Hon. Minister Nawal Kishor Sah Sudi from the Ministry of Forests and Environment (MoFE), Government of Nepal, the conference was inaugurated by showering of Tulsi (Holi Basil - *Ocimum tenuiflorum*) together with opening remarks and statements from selected policy makers and leaders. The inauguration was honored by the presence of Hon. Minister Jwala Kumari Sah (Ministry of Agriculture and Livestock Development, MoALD), together with distinguished guests such as Ms Sabnam Shivakoti (Joint Secretary, MoALD); Mr Badri Raj Dhungana (Joint Secretary, MoFE), Dr Ram Krishna Shrestha (Joint Secretary, MoALD), Dr Ramchandra Kandel (Secretary, Forests and Environment, Ministry of Industry, Tourism, Forest, and Environment, Gandaki Province), and Dr Pratap Shrestha (Chairperson, LI-BIRD), amongst others.



**Plate 1.** Hon. Minister Nawal Kishor Sah Sudi, Ministry of Forests and Environment (MoFE) and Hon. Minister Jwala Kumari Sah (Ministry of Agriculture and Livestock Development, MoALD) , showering of Tulsi (Holi Basil - *Ocimum tenuiflorum*) at the conference inauguration

In his welcome remarks, Mr Badri Raj Dhungana (Joint Secretary, MoFE) acknowledged the presence of diverse groups of participants from 32 countries and how the gathering marks a trailblazing occasion for crucial discourse on agrobiodiversity conservation. The policy maker highlighted the expectation for the event to contribute to FAO's priority program on establishing resilient agri-food systems with substantial support from the United Nations Decade on Family Farming (UNFFF). He further stresses the multifaceted challenges that confront farmers, and the necessity to engage cross-sectoral stakeholders in creating resilience through genetic and ecosystem diversity. In a relevant video from Nepal and Ecuador, the importance of local agrobiodiversity for rural communities, who are dependent on forests were placed into perspectives, inviting participants to reflect on the importance of agrobiodiversity and the contributing role of FFPOs in different contexts.

As part of the opening statement that set the scene, Mr Luis Miguel Aparicio, Manager of the Forest and Farm Facility, expressed FAO's appreciation to the Government of Nepal (GoN) for hosting the conference on the important topic of agrobiodiversity. The manager further elaborated the current work of the FFF and plans to pursue future pathways that will be paramount for sustainable agri-food systems and have the potential for nature conservation, conservation of diverse range of plant and animal species, adaptable to environmental changes and external shocks, secure livelihoods and benefits for future generations. According to him, FFF intends to build capacity of FFPOs for both present and future in order to ensure steady food supply, implement agroecological practices and increase resilience of the whole system.



**Plate 2.** Hon. Minister Nawal Kishor Sah Sudi, Ministry of Forests and Environment (MoFE) addressing the conference participants with inaugural remarks

Mr Duncan Macqueen, Director of Forests of IIED, supplemented the FFF Manager’s remarks by explaining why FFF chose to pursue agrobiodiversity in the conference and beyond. He acknowledged that Nepal is one of the global centers for agrobiodiversity management in the work, with a particular example on community forestry and its role in restoring the landscape successfully. Drawing on the case from Nepal, Mr. Macqueen highlighted the significant role of forests in transforming climate resilient landscapes and sustaining livelihoods, pointing to variable change in climate and the serious threats it possesses to our ecosystem with consequences for natural degradation and loss of different species. He further stressed that Forest and farm producers play a central role to address the challenges, and that a knowledge demand survey conducted in 6 countries with 41 FFPOs has given initial insights on people’s desire to know more about how to manage agrobiodiversity. Recalling key messages from a prior FFF conference on diversification for climate resilience organized in Vietnam two years ago, the speaker conveyed that diversification for climate resilience must be ecologically, economically and socially viable – and that, special attention be given to finding ways to manage biodiverse farms and generate income at the same time. This outlines the major role of agrobiodiversity management and the event, and the conference was expected to further enrich the existing knowledge and promote learning from one another from the center of agrobiodiversity management.

On a similar note, Mr Thakur Bhandari of FECOFUN welcomed all the delegates engaged in agrobiodiversity and forest conservation to this timely conference, which he believes will address various factors including climate risks in agrobiodiversity management. Like Mr. Macqueen, Mr. Bhandari pointed out that forests also hold significant place along with agriculture to achieve sustainable livelihoods. He called on MoFE and MoALD to work in tandem to generate and implement policies that will benefit both forest and farm producers. The speaker further elaborated that our boundaries must be increased from agricultural lands to forests, keeping the conservation, promotion and utilization aspects at the core.

He informed that 3.1 million forest users are associated with FECOFUN, working daily in conserving traditional knowledge, managing the forests and securing their livelihoods. Therefore, the technical sessions were expected to generate new avenues for FFPOs in Nepal and beyond.

The FAO Representative for Bhutan and Nepal, Mr Ken Shimizu, acknowledged that Nepal is rich in biodiversity hotspots with exemplary initiatives in agrobiodiversity conservation through community forests. He, though, underlined the climate vulnerability of Nepal with potential impacts on agrobiodiversity loss and livelihoods, with the hope that the gathering of agrobiodiversity activists can play an important role in agrobiodiversity conservation referring to the stories from FFPOs. He shared that agrobiodiversity management is a top priority of FAO with 20 program areas focusing on agrobiodiversity conservation and management, climate resilient agriculture, food system transformation, gender inclusive, etc. The representative underscores FAO's commitment towards the promotion of future smart crops. He further shared that our agri food system is facing socio-economic and environmental challenges with rapid migration from rural areas to cities and abroad, creating labor shortage for producing forest and farm products. He highlighted the importance of climate finance- Green climate fund, and the need for developing such mechanisms for accessing finances for innovation and upscaling good practices conducted by FFPOs.

Dr Govinda Prasad Sharma, Secretary of Ministry of Agriculture and Livestock Development at MoALD pointed out that biodiversity is being increasingly recognized in agricultural ecosystems in Nepal, which is very well ranked across the world. However, human interventions, climate change and environmental pollution are major causes of agrobiodiversity loss. He mentioned that the GoN is serious about prioritizing agrobiodiversity that ranks the first among six biodiversity components. He shared that the constitution of Nepal has also provisioned sufficient legislation at all three tiers to implement such activities. The government observes the first day of every 10th month of Nepali calendar as a week for agrobiodiversity conservation. He also added that the GoN has provisioned the National gene bank and mandated the conservation of germplasm of crops, livestock and fisheries. There are various policies and instruments such as National Agrobiodiversity Policy 2007, National Agroforestry policy 2017, National Genebank (Agrobiodiversity Research and Conservation), CDDABC (Federal affairs for sustainable agrobiodiversity use and conservation), in situ and ex-situ conservation policy, promotion of indigenous crops in collaboration of numerous CSOs and CBOs as well as their registration into the national seed system. He also mentioned that this conference will bring partners at the national, regional and international level to conserve these germplasms.

Hon. Minister Jwala Kumari Sah, MoALD addressed agrobiodiversity as an important element for the conservation of agroecosystem, including its significance in maintaining food and nutrition security and livelihoods. She shared that people at grassroots, especially, women are the important actors of agriculture. Neglected and underutilized crops are very important and staple food for these people but the incursion of hybrid varieties has led to loss of NUS crops. This drives our attention to conserve these crops. She addressed that the GoN has highly acknowledged the international treaty such as ITPGRFA, and all three tiers have the rights to mainstream agrobiodiversity conservation in their annual programs and plans. She mentioned that custodian farmers are being identified and supported with technical and financial support from the government programs. The GoN has begun to observe the first day of the 10th month of every year as agrobiodiversity promotion day. Agrobiodiversity is equally prioritized in all important policy documents by the GoN. She added education and capacity building are important to conserve agrobiodiversity, with complementary support from research and science, which must generate new knowledge on this aspect. She expressed affirmative commitment to engage the communities, especially farmers, for conservation, promotion and utilization of agrobiodiversity.

On the accounts of the relevant remarks provided by the policy makers and institutional leaders, Hon. Minister Nawal Kishor Sah Sudi, Ministry of Forests and Environment (MoFE-GoN), provided closing remarks bringing the conference to an inaugural stage. The Minister welcomed all the delegates to the conference and stated that MoFE has engaged in result-oriented global agrobiodiversity conservation. He stressed that smallholders are not just producers but play crucial roles in conservation, and they are the guardians of agrobiodiversity. To highlight his expectations for the 4-day conference, the minister points out that the contributions of all the delegates and other stakeholders will be invaluable to generate substantial conclusions from this conference, particularly, to identify strategies for conservation and promotion of agrobiodiversity in both Nepal and the global context. He underlined that GoN is fully ready to advance agrobiodiversity as guided by the outcomes of this event.



**Plate 3.** Policy makers and program leaders who set the scene for exchange at the conference. Far left: Mr. Thakur Bhandari (Chairperson, FECOFUN); Second from left: Mr. Luis Miguel Aparicio (Manager, FFF), third from left: Dr. Govinda Prasad Sharma (Secretary, MoFE), far right: Mr. Ken Shimizu (FAO Representative for Bhutan and Nepal), Second from the right: Hon. Minister Jwala Kumari Sah (MoALD); Third from the right: Hon. Minister Nawal Kishor Sah Sudi, Ministry of Forests and Environment (MoFE)

### **3. Agrobiodiversity – what it is and why it matters**

#### **3.1 Importance of agrobiodiversity in national and global contexts**

The conference raised awareness on the importance of agrobiodiversity allowing the stakeholders from diverse national and professional backgrounds to develop a common understanding on the topic. This was achieved in the first technical session where stakeholders from Indigenous Peoples (IP) platform, national initiatives and producer organizations and global programs shared knowledge on why agrobiodiversity matters from both national and international viewpoints.

Common understanding developed including lesson learnt from IP's perspectives include the following:

- Agrobiodiversity is the basis of life but has suffered due to mono-culture production and climate change leading to the loss of much of our global agrobiodiversity.
- Nepal, for instance, has lost 75% of its biodiversity since the 1900s, and IP's territory, protected by their knowledge and practices play a vital role in maintaining remnant agrobiodiversity – this is true across the world.
- Indigenous communities have a specific identity that makes them the custodians of biodiversity – for example, IP can commune with seeds, crops, soil, nature, water and sky and agrobiodiversity through their rituals, culture and customary practices.
- The strong relationship between IP and agrobiodiversity makes the latter not only a commodity but also part of peoples' culture and customary practices, which demands respect, recognition and protection in both policy and practice.
- Traditional Knowledge is gradually being lost due to limited opportunities to no transfer to the next generation while modern science and technology such as gene editing, genetic engineering, DSI among others are negatively affecting the traditional knowledge system – therefore, both Indigenous Peoples modern should work together for optimal agrobiodiversity.
- Nepal's richness in cultural diversity is fundamental to richness in biodiversity – this example highlights the need to recognize the importance of traditional knowledge and promoting culture policy, and the governments around the world should, for example, invest in documentation of local and traditional knowledge to share development agenda.
- FFPOs enterprise based on traditional knowledge can be promising to uplift the socio-economic condition of local communities, and indigenous communities need legal protection, a dynamic program that supports them and a mechanism for knowledge transfer to the younger generation where indigenous and modern Science can go hand-in-hand.



**Plate 4.** Mr. Kamal Kumar Rai presenting the importance of agrobiodiversity from an Indigenous perspective

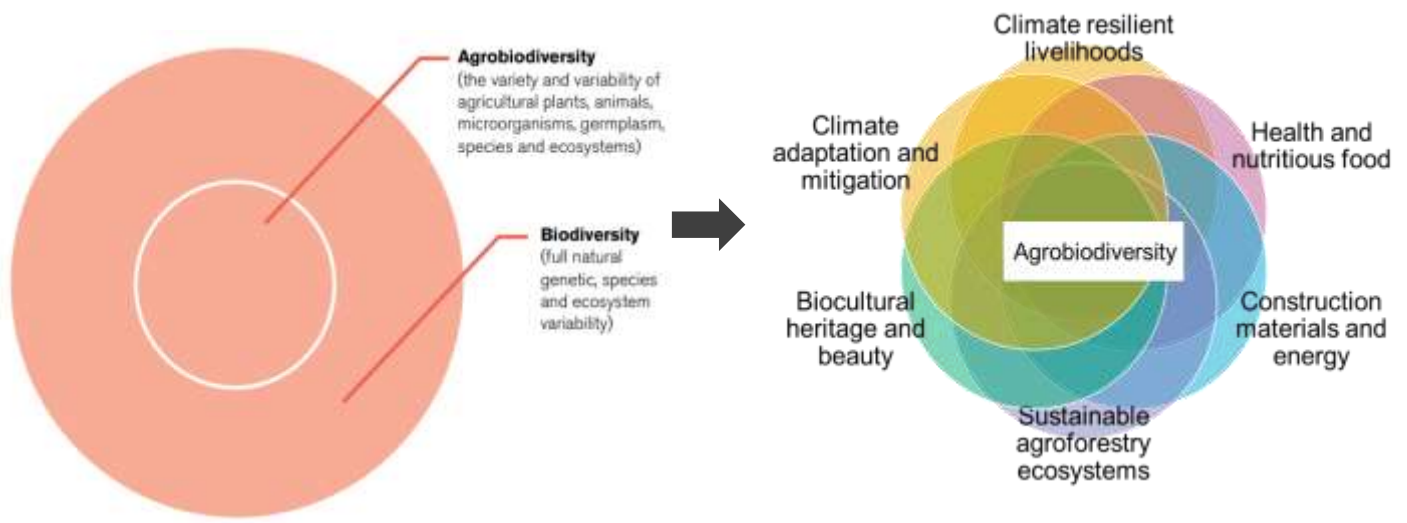
Follow the link [here](#) to view welcome video by IIFB

Drawing on a presentation of a background report<sup>2</sup>, the importance of agrobiodiversity was further elaborated in connection with the vital role of FFPOs. The stakeholders learnt that agrobiodiversity is a subset of biodiversity and can generate several benefits (Figure 2). There is an alarming loss of agrobiodiversity with an expected decrease of 5% in agricultural productivity across populous tropical areas. It was noted that smallholder farms and activities are the backbone for chaining the trend – the smaller the farm size the greater the diversity and examples suggest that as the farm sizes have grown, only 5 animals and 12 crops contribute to 75% calories consumption in the present context. Policies and IPR that leads to industrial scale agriculture; land tenure insecurity among smallholders, IPLCs; knowledge loss; and technologies that favors in monoculture production are some of the key drivers of biodiversity loss.

Organizations and community institutions are key to progress as they serve as a platform for information sharing, promoting nutritional diversity and health benefits, use of natural medicines, promoting organic and agroecological products, communication etc. Additional roles they play include cultivating diverse crops (seed collection, community seed banks, seed fairs), developing and diversifying business, organizing market fairs and other crop aggregation and quality infrastructures, fund mobilization (saving and credit cooperatives) and political campaigning (for agroecological approaches, farmer friendly seed laws). All these activities enhance agrobiodiversity management. Smallholder farmers and IPLCsgroups are the stewards of the remaining agrobiodiversity of the world. Their community seed banks (CSBs), field gene banks, seed enterprises, etc can offer solutions. Recognition of smallholders in the role of agrobiodiversity conservation is crucial and needs to protect their rights.

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<sup>2</sup> For background report please see: <https://www.iied.org/22251iied>



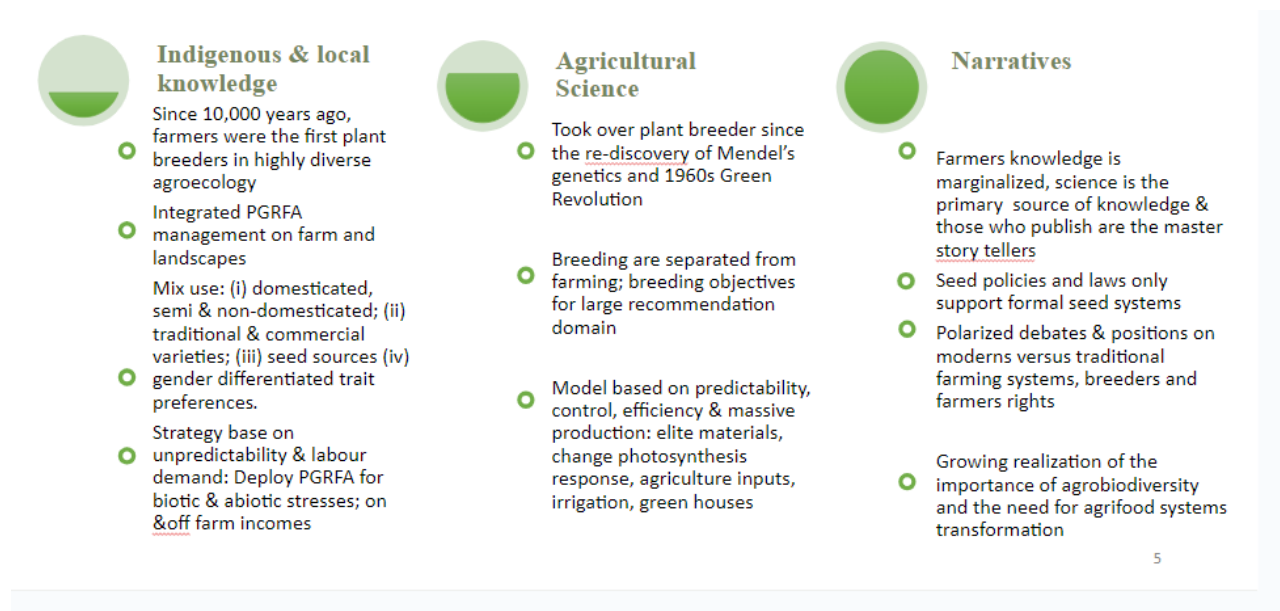
**Figure 2.** Agrobiodiversity as subset of biodiversity with environmental, economic and social benefits (Source: conference presentation – Duncan Macqueen)

### 3.2. Addressing the complexity and challenges in advancing agrobiodiversity

Despite the importance of agrobiodiversity in both national and international arenas, it is not without complexities and challenges. Through knowledge shared from both ongoing stakeholders further learnt the complexities and challenges associated with emphasis on priorities emerging from initial global dialogues on agrobiodiversity (By Ms. Maria Josefina Guadalupe Manicad) supplemented with country level actions including (i) policies and practical innovations from Asia – Nepal (Dr. Bal Krishna Joshi, Chief, National GenBank, Nepal ) and (ii) addressing constraints among smallholders in Africa Tanzania (by Mr. Damian Sulumo, CEO, Mviwaarusha, Tanzania).

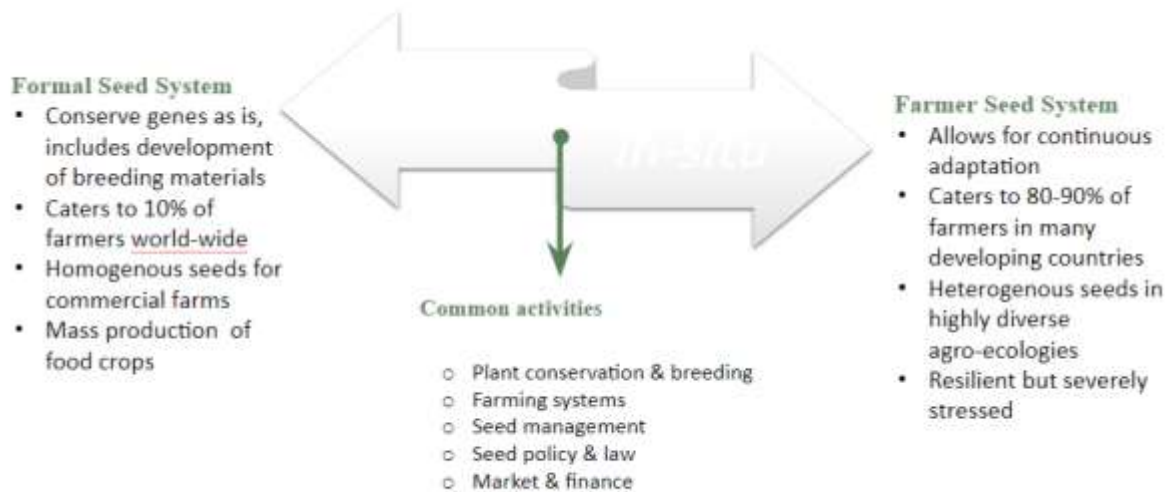
It was noted that there is global interdependence and no self-reliant seed system across the world, calling for synergy between farmer-managed and formal seed systems. Issues related to ownership, management and exchange of plant genetic resources and benefit sharing mechanisms remain key barriers. Furthermore, fragmentation in terminology, knowledge systems and narratives (Figure 3) does not acknowledge the farmers as the original plant breeders. Meanwhile, there are common areas that could be leveraged for integration and consolidation of efforts (see Figure 4).





**Figure 3.** Sources of complexity fragmentation in knowledge systems and narratives as shared at the conference (Source: conference presentation – Maria Josefina Guadalupe Manicad)

There is a global process which attempts to address the agrobiodiversity concept. The process started in the series of global agreements, such as ITPGRFA- Gene position – expression and function, Aichi targets that attempt to integrate biodiversity into development issues. Following the Paris agreement, biodiversity and climate are now often discussed together. Declaration on rights of Indigenous Peoples was a major step forward, and Joint IPCC-IPBES – was the first-time agroecology was mentioned. Nevertheless, managing the commercial rights to genetic material has been challenging. Biodiversity management has been an integral part of the farming system since the very primitive period but there are also fragmentations in in-situ and ex-situ conservation despite the common spots that could be leveraged for integration and synergies (Figure 4). Against this backdrop, it is high time to appreciate the complexities of the plant genetic resources; domesticated, wild and semi-wild, allowing farmers to register the seed which will allow them to enter the seed value chain. To do this, it is recommended to assign policy and investment priorities through improving global governance (mode of benefit sharing), revitalizing public breeding (formal seed systems) and supporting farmer seed systems by allowing them to register their seeds. Emphasis on transition in agriculture through integration of agroecosystem services in our agricultural system, and that agroecology is inevitable. Therefore, it is vital to integrate scientific and indigenous knowledge – manage commercial crops as well as indigenous crops. IP needs to be encouraged to become partners in plant breeding and seed trade.



**Figure 4.** Common spots of knowledge systems despite the fragmentation

From farmers’ perspective, the constraints can be manifold but could be categorized into seven key areas (Figure 5). Despite these challenges faced by FFPOs, they are already contributing to several advances in agrobiodiversity conservation and sustainable use in different contexts.

- Monoculture Farming Practices:** This reduces biodiversity by eliminating diverse plant species and genetic resources.
- Loss of traditional Crop Varieties;** diminishes genetic diversity within crops, making them more susceptible to threats.
- Land Use Changes;** lead to habitat loss and fragmentation, affecting wild plant and animal populations and reducing overall biodiversity.
- Invasive Species:** altering habitat structures, and spreading diseases, thereby threatening native biodiversity.
- Climate Change:** leading to changes in ecosystem composition and functioning.
- Lack of Awareness and Education;** Many farmers, policymakers, and consumers are unaware of the importance of agrobiodiversity leading to inadequate conservation efforts
- Policy and Market Forces** Subsidies, regulations, and trade agreements may carelessly encourage practices that degrade biodiversity

**Figure 5.** Key areas of challenges to agrobiodiversity conservation and sustainable use by smallholders as shared by representatives of FFPOs (Source: conference presentation: Damian Sulumo, Tanzania)

In Asia, specifically Nepal, it was noted that efforts to improve agrobiodiversity starts with policy that supports practices, nationally – and this may provide lessons for other countries:

- Nepal has 28% agriculture genetic resources of the total biodiversity, with agrobiodiversity favorable policy provisions – for example agrobiodiversity forms part of the main pillar in four policies related to agriculture, health, business and environment, proving their worth across these sectors.
- Innovative practices to conserve and utilize agrobiodiversity effectively include agro gene sanctuary, field gene bank, community seed bank, aqua pond genebank, on farm conservation, evolutionary plant breeding, registration of local landraces, among others.
- In addition, policy considerations are enormous including: establishing large agro-gene sanctuary in three agroecological zones, estimating agrobiodiversity index in each district, ensuring market and irrigation facilities, using and promoting geographical indication, establishing himalayan seed bank as safety back up, estimating health index and ecological yield of agriculture genetic resources, etc.

In an African context (Tanzania), unfriendly policies in addition to increase in monoculture, loss of traditional varieties, land use change, invasive species, climate change and lack of awareness are among the key constraints to agrobiodiversity conservation by smallholders – all these constraints contribute in one or another way to loss of agrobiodiversity. Meanwhile, farmers are making increasing effort to adopt agroecology-based farming – this is a key objective of farmer organizations who drive engagement for community sensitization and mobilization for conservation of agroecology. Strategies to improve the situation in Tanzania include the following that may serve as lessons for other countries with similar context:

- Promote policy on agroecological issues together with advocacy, farmers managed seed systems, and more research on biodiversity and seeds.
- Diversification with income generating activities such as beekeeping can help advance agrobiodiversity conservation with benefits from crop pollination services from honeybees and generating additional income from bee products.
- Promotion of alternative energy also has a great potential in agrobiodiversity conservation as it helps reduce overdependence on use of wood for fuelwood.
- FFPOs like MVARUSHA play a vital role in advocating for farmers managed seed systems and provisioning of financial services to farmers to engage in economic activities that directly or indirectly contribute to agrobiodiversity conservation – this in particularly helpful in contexts where significant progress on linking policy to practices is elusive.

**Knowledge contributors to this section:**

- Kamal Kumar Rai
- Maria Josefina Guadalupe Manicad
- Dr. Bal Krishna Joshi
- Damian Sulumo
- Duncan Macqueen

### **3.3. Improving recognition of the importance of agrobiodiversity and its custodian**

Reflecting on the significance of agrobiodiversity (Section 3.1), existing complexities and challenges being addressed (Section 3.2), the following observations and recommendations were drawn on the ways to improve recognition of agrobiodiversity, particularly among local people who are the custodians:

- Agrobiodiversity should be considered as a public good; serving nations – communities conserving it need preferential treatment and subsidies, giving preferences to the custodians, and supporting producer organizations to reduce the cost of maintaining it.
- Other options are to reorganize taxes and subsidies to farmers, introduce Participatory Guarantee System (PGS) for distinguishing commodities that are agrobiodiverse, enhance Geographical Indication (GI) schemes to promote special origins of crops, strengthening community institutions (producers, farmer groups, etc.) through policies and programmes.
- Registration of local seed systems is vital, and this is where deliberate work needs to be done with relevant organizations such as LI-BIRD already working on such initiatives – for example landraces are eligible to get the Geographical Indication (GI) tag with the identification of elite lines and development of new varieties; developing performance of native landraces and finding appropriate market and even GIs; helping farmers to access these genetic resources any time – lessons are that without marketing, it is difficult to conserve these landraces.
- There is the need to invest sufficient genetic resources for education and research noting that much diversity is still not accessible.
- Registration of local seed systems requires in depth consultation to understand local needs of registration, increase recognition of ownership and allocation of global resources – it is noted that Jumli Marshi is used by 76 countries globally with 25000 landraces taken by the world without any acknowledgement to the farmers of Nepal who are conserving and promoting it.

## **4. The role of policies and initiatives shaping agroecology as approach to achieving agrobiodiversity**

### **4.1 Understanding agroecology for agrobiodiversity management**

Agroecology approaches are fundamental to the conservation of agrobiodiversity. This understanding was strengthened through the second technical session of the conference. To start with, the relevant knowledge of agroecology was shared:

- Agroecology represents an unparalleled opportunity to address biodiversity loss while providing multiple co-benefits as it addresses many of the different indirect drivers of biodiversity loss.
- Transformational change is required for moving forward and agroecology is one of the promising pathways – noting that current food system produces about 1/3 of all greenhouse gases and is responsible for 80% of biodiversity loss and these risks are all associated to the dominant model of agriculture that we are in, due to the lock-ins that hinder us from moving to a sustainable path.

- In addition, addressing the sustainability of food systems has significant implications for the three Rio conventions; CBD, UNFCCC, and desertification, as the RIO convention has stated significant implications of climate change to the food system.
- Agroecology, a paradigm shift is a transdisciplinary science, and it is a combination of science, practice and social movement – holistic approach that recognizes both traditional and scientific knowledge, as noted in the preceding sections, anchors the whole food system and is helpful in achieving economic, social and cultural safeguarding which ensures sustainable development and fulfilling the sustainable development goals.
- Agroecology recognizes traditional knowledge and innovations – it has recently gained momentum working in partnership with multiple local stakeholders.
- There is no need for to invent the wheel as our ancestors have already talked about agroecology – evidence-based advocacy for locally adopted diverse food systems is needed, and in this sense, FAO has promoted 13 principles of agroecology while HLPE has 10 elements which all together offer great benefits to agrobiodiversity at various tiers.
- Principles of agroecology should be pursued collectively to bring change in the whole value chain approach – there is an opportunity to transfer towards biodiverse ecosystems, and the transformation process may help empower farmers, change social relations and value addition and reduce distance between consumers and producers.
- Agroecology can promote locally adapted agriculture, resource conservation techniques, ecosystem resilience, Sustainable livelihoods and human rights.

## **4.2 Policy initiatives responding to agroecology**

Stakeholders were introduced to relevant policies, international and national initiatives through presentations, group discussions and panels which focused on both international and local initiatives.

In the international context, the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) was introduced with emphasis on the nexus of agrobiodiversity, landraces, and seed laws. It was noted that the ITPGRFA, to some extent, is FAO's positive response to the Convention on Biological Diversity (CBD) because it focuses on food security, and the need to facilitate access to genetic resources. The Rio Conventions are very interlinked, so ITPGRFA also relates to other conventions beyond the CBD. Entering into force in 2004, the Treaty received 151 contracting parties as of December 2023. Countries like Russia, China, South Africa, Mexico, Colombia, are not currently part of the treaty.

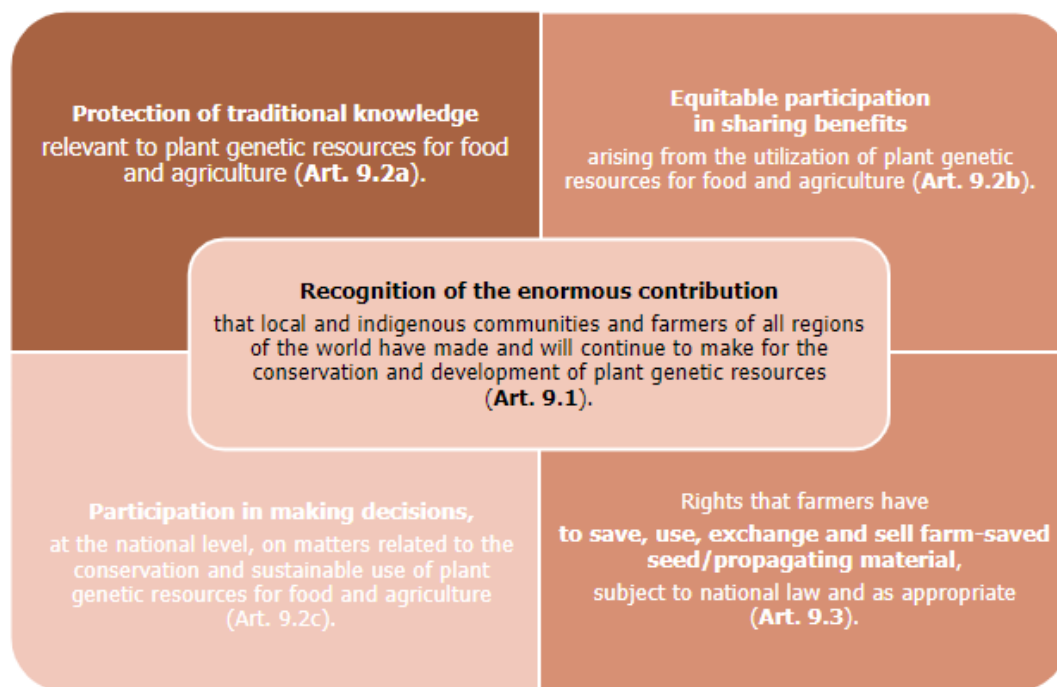
It was noted that no country is self-sufficient, as all countries are interdependent on plant genetic resources which is necessary for ensuring food and nutrition security – a basic human right. More plant genetic resources are necessary for promoting food sovereignty, culture and cultural rights. Conservation and use are interlinked concepts – therefore, promoting the sustainable use and conservation of ALL, and diverse crops (especially of local/traditional crops) is essential for the treaty in increasing the range of genetic diversity available to farmers and promoting conservation of biologically diverse production systems. It should be noted that conservation in the Treaty refers to in-situ but also ex-situ conservation.

For example, Svalbard (Norway) conserves around 1.2 million unique accessions of crops. ICARDA was in Syria and sent the accessions before the war to Svalbard, and this provided the possibility to reuse the material after the war.

Farmers’ right is recognized in a specific Article of the treaty that highlights farmers right and the work done by farmers to protect traditional knowledge, equitable participation in sharing benefits, participation in making decisions, save, use exchange and sell farm-save seed/propagating material in full recognition of the following:

- Recognition of the huge contribution of indigenous communities.
- A significant amount of local diversity can only be maintained in the farmers’ field.
- Benefit-sharing fund – within the international treaty. So far 5 project cycles have been finalized, supporting more than 80 countries including Nepal. This is very important to finance and bolster food security.

## Article 9: Farmers’



**Figure 6.** How farmers right is considered in the ITPGRFA (Article 9) (Source: conference presentation: Marino Mario)

Examples of national initiatives shared include the following:

**Philippines:** In a landlocked municipality of Alaka, a legislative bill was introduced on sustainability (Sustainable Agriculture Code 2017). Key elements of the code focused on protecting and promoting traditional seed systems, community seed banks and seed registration. Laws which do not consider farmers’ rights are tyrannical, therefore, farmers’ voice was later recognized which helped in compliance and promoted recognition of farmer needs and interests. The Arakan used to be dominated by agrochemical companies. However, SEARICE and the Municipality of Arakan co-organized an ordinance-writing workshop for farmer leaders of the municipality. The draft code was then submitted for

consideration and adoption. Provisions included free access to seed for all farmers, facilitating and monitoring access and benefit-sharing as well as protection and promotion of farmers' Rights and ban on GMOs. Today, this regulation stands out among the elusive local laws on agriculture in the Philippines as it actively upholds farmers' rights to Plant Genetic Resources (PGR). Moreover, it appears to be one of the only legislations that has undergone a participatory process engaging smallholder farmers. Arakan farmers see this ordinance as support to their endeavors towards fully embracing sustainable food production methods. Lessons are that farmers need to be considered, not only as beneficiaries but also rightsholders. It is important to give farmers the full opportunity to participate in crafting laws and policies, and that the resulting law/policy considers their situation and becomes more responsive to their needs. There is a lack of policies that look at different elements of agroecology but have been able to pass the programme. Many policies are focusing on agroecology especially at the local level. To address this, there has been a Lobby for a budget at national level to implement agroecology and there is room for engagement of CSOs in this regard. For example, the seed system law amendment. Agroecology is biodiverse and not in focus which needs supporting law/policies and financial support for the preservation of agroecology.

**Nepal:** There are challenges that could be counterproductive to government policy initiatives including the fact that most small farmers/smallholders are subsistence based. Despite interlinked elements (integrated-crop, livestock and agroforests) that are less dependent on external inputs, food and nutrition security are not promising as shown by the survey results. Furthermore, forests are growing but agricultural areas are shrinking. So, effective interventions in the production systems are needed. Emphasis has been given to different policies to address monoculture, hybrids, fertilizers, etc, with major focus on pest management, but there is also implication on human health. A holistic or system approach, such as linking seed to market to address poor market connections, is needed to promote the overall system. This approach encourages the utilization of conservation and strengthens the link to the consumer. Therefore, MoALD is addressing these concerns through a system approach) Organic agriculture is expanding despite the lack of alternatives for farmers in terms of soil health, given the absence of fertilizers and pesticides. There are always trade offs. Key learnings from the Nepal government's effort in creating an enabling environment are highlighted below:

- Emphasis on biodiversity as a whole sometimes leads to underestimation of the importance of the agrobiodiversity component, therefore there are different approaches to addressing different needs, e.g. focusing only on production and not on the system as a whole.
- Talking about CBD places emphasis on forestry, but agricultural areas are also declining, with threat of agrobiodiversity loss – the government has adopted a food system transformation approach.

**Bolivia:** Agroecology is recognized for the design and management of biodiverse agricultural production systems, food systems and territories. Agroecology approaches can vary in size and range but the common element with agrobiodiversity is that it is biodiverse, and enhances productivity, resilience, sustainability, and has the capacity to restore ecosystem functions. Having this kind of design and management has the capacity to conserve and sustainably use biodiversity, to create habitats for domesticated animals and wildlife, and to restore ecosystem functions. Therefore, agroecology as a practice is relevant to many treaties and conventions: CBD, the International Treaty on Plant Genetic Resources for Food and Agriculture, the Convention on migratory species. It also has the capacity to restore water cycles and is very relevant to climate change adaptation and mitigation – therefore, agroecology is also recognized as very relevant for other Conventions such as RAMSAR, UNCCD, UNFCCC. It is not just about food production but also cultural and livelihood promotion. It is very important to consider the NBSAPs because agroecology has documented capacity to conserve and use

biodiversity sustainability. However, agroecology will not solve everything, it needs favorable contextualization to contribute to agrobiodiversity.

**Contributor to this section:**

- Oliver Oliveros, Executive Coordinator, Agroecology coalition
- Mario Marino, FAO Technical Officer
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- Normita Ignacio, Exec. Director, Southeast Asia Regional Initiatives for Community Empowerment (SEARICE), The Philippines
- Sabnam Shivakoti, Joint Secretary, Ministry of Agriculture and Livestock Development
- Georgina Vargas Catacora, Prof. of Agroecology, Bolivian Catholic University, La Paz, Bolivia

### 4.3 Agroecology initiatives and related challenges among FFPOs and IPs

Through preliminary discussions on agroecology initiatives and how FFPOs and IP can effectively contribute, the following were noted.

- Indigenous managed-landscape promotes participatory action research; it can complement the academic research by helping to design agroecology-based landscapes.
- The principle of participation, equity and fairness from 13 principles of Agroecology can be taken as means to conserve the rights of Indigenous peoples and can act as a moral compass.
- A knowledge system is not only agriculture at farm or field level, but at landscape level but it also has practical implications that can be proved using already available action research information – thus agroecology is transdisciplinary.
- Custodians of biodiversity need support in the form of enabling policies, finance/investment to continue what they are doing in different contexts – shared examples are below:

**Nepal:** Agroforests and plantation areas are used to increase the forest cover. Agroforestry examples include products such as: Fodder for cattles; NTFPs such as timur; Forest based enterprises such as Lapsi (Hogplum) candy, Ilo prosodhan/processing, Bel/Marmelos juice, plywood, medicinal plants, broom production from broom grass, Salleaf plate. Agriculture nearby the forests also benefits from enhanced crop production. In terms of benefit distribution, out of the total fund of CFUGs, 20 % fund allocation ensured for conservation, 35 % on livelihoods, these allocations are based on provisions of the Forest Regulation.

**India:** Women farmers are producing their own seeds in India, but there is no market, and they are running a model called RUDI, where the women sell at the same rather than other areas. SEWA India: The importance of various plants for their use to make organic pesticides is disseminated to the communities, and the village is benefiting from selling these plants, thereby increasing their value (RUDI is brand name).



**Vietnam:** To implement agroecology, farmers are being trained on the use of inputs which do not affect the environment, members are taught to reduce the use of chemical and are taught to make organic compost and pesticides, are also trained to maintain diversity in their farms and also capacitated on importance of natural insect to protect the farms; organize the build up water system to control pollution from the production and grow trees on sloppy land area. For marketing, local community members are trained to use the computer and digital marketing system which are being developed including development of QR code to maintain the quality of the product and provide information about the production for quality control.

**Zambia:** Organic fertilizer takes 3 months for plant uptake while chemical only requires a few weeks, organic pesticides from different species mainly neem trees are applied. Farmers use leaves to also help plants to grow well and keep plants intact. oils are degraded and fertility declined because of the use of chemical fertilizer. Making manure by farmers themselves is a cheaper alternative and bokashi can be used as basal dressing as well. Farmers can mobilize local resources and it is cheaper to use the local products. Best solution is to provide the information rather than distribute the fertilizers.

**Nepal:** In model Agroecology villages, LIBIRD is supporting in production of local seeds and registering the seed varieties and helping the farmers in exchange and in the climate adaptation of the crops. The whole village is working on the implementation of different practices on what works for them. The government is sandwiched between two groups who promote chemical use while there is another group which solely has adopted agroecological practices. Soln is an agri enterprise at small community scale which uses innovative solution such as drip hydroponics and women are taught to produce new plant at village level.



**Plate 5.** A section view of working group discussions at the conference.

Despite advances being made, FFPOs are confronted with challenges. The challenges discussed among the working groups at the conference include the following that may fall within the categories:

- Out migration is a major challenge with significant shortage of available labor.
- Production is Small and scattered, and lacks availability in bulk quantities.
- Affordable certification methods or options of Geographical indication/branding/trademark are non-existent or unavailable.
- Local communities are denied access to forests for their livelihoods, and local culture is also affected.
- Hybrid varieties are replacing local seeds.
- There is no diversity in tree species, the focus is only on timber production.
- The land are left barren, increasing incidences of human wildlife conflict e.g. invasion of monkeys, boars, etc.
- Changing food habits are also challenges for livelihoods.
- Technologies are costly to adopt.
- Subsidy in agro-chemicals.
- Misinformation about the uses of fertilizer on the farms.
- Adoption of the agroecological practices is suitable in the household consumption but in large scale that is the difficult.
- Challenges in engaging youths in farming systems (upscale the farming systems).
- Local seeds are not well packaged thus could not compete with the nice packaging of the hybrid ; in local communities the local products are attractive but the climate change is causing loss of many resources; companies are providing hybrid saplings.
- Farmers questioning why and how shift towards the organic system and agroecology leads to more benefits and income.
- Lack of Continental farmers exchange for learning and sharing.
- Inadequate support system for large scale producer on what they needs to be done to change from chemical to organic and agroecological production practices; In countries where there is use on intensive use of chemicals, it is difficult to shift towards the more sustainable organic practices and generate equal profit.
- Lack of large scale program to provide technical support which are less labor intensive, especially for women; cooperatives can play role to add value.
- Certification is also very expensive.

Based on the presented challenges, key recommendations on how to help FFPOs were noted as:

- Ensuring sustainable evidence-based learning and advocacy requires effectively engaging in genuine dialogue and partnerships that involve research, consumers, media, and the education sector.
- Policy advocacy for creating an enabling environment.
- Integrating and coordinating sectoral ministries through cross-sectoral and multistakeholder land use planning and implementation.
- Identifying existing or new partnerships could be built to address agrobiodiversity issues.
- Strong law and policies from the government are essential to ensure the conservation of agrobiodiversity.
- Federation, networks, diverse groups, etc. must be provided with technical and financial support.
- Current production needs to be linked with the local value chain through collective partnership.

- Agriculture and Forest based enterprises need to be registered with the Ministry of Industry. E.g Beekeeping, This requires correction through inter-ministerial coordination to ensure structural compatibility.
- Formulating evidence and data-based policy through collective efforts and equal stocktaking among various stakeholders.
- Include consumers in the programs and ensure that the entire educational process emphasizes how it can benefit children's education Advocating the farmers to influence themselves
- School children need to be educated about agroecology practices.
- Establish linkages with the media and influencers at the farmer level.

## **5. Evidence-based practices from the field**

### **5.1 Learning from the field**

The second day of the conference provided an opportunity for the stakeholder to learn in five (5) groups from the Nepal context through a field visit or excursion that aimed at: (i) acquiring field-based insights on innovative examples of agrobiodiversity management (ii) gather success stories that can initiate post-conference discussions and proposals for upscaling of relevant discussions and actions among FFPOs. Especially, FFPO have the chance to fulfill their learning expectations in groups and how to adapt their own strategies in their home countries – these include:

- Learning the process and what has enabled FFPOs to develop and continue production and process for agrobiodiversity.
- How seed banks are being managed for landscape restoration at the local level.
- How the local communities have been able to sustain adopted practices.
- Success stories for proper management of agrobiodiversity, governance mechanism of CFUGs.

Each learning group is made up of stakeholders from diverse professional backgrounds including FFPOs, technical support partners, government representatives, private sector actors in forestry, agriculture, environment – this facilitated the development of common understanding on issues by cross-sectoral and diverse stakeholders. Joint reflection on key observations and learnings from the field visit (presented in section 5) allowed the stakeholder to further discuss and concretize lessons for upscaling upon return to their home countries.

### **5.2 Outcomes of group learning**

#### **5.2.1 Learning from agroecological model village, community forest site and museum**

Learning Group 1 visited an agro-ecological model village, Arba, Pokhara Metropolitan City -13, Kaski; Bhumi-pujne Tisdhunga Community Forest and Agriculture Co-operative limited; and International Mountain Museum under the facilitation of a team Bishnu Bhusal, Rita Gurung, Sara Bastola, Ram Rawol, Anu Sharma, Janak Acharya.

The group shared the following interrelated reflections from their field:

- Processes for biopesticide preparation practiced by farming household
- Local or Indigenous knowledge of farming and some of the agroecological practices and principles adopted by farmers

- Farming systems are composed of mixed cropping, together with the management of bee hives and in most cases, livestock on farm. These provide good understanding on practical ways for diversification.
- The community is optimizing their use of land, with good land utilization plans at individual level.
- Agroecology practices and elements are implemented at different levels – there is government support to the cooperative and forest initiatives with relevant technologies to promote adoption of agroecological practices for livelihoods.
- Areas to improve – (i) Agro-tourism could be promoted if possible, to work hard and smart (ii) if all agroecological elements and principles are implemented in practices, the region will serve as an example of the agroecology interventions.

The Conference participants collectively appreciated the community-based approach for the agroecology and organic farming system. The role of cooperation among the farmer groups in this process was the center of discussion. And, its role in the technology extension, and farmer to farmer knowledge dissemination were highlighted. The participant also highlighted the potential of such agroecological villages in forest farm landscapes to develop as a resource site and to utilize it for evidence-based policy advocacy for policy and legal reforms. In the case of the Bhumipujne CFUG, the queries from participants highlighted the knowledge transfer and stories of claiming the forest tenure right by the community and managing forest sustainably for economic empowerment



**Plate 6.** Photos of Learning Group 1 members interacting with farmers and their innovative activities on agrobiodiversity in the field.

### 5.2.2 Learning from ecosystem-based initiatives on agrobiodiversity conservation and use

Learning Group 2 visited three sites such as Biodiversity Conservation Information Center, Sundari Danda; Maina Thapa- Agro-entrepreneur, and Jay B Thapa, NTFP Entrepreneur; Chaur, Begnas, Pokhara Metropolitan; and The Rupa Lake Restoration and Fisheries Cooperative – under the facilitation of *Santosh Shrestha, Mira Dhakal, Indra P Poudel, Prajwal Shrestha, Uddav Shrestha, Pally Chudhary.*

Key reflections from the field include the following:

- Forests are managed by communities and each community has its forest management and operational plan.

- A field of medicinal plants of Jay Bahadur TAPA and the house of the agro-entrepreneur Maina Thapa shows value addition to crop and plant products including the weaving of yam leaves, the production techniques for beaten rice called Souraoula and parboiled rice soaked in water for 10 to 12 days.
- The value addition provides income for the producers, for example, earning around Nepalese Rupees 800,000 per year.
- The producers have either received training on biodiversity (or inherited the business from their parents).
- The management of the bird protection site at Lake RUPA by a cooperative began in 2005 with 28 species of birds existing, notably migratory birds from Siberia. Today, members of the cooperative produce local rice varieties of which they were able to count and benefit from pollination services provided by 240 species.
- The production site of Lake Rupa covers an area of 35 ha with a depth of 4 meters with 540 aquaculture species including 24 species of fish. The cooperative was founded in 2003 by 36 founding members. Today, it has grown to include 1000 members comprising of , 60% men and 40% women. The aily fish production capacity of the lake is around 100 kg.
- The Lake Rupa cooperative has contracts with hotel to supply fish.–The cooperative also has a collaboration contract with the World Bank and other organizations such as LI-BIRD that support them.
- The Lake Rupa cooperatives has additional activities focused on protection of biodiversity (fauna and flora) and cleaning and demarcation of the lake. However, the main activities are agri-food processing, fishing, machinery and waste management and management of the water lily on the lake.
- Construction of infrastructure around the lake by the Lake Rupa cooperative to improve the sanitary conditions is underway Income obtained from the management supports local schools in the area, and has improved the standard of living of the local communities
- Management of the lake is ensured by 20 communities.

Based on these reflections amongst others, the conference participants remarked the following:

- A rich experience on biodiversity, a rich life in a cooperative, however we remain at our end on the management of these cooperatives for which the elements of answers remain vague.
- In cooperatives, women support each other against violence.
- For communities, the objective of conservation should not just be to conserve for the sake of conservation, but to create added value through the marketing of local products.
- In the discussions, we see that the communities talk first and foremost about their commitment to future generations, this is a good sign.



**Plate 7.** Learning Group 2 interacting with producer organizations. FFPOs-led agrobiodiversity is fundamental for forest and farm enterprise development and vice versa.

### **5.2.3 Learning from agroecological model village and community forest-led sustainable business**

The Learning Group 3 visited an agroecological model village and community forest-led sustainable business with the facilitation team, Anita Gautam, Samiksha Pandit, Mamata Poudel, Kalidas Subedi, Racchya Shah, and Mamata Chaudhary. The group observed the Furketari Community Forest User Group and Furketari Aquifers; Shree Machhapuchhre Uttam Coffee Cooperation Society Limited, Dhikur Pokhari-1, Kaski; and Maramche:

Key reflections are that:

- The Furketari Community Forest User Group and Furketari Aquifers prioritized the engagement of women, which is high, out of 11 Executive Committee Members 9 are women. The women members of the CFUGs are also provided with various capacity strengthening training and programmes.
- Shree Machhapuchhre Uttam Coffee Cooperation Society Limited has the following characteristics
  - Coffee based agroforestry system at household level, more than 20 farmers are producing coffee in this community, marketing of fresh cherries is not a problem.
  - The cooperative provides technical support (pruning, cultural practices, fertilization) to the coffee planters and serves as a center for the collection of coffee cherries and collective processing of the coffee beans.
  - Forest Act of Nepal strictly prohibits plantation of coffee and tea in the community forest
  - The green beans are organic certified and are exported to Switzerland.
  - The price of the coffee is determined by the Nepal Coffee Federation. Currently the price of fresh cherries is NPR 110 (USD 0.82) per Kg and the green beans are sold at NPR 1160 (USD 8).
  - The cooperative aims to increase their annual production from 5 tons to 10 tons and sell coffee grounds to local and national market
  - The visiting team suggested the cooperative to develop proper business plan
  - About diversifying the product: there is a plan to sell the end product (powder coffee) for which they need roasting and grinding machine, which costs around NPR 3.5 million
- The Maramche Agroecological Model Village has the following characteristics:
  - Tunnel farming has been boon for farmers during the rainy seasons, particularly because Pokhara is the region with the most rainfall, farmers are able to grow different veg and boost income
  - No external chemical inputs are used, using 8 different types of fertilizers as per crop requirement and pest/disease infestation
  - Technical support from Pragatishil Cooperative through demonstrations in the learning center, LI-BIRD
  - There is a collective for collection of the vegetable
  - Farmers are conserving seed on their own for the next season, additional are collected from CSB,
  - CSB subcommittee of the cooperative assign the crop species to each farmer for the conservational responsibility
  - More than 50 % members are women, thoroughly involved in decision making and all
  - No such differential price, however vendor prefer their products, come to their place
  - In the process of PGS
  - Seed production of different cold tolerant rice varieties
  - Main Issues of the Cooperative are, climate change, which has affected the timely receipt of rainfall necessary for crop production





**Plate 8.** Group 3 learning about how smallholders manage seed that underpin locally-led agrobiodiversity.

#### 5.2.4 Learning from community forestry initiatives on forest restoration and collective enterprise

In Group 4, the participants visited forest based restoration and collective enterprise with the help of the facilitation team: Hari K Bhattarai, Sunita Thapa, Deepa Gurung, Priyanjali Joshi, Thakur Bhandari, Hari Tandukar, Samikshya Gaire. Three sites were visited including the Bhakarjung Community Forest User Group, Annapurna 3; Shree Machhapuchhre Uttam Coffee Cooperative Society Limited, Dhukurpokhari-1, Kaski; Furketari Community Forest User Group and Furketari Aquifers – with the following key reflections.

Bhakarjung Forest User Group:

- Community forestry users have grown cash crops, mainly cardamom in the open areas of the nearby forests.
- Local farmers are organized into groups, and they engage themselves in intercultural operations and harvesting before the cardamom.
- Farmers get to use the forest products in return for the farmers' contribution in cardamom plantation.
- The profit made from Cardamom production by community forest is shared based on the forest guideline , which states that the community forests needs to allocate 25% of profit for agroforestry management, 35% for the livelihood of farmers while around 35% has to be used for community development.

Shree Machhapuchhre Uttam Coffee Cooperative Society Limited:

- Coffee based agroforestry system at household level, more than 20 farmers producing coffee in the community, marketing of fresh cherries is not a problem.
- The cooperative provides technical support (pruning, cultural practices, fertilization) to the coffee planters and serves as a center for the collection of coffee cherries and collective processing of the coffee beans.
- Forest Act of Nepal strictly prohibits plantation of coffee and tea in the community forest
- The green beans are organic certified and are exported to Switzerland.
- The price of the coffee is determined by the Nepal Coffee Federation. Currently the price of fresh cherries is NPR 110 (USD 0.82) per Kg and the green beans are sold at NPR 1160 (USD 8).
- The cooperative aims to increase their annual production from 5 tons to 10 tons and sell coffee grounds
- And How about Business plan ?
- About diversifying the product : there is a plan to sell end product (powder coffee) for which they need roasting and grinding machine costing around 3.5 million NPR
- A notable lesson from this cooperative was learning how farmers have reduced soil degradation by planting perennial crops which does not involve frequent soil tilling and other disruptive practices thus conserving the environment.
- Farmers are paid on the basis of the amount of coffee cherries they produce. Apart from coffee, farmers are engaged in animal husbandry, beekeeping, and vegetable cultivation simultaneously for the income.

#### Furketari Community Forest User Group and Furketari Aquifers:

- Engagement of women in the community forest was high as out of 11 Executive Committee Members 9 are women. The women members of the CFUGs are also provided with various capacity strengthening training and programmes.
- The Furketari Group produces bottled water from the aquifer in their forest, which serves as a source of income for the group.
- It also promotes other livelihood ventures such as providing water sources in households for livelihood activities such as vegetable farming.
- They are planning to focus on reusability of water bottles for which they plan to adopt glass bottles instead of plastic.
- Wildfires, theft of timber or other products are some of the issues faced by community forest groups which are being addressed by allocating a person to monitor and guard the forest.

Of all 3 forest user groups, there are existing mechanisms for benefit distribution, which include access to subsidized loans, provision of communal infrastructure, specialized support (financial support to Cancer Patient in Bhakarjung) etc. This excursion educated the group on the power of togetherness, as all communities gave remarks on how their involvement in forest protection has been effective and helped to reduce illegal activities.



**Plate 9.** Learning group 4 interacts with farmers and their activities on farm.

### **5.2.5 Learning from community forestry initiatives on forest restoration and collective enterprise**

With the facilitation of Sambat Ranabhat, Dipesh Neupane, Asmita Paudel, and Hem GC, the participants in the last (fifth) group- visited two: Sidhane Agroforestry and Gurung Community. Key learnings shared by the groups are below:

- Panchase area has a beautiful landscape with rugged terrain, agricultural field, lush green community forests and local rich Gurung heritage.
- The area is biodiverse, with traditional knowledge and local innovations still being practiced in their daily livelihoods.

- But the irony is despite having all these, the villages are getting empty and very few families reside there. According to Mr. Gurung, the number has gone down from over 240 families to 42 families within two decades.
- Lack of health facilities and quality education set up are blamed as the culprits.
- Out-migration has greatly affected the community and the surrounding ecosystem.
- Communities have restored 17 community forestry through CFUGs, however, complain about limited access to the forest products.
- Incursion of wild animals such as monkeys, boars, deers, etc. causes loss and damage to their standing staple crops and vegetables, which was not the case when the communities were full of people in the recent past.
- Locals were very unsatisfied with forest division and their roles which are not CFUGs friendly.
- Along with community forestry management, local Gurung people have run a Gurung Museum, a cultural treasure to showcase their history and tradition.
- Sidhane community started a homestay less than a decade ago, which has also provided a good source of income for them. Guests are served with local cuisine with chemicals free produce.
- Even there, migration has left them only with 7 families, where there used to be 70 families.



**Plate 10.** Group 5 on site learning with farmers on the ground.

## 6. Strengthening and Sustaining FFPOs-led agrobiodiversity

### 6.1. The role traditional knowledge systems and exchange

A framework for biocultural heritage (traditional knowledge, and languages, biodiversity, landscapes, cultural and spiritual) was introduced at the conference with the following insights:

- Empirical knowledge about local ecosystems and biodiversity developed over centuries and millennia.
- Ancestral knowledge and new knowledge/innovation co-exist.
- IPLCs started domesticating crops and livestock over 10,000 years ago – creating rich agrobiodiversity and related traditional knowledge (breeding, planting etc) from centers of domestication.
- Cultural and spiritual values – underpin agrobiodiversity conservation (e.g. sacred forests).
- Examples of such values include: Collectiveness, Sharing, Reciprocity, Solidarity, Balance – with nature and in society (SIFOR, 2012-2017)
- Important for maintaining diverse seeds and exchange of traditional knowledge.
- When transitioning to cash crops, remaining traditional crops are often conserved due to cultural and spiritual values (e.g. festivals, rituals).
- Traditional knowledge underpins agroforestry (e.g. home gardens, coffee, milpa, cardamom) – fundamental to indigenous culture and spirituality.

Cases from around the world shows the importance and need for recognition and strengthening of traditional knowledge in advancing agrobiodiversity management:

***Integration of indigenous agroforestry knowledge systems and practices in research and development for scaling out/up sustainable management of agrobiodiversity/agro-ecosystem in Nepal*** – traditional agroforestry systems from mid hills from Nepal, comprise three key components namely agricultural land, livestock and forest (trees). These are mutually reinforcing and inseparably integrated. Agri silvicultural, silvopastoral and agrosilvopastoral system are three types of systems that are commonly practised in the mid hills region. However, the most dominant one is agrisilvicultural system. There are other systems involving cash crops and forest trees, and home gardens that has emerged under tremendous pressure and started to disintegrate. Some examples include animal draught power being replaced by machines and fertilizers; firewood replaced by cooking gas, iron and steel; human wildlife conflict and abandonment of farmland due to demographic shift. About 30-34% of farmlands is abandoned in Nepal and there are equally significant climate risks and feminization of agriculture. The blending of traditions with new ideas and innovations to offer solutions for these problems is imperative. We will only be able to conserve agrobiodiversity if it is linked with the economy.

***Traditional farming system adopted by their ancestor Hyolmo community*** – In Helambu rural municipality in Sindhupalchowk district, traditional farming system are adopted by their ancestor Hyolmo community which is termed as agrobiodiversity conservation in the present context. Local farmers have been practicing and promoting traditional knowledge and innovations such as wooden plough, seed storage technique, implements such as hoe, etc. Farmers have adopted an integrated farming system with agriculture and livestock. There are practices in conserving local knowledge including crops such as maize, potato, buckwheat, radish, millet, rapeseed, soyabean, and bean. Traditional knowledge doesn't affect

our ecosystem and climate. Earth is in safe hands with traditional knowledge passed on the generations of farmers. Farmers are adopting crop diversification by introducing new relevant varieties and intercropping with other crops. *“It is a traditional and modern combination for profitability....if Mother Earth is not saved, we cannot live here”* – said Mr. Ongdi Dorje

***Traditional knowledge of agrobiodiversity and agroforestry and knowledge exchange practices in Cameroon/Africa*** – Traditional knowledge play a significant role in agrobiodiversity systems practiced by the farmers in Cameroon, and this traditional knowledge is being passed on from generations to generations in their communities. For instance, farmers select and preserve indigenous seed varieties in their local condition. *Other* practices entail soil conservation methods, crop rotation and intercropping through legumes, and pastoralism practices, which is rotational grazing allowing vegetation to regenerate for biodiversity conservation, breaking the life cycle of certain parasites. Local pastoral farmers cultivate crops using livestock manure in the farms. They have adopted agroforestry systems with crops, trees and livestock, and millets with sorghum and baobab trees. Trees are planted at the boundaries of the agricultural land as in taungya system, and act as fences protecting their crops from livestock incursion as well as wind. In some areas, the fields are left fallow and allowed to regenerate. From all indications, there is the need to promote traditional knowledge, which can be achieved through:

- Community engagement and intergenerational learning- facilitation between different age groups.
- Documentation and preservation - recording knowledge through books, audio-visuals, and other digital platforms.
- Partnerships and collaborations - researchers institutions and relevant stakeholders to understand, protect and promote.
- Education and awareness- integrate traditional knowledge into formal and informal education systems.
- Policies and investments for agroecology promotion

It must be noted that *“Indigenous communities’ knowledge is slowly being eroded or adapted, partnerships with research institutions are important to support the preservation of this important knowledge”* – Ali Aii Shatu.

***Revitalising traditional knowledge for agrobiodiversity conservation in the Potato Park biocultural territory in Peru*** – Traditional knowledge of Quenchua communities on agrobiodiversity from the Andes Mountain range in Peru include potato park from Cusco Peru. There are six of such communities engaged in potato farming and diversity conservation at landscape level in 9,200 hectares. Potato farmers have conserved approximately 1,400 varieties in their own landscape. It was noted that the local farmers are self-sufficient in their production, however, the Covid incidence and climate change have slightly impacted their food and nutrition security. The communities have maintained biodiversity at landscape level and act as an in situ genetic reserve. They also established potato guardian groups to conserve the diversity of potatoes, which is also balanced by the presence of sacred mountains and locals' belief in them. There are also benefit sharing mechanisms between villages according to the customary laws. They have practiced celebration of the spirit of the potato among each family enriching traditional knowledge. Research and documentation of such traditional knowledge has been initiated, and community databases are being developed, which future generations can use. Lessons from potato park include the following.

- Use a series of community-based systems and processes to maximize profit and share the benefits.
- Collectiveness and reciprocity are the bases for the benefit sharing.

- The Biocultural Heritage areas are being scaled up and spread to ensure other areas can benefit from the cultural and biodiversity conservation that they promote.

One Andes community has signed an agreement to link biodiversity heritage to access and benefit sharing mechanisms, and the key feature is generally used by the scientific community, and to get access from the international potato center which gives back genetic resources for livelihoods and products for the market. Customary laws promote sharing and reciprocity at community level to strengthen seed systems. Important is the territorial boundary, CSB and registration which are managed to influence the regional law by Cusco communities.

**Knowledge contributors to this section:**

- Krystyna Swiderska, IIED
- Dr. Balaram Thapa, Senior Advisor, LI-BIRD
- Mr. Ongdi Dorje, Member of the Nekota Farmer Group, Helambu
- Ali Aii Shatu of IIFB and Gender and Women Coordinator Mboscuda, Cameroon
- Alejandro Argumedo, Asociación ANDES, Peru

## 6.2 Management techniques and innovations for sustaining agrobiodiversity

Seed and farm management techniques are vital in safeguarding sustainability of agrobiodiversity. The conference allowed the participants to gain knowledge on existing techniques, drawing lessons from successful and scalable experiences.

There are formal and informal seed systems that contribute to national seed systems. Farmers themselves are putting efforts for seed conservation but there is the need to advocate for policy change, which is inevitable for seed registration. A small shift in policy to increase recognition of such efforts can yield a positive impact on the national seed systems as the formal seed system is often not farmer friendly. Local Seeds serve as a resource for developing new crop varieties that are more resilient in the face of changing climate. Farmers are adopting innovative ways of organizing themselves, conserving and promoting local seeds and optimizing the use of local agrobiodiversity. Examples can be drawn from Asia (e.g. Nepal, China, India), Africa (e.g., Mali), and international context, amongst others.

In **Nepal**, farmer-managed seed systems play a significant role. The formal seed sector is limited to major staples (rice, maize and wheat), and few commercial vegetables whereas the majority of small farmers rely on the informal or farmers managed seed systems. The sector contributes only 22% seed supply with the rest belonging to the informal sector mainly among community seed banks and community-based seed producer groups. Such banks and groups play a central role in the informal seed sector, contributing to the agrobiodiversity management in Nepal. In view of this, organizations like LI-BIRD have been prioritizing the CSBs promotion across project areas for agrobiodiversity management and strengthening the local seeds system. LI-BIRD has been supporting the communities in the registration process of local seeds, necessary for seed business and other opportunities. Drawing on experience from an association formed by uniting 27 CSBs across Nepal, key insights were provided regarding CSB:

- Contribute to the conservation, promotion and utilization of local seeds.
- Local crops are registered to the national seed systems, and their germplasm are even conserved in the national gene bank of Nepal.



- Over 19 local crop varieties have been registered under the national seed board with the collective efforts of CSBs and new 5 crop varieties are in the process of registration.
- There are various challenges in the pursuit of local seed system promotion and seed related enterprises, which include climate change, migration, lack of technical capacities, wild animals, unfavorable policies, among others.
- However, CSBs have actively supported the smallholder farmers by supplying local seeds during the 2015 Nepal earthquake and Covid-19 resurgence.
- The Department of Agriculture, Nepal Agriculture Research Council, National gene bank, Agriculture knowledge center and Centre for Crop Development and Agro Biodiversity Conservation along with LI-BIRD have played significant roles in institutionalizing the CSBs in Nepal.
- Today, five CSBs are being facilitated during agrobiodiversity week in 2024 that has further motivated local seeds promotion.
- Seed exchanges, capacity building and collaboration with local and national governments as some of the cornerstone priorities of the CSB network in the coming days, and conservation will only be successful if CSBs can be linked with income generation.

Farmer Seed Network in **China** has been sowing seed that safeguards security and diversity (from PPB to Farmer Seeds Network) through a participatory plant breeding for the network. Notably, the formal seed system is dominant in China, and in co-existence with the farmers managed seed system but the latter receives very little attention from concerned stakeholders. Both seed systems (formal and farmer managed) need to be complementary and go together. The farmers' seed system can play a pivotal role in local seeds conservation, innovation and sustainable use, particularly, in the face of a narrowing genetic base of major cereal varieties. Focusing on local farmers and indigenous communities; and linking it with the formal system can together make the national seed system resilient with agroecology being the solution to address all these interconnected problems.

The speaker from the National Seed Savers Network in **India** shared an instance when she was approached by a group of farmers seeking for local cotton seeds for organic farming. It was deduced that farmers are not just producers; they need far better appreciation as seed champions. They hold the power of observation and selection leading to the development of varieties through years of dedication at their own farms. The National Seed Savers Network has been documenting the seeds keepers in India. Diversity between and within the crops has been created by farmers after examining the characteristics of crops and selecting them, keeping the seed, growing them and multiplying to maintain the variety. Farmers are not recognized in a way to complement their work in terms of maintenance of seeds and varieties, meanwhile in the last 3000 years, no new crop variety has been found but the varieties have been maintained by farmers. *Seed keepers Initiative like in India can be promoted in connecting it to the global seed keepers.*

In **Mali**, learnings from improving farmers' vegetable seed production and management by farmers goes hand in hand with organization led action-research and innovation on agroecological practices.

These examples provide lessons around the following:

- The importance of the farmer seed system, formulating our seed policy, and seed regulation.
- For integration between formal and informal seed systems, governments need to provide support and create an enabling policy environment.
- Gathering and networking is needed for horizontal upscaling; however, theory contextualization

is necessary, and so is finding ways to engage policy makers who are often not interested in agroecology and agrobiodiversity.

- Strengthening the institutions and building social capital, networking is crucial, and one platform like FFF where global or regional network development partners come together is important.

**Knowledge contributors to this section:**

- Dr. Pratap Shrestha, Program Specialist, Seed Systems and Plant Genetic Resources, Seeds Change, Canada (Formerly USC Canada)
- Mr Bharat Bhandari, LI-BIRD; Hamidou Traore, UNCPM (FFPO representative)
- Yiching Song, Farmer Seed Network in China
- Ms. Parbati Bhandari, Chairperson, Community Seed Bank Association of Nepal, Representative from Farmers
- Shamika Mone, Inter-continental Network of Organic Farmers Organisations (INOFO) President

### 6.3 Enterprise innovations to incentivize diversification

As noted from the above section, agrobiodiversity-based entrepreneurship supports SDGs while addressing the need for income generation in rural communities, women led enterprises, empowering producers and consumers, and impacting policies and budgets. This is reflected in examples shared from Ghana, Nepal, Bolivia

In **Ghana**, it is recognized that agrobiodiversity-based farming can reduce risks and provide more stable income, resulting from diverse products. But there are several problems affecting the diversification of farmers, and these include i) Inadequate access to finance for investment into value chain and productive activities, ii) High interest rates, iii) Low market linkages, aggregation and value addition services, iv) Ineffective mobilization of farmer groups, and v) Climate associated risks. These factors can miserably affect the farmers' livelihoods. The solutions exist with the financial cooperatives which play significant great role in financing cooperatives in agrobiodiversity management. They can offer multiple services to the local farmers namely access to finance, agricultural inputs and tools, technical assistance and collective marketing of the products. The conference background case study of KANBAOCU reflect how these manifests.

In **Nepal** FECOFUN is a federation networking about 3.1 million forest users through large networks of community forestry user groups that people are mainly dependent on the forests to manage their livelihoods through forest-based enterprises. Forests also hold a significant place along with agriculture to achieve sustainable livelihoods. MoFE and MoALD should work in tandem to generate and implement policies that will benefit both forest and farm producers. Further, boundaries must be increased from agricultural lands to forests, keeping the conservation, promotion and utilization of all aspects at the core. Encouraging investment and innovation by the private sector in agrobiodiversity-based markets presents significant opportunities. . An initiative on marketing of local and indigenous crops is undertaken by private company, Munaa Krishi Limited-Nepal which reflects a huge scope in the agrobiodiversity based agro-enterprises. It points to the need for a market-oriented approach to the sustainable management of agrobiodiversity. This can have positive impacts on livelihoods, environment, national economy and global synergy.

A business strategy is used by El Ceibo in **Bolivia** to ensure the protection of agrobiodiversity in cocoa plantations. In Spanish.

In a nutshell, it should be noted that:

- Finances are very important for agrobiodiversity conservation, and local indigenous farmers need to have access to financial mechanisms.
- Government line ministries like MoFE and MoALD should work jointly to promote forest based enterprise for improving livelihoods of people living at the interface of forests and land.

**Knowledge contributors to this section:**

- Dr. Popular Gentle Bhusal, Environment Advisor to Rt. Hon. PMO
- Clifford Amoah Adagenera, KANBAOCU
- Thakur Bhandari, Chairperson, FECOFUN
- David Cahuana, General Manager - Central de Cooperativas el Ceibo RL., Bolivia
- Sita Pandey, Munaa Krishi Limited, Nepal

#### **6.4. Nature finance: a pathway to improving flows towards FFPOs-led agrobiodiversity**

Finance for agrobiodiversity remains critical to the conservation, restoration and sustainable use of agrobiodiversity. It overlaps and is partially a subset of climate finance. It also overlaps and is partially a subset of development finance. Agrobiodiversity finance mechanisms can benefit smallholders engaged in agrobiodiversity conservation by investing in diversification, strengthening solidarity, empowering women, increasing climate resilience, and building financial track records, increasing access to external finance. There is the need of enabling external climate investment for the climate-biodiversity-development nexus. In addition, smallholder and indigenous people's owned finance mechanisms must be unlocked so that it will decrease their dependency on the external source for funding their initiatives for agrobiodiversity conservation to ensure sustainability of it.

To recognize the full potential of FFPOs, the catalytic role of family farmers along with ensuring participation in decision making processes needs to be strengthened through provision of direct and better funding opportunities for enhancing the family farmers' resilience. Access to finance, capacity building and policy solutions can really enhance their resilience. They receive only 0.35 % of international climate funds while producing 80% of the global food. The climate crisis is alarming nations around the world and this calls for efforts to design food system transformation to be more biodiverse and resilient to climate risks and disasters. It will be very helpful to maintain the agrobiodiversity in the rural areas through provision of tailored finance. FFF can propel this agenda forward and a new strategic line of WRF can also ensure the effective participation of family farming in the climate change and biodiversity agenda.

Using Nepal as an example, several lessons can be drawn regarding nature-based financing options, challenges, and evidence for agroecological farming and agrobiodiversity conservation. Biodiversity is needed for nourishing the people and revitalizing the planet. Land degradation is a major issue in Nepal as fallow land and further degraded ones has resulted in loss of 50% of the native varieties. Unlike forest and wildlife, agrobiodiversity cannot be conserved by fencing, it needs selection and evolving. Smallholder farmers are conserving agrobiodiversity at their own cost, which is injustice as a big ex-situ

conservation is being funded. There are no funding schemes for the farmers' registered seeds, and hence requires alternative and market-based financing like payment to ecosystem services, agrotourism and agrobiodiversity incentives. On-farm agrobiodiversity conservation can only be done by the farmers. Farmers are the major factors to conserve farm diversity by seed exchange and continuous selection of crops. Positive initiatives are being considered in Nepal even though the funding amount is very small. All the local bodies have allocated some budget for agrobiodiversity conservation because of continuous advocacy and efforts.

There are some issues regarding strong policies/ plans in terms of agrobiodiversity conservation and limited public funding. We need to integrate the principles and elements of agrobiodiversity into programs, policies and plans of the Government to ensure sustainable financing. Nepal's economy is biodiversity dependent and contributes to half of the national GDP. The government enacted NBSAP (2014-2020) but only partial targets were achieved, and the inadequate investment is one of the reasons. There was a big question on the funds spent on agrobiodiversity during the NBSAP period, which was very negligible (almost 0.3% of Nepal's GDP). The BIOFIN project (2023-2030) launched by UNDP is addressing the financial gap in biodiversity conservation. There is a financial gap, which needs to be addressed for further addressing the drives of biodiversity losses. There are various financial solutions, and they need to be prioritized like forest development fund, insurance products for human wildlife, biodiversity management in the community forest, access and benefit sharing, ecological fiscal transfers, etc.

The Nepalese context reflects a general issue in developing countries – agrobiodiversity expenses are not enough, and addressing this gap is necessary. Policies and plans are also not sufficiently addressing this issue. Financing agrobiodiversity is a shared approach and solution should be designed prioritizing agrobiodiversity. To draw a comparison between what happens in developed and developing countries, INOFO's experience can provide insight. INOFO is a group of organic farmers associations across the regions. It is engaged in farmers advocacy and knowledge sharing is also done locally and globally. It focuses on the promotion of local markets focusing on local food systems for transparency, low carbon footprint and sustainable livelihood in all regions. Organic farming conserves more biodiversity compared to conventional farming. Since there is no use of chemical fertilizers, every farm is participating in conservation of agro biodiversity. In Europe, the government calls for funds every year for conservation of agrobiodiversity as it falls in their priority areas while in the developing countries such as Philippines, India, Kenya , Ghana, Brazil, etc., minimum funds can be seen through credit provided by projects only, which is comparatively low in relation to the needs. Access to nature finance is critical for agrobiodiversity conservation efforts globally.

Nevertheless, project-based funding that dominates developing contexts only captures competitive people, who can write strong proposals and local communities are not able as they do not have that kind of capacity to meet the criteria to grab those kinds of funds. Looking at bigger funds, there are rules for the ones who capture the funds. Accredited agencies such as FAO, World Bank, UNDP and UNEP etc. are getting the money. Once the fund passes through accredited agencies, the funds then flow with strict due diligence rules so most local organizations are excluded. The answer would be to insist that a certain percentage of the funding needs to be reaching local communities in order for an agency to be accredited.

The following were noted as answers to relevant questions:

- The focus should be given to self-sustaining models. Market-based innovations are also very important.
- It should be noted that farmers are equal to scientists as they have contributed a lot in terms of conservation of agrobiodiversity. Engaging the farmers in policies planning, decision making and project development is required.
- We need to plan/ think in a way that we do not degrade the environment and not just think about getting the money.
- Mindsets need to change via dialogues, conferences, and conversations to bring the solution if not the blame game will carry on.
- Farmers should be included and brought forwards in forums and spaces like this, which will ensure their voices and concerns are heard, and their needs for funding can be realized.

**Knowledge contributors to this section:**

- Elena Aguayo, World Rural Forum
- Pascale Bonzom, Head, Agriculture Team, IUCN
- Duncan Macqueen, Director of Forests IIED
- Dr. Devendra Gauchan, Honorary Research Fellow at Alliance of Bioversity International and CIAT
- Dr. Bijendra Basnyat, UNDP
- Ms. Shamika Mone is the President of INOFO (Inter-continental Network of Organic Farmers Organisations)

## Concluding remarks

The four-day conference aimed to strengthen the role of FFPOs in advancing agrobiodiversity by bringing people together to share innovative traditional and scientific knowledge on how FFPOs and IPLC organizations can advance agroecological practices, agrobiodiverse planting materials and climate smart business and finance models that enrich nature and nutrition.

The meaning and importance of agrobiodiversity as shared at the event concludes that agrobiodiversity is central to safeguarding present and future survival of human beings. As custodians of the world's remnant agrobiodiversity, smallholder farmers, indigenous people and local communities play a role in integrating ecological resilience, social responsibility and economic efficiency that ensures both conservation and sustainable use of agrobiodiversity. To increase recognition of their important role and contribution, policies and practices shaping agroecology require practical approaches for contextualisation and leveraging on the custodianship of local stakeholders. In contrast, traditional knowledge surrounding agrobiodiversity and seed systems is at risk of being lost mainly due to limited opportunities to transfer to the next generation and to integrate with modern science and technology. There are lessons that could be derived from cases from around the world that were shared at the conference to strengthen and preserve the role of traditional knowledge in advancing agrobiodiversity management. But the conclusion is that fostering the contribution that traditional knowledge is already making – including to national seed systems – requires proactive actions for integration with modern science and technology as equally important elements approaches for conservation and sustainable use of agrobiodiversity, and backed by enabling policy environment that also ensures the involvement of smallholder farmers, indigenous people and local communities in decision making process.

It can also be deduced that FFPOs-led agrobiodiversity that builds on the wealth of traditional knowledge can benefit from FFPO's knowledge sharing and capacity development on seed and farm management techniques that blend formal seed sector mechanisms with informal ones, and modern scientific techniques with local innovations. This in addition with agrobiodiversity enterprise and market development and innovation around agrobiodiversity-based value chains can yield long-lasting results that are beneficial for both local livelihoods and sustainability of agrobiodiversity.

Another important conclusion drawn is that financing agrobiodiversity, either through climate finance, development finance or any other expenditure on conservation, restoration and sustainable use of agrobiodiversity will help advance FFPOs-led agrobiodiversity conservation and sustainable use by investing in diversification, strengthening solidarity, empowering women, increasing climate resilience, and building financial track records, increasing access to external finance. In project-based finance and investment, FFPOs need to be recognized as partners and not just as beneficiaries.

As part of the way forward, the stakeholders at the conference explored existing alliances or the need for a new global alliance that could help advance agrobiodiversity. The following were present at the meeting:

**Alliance of Agriculture for Food (AAF) Nepal:** It is a political agenda rather than a technical one in the case of promotion of chemical free, and nature friendly agroecology-based farming systems. The farming system has moved to modernization, industry based, shifted from mixed to monocropping, and family friendly farming to industry-based farming. Our food system is based on imports from other countries. There is no integration of different sectors that are needed for transformation of agriculture into more productive and resilient. Agriculture is not seen as a part of life, source of nutrition,

conservation and sovereignty. Whatever agrobiodiversity is there, it is saved by local and indigenous communities and smallholders. He also mentioned that AAF is committed to critical analysis of the government plans and programs, and engage in policy advocacy for right to food, seed sovereignty and agrobiodiversity conservation.

**Agroecology Coalition** : this facilitates knowledge exchanges on agrobiodiversity across the countries with key characteristics/activities being (i) use set of evidence to push the policy reforms (issues around nutrition, food system transformation) (ii) Push for funding and financing to increase its accessibility (ii) Creating markets for lesser known crops to build business and enterprise out of agroecology, products produced in a sustainable way finds its way in the market and make decent income, (iii) Make use of the network, groups, alliance to promote agroecology, (iv) Strengthening member countries (more than 49 countries), (v) Make use of networks, knowledge, strengthen the networks and alliances, and (vi) Piloting in few countries then scaling up and scaling out

**LI-BIRD** intervenes in areas such as (i) Agri food systems- food and nutrition, (ii) Biodiversity and ecosystem health- resilient community and landscape- beyond household, and (iii) Climate actions. Forty thousand households benefited directly. Conducting participatory research engaging communities to generate evidence and utilize it for policy interventions, mainstreaming processes and technologies in the national programme level. Known for Participatory plant breeding, community-based biodiversity management, community seed banks and climate resilient agriculture. Adopting agroecology approach- for building strong community institutions and co-creating solutions with the communities. LI-BIRD is part of alliances AAF and ITPGRFA as CSOs member with the aim to be a knowledge hub for agroecology, and climate resilient agriculture.

**International Network of Mountain Indigenous Peoples:** A new alliance is needed to support and continue the network. INMIP fills gaps by focusing on mountain people but is represented poorly in government. Resilient seed system focusing on local farmers and indigenous communities; and linking it with the formal system. Agroecology is the solution, addressing the interconnected problems. Community based agrobiodiversity management is key.

**The Indigenous Partnership for Agrobiodiversity:** With 42% women and 42% youth included in the advisory board, the IPA focuses on the rights of Indigenous people, and conserves nature. Collaborated with LIBIRD for community seed banks promotion for seed system strengthening. Need of new alliance where the voices of indigenous people are heard.

**IIFB:** Facilitates the use of traditional knowledge, and respects and recognizes traditional knowledge. Free Prior and Informed Consent (FPIC) is essential, IPOs advisory bodies at different levels, Revise policies and programs to recognize indigenous communities at landscape approach and ensure full participation of local communities. There should be an advisory body for indigenous people since all the people are marginalized and their voices must be heard. There is also a need for a right based financial mechanism.

## Annexes

### Annex 1. Additional references: presentations, recordings, background and outreach reports

Day/Date	Session topic	Time (NPT)	Presentations (PPTs)	Photos	Recording
<b>Day 1 (Tuesday, 09 April)</b>	Opening session	09:00 - 11:15		<a href="https://drive.google.com/drive/folders/1h6iUWKL_I-3UZaCU86P4HWLVyKYrSwc7?usp=sharing">https://drive.google.com/drive/folders/1h6iUWKL_I-3UZaCU86P4HWLVyKYrSwc7?usp=sharing</a>	<a href="https://drive.google.com/file/d/12jF09lhQdvn0x8W_vDNXgJy6fmOlldEM/view?usp=sharing">https://drive.google.com/file/d/12jF09lhQdvn0x8W_vDNXgJy6fmOlldEM/view?usp=sharing</a>
	<b>Session 1:</b> Agrobiodiversity – What it is and why it matters	11:30- 13:00	<a href="https://drive.google.com/drive/folders/1prxiVDQkOI3TYCN0qPfmXZ062yiLgP1Z?usp=sharing">https://drive.google.com/drive/folders/1prxiVDQkOI3TYCN0qPfmXZ062yiLgP1Z?usp=sharing</a>	<a href="https://drive.google.com/drive/folders/1wdAcweyQWhXoXB7XeY38_jnM2xLhtwrr?usp=sharing">https://drive.google.com/drive/folders/1wdAcweyQWhXoXB7XeY38_jnM2xLhtwrr?usp=sharing</a>	<a href="https://drive.google.com/file/d/189kvllW0CjOYqKV9p9S2OuCP6Nztsu-/view?usp=drive_link">https://drive.google.com/file/d/189kvllW0CjOYqKV9p9S2OuCP6Nztsu-/view?usp=drive_link</a>
	<b>Session 2:</b> How policies shape agroecology approaches that help to protect and manage agrobiodiversity for better or worse	14:00-19:30	<a href="https://drive.google.com/drive/folders/1OHE5q4UEmddoXsbDvU63H9TcETQp9drK?usp=sharing">https://drive.google.com/drive/folders/1OHE5q4UEmddoXsbDvU63H9TcETQp9drK?usp=sharing</a>	<a href="https://drive.google.com/drive/folders/1li8dId9Vo3TMomC43ziQfl3DcgC3B-V?usp=sharing">https://drive.google.com/drive/folders/1li8dId9Vo3TMomC43ziQfl3DcgC3B-V?usp=sharing</a>	<a href="https://drive.google.com/file/d/1x5-gMdSoQvSziWwAzPm3MYq583ZRhhn4/view?usp=drive_link">https://drive.google.com/file/d/1x5-gMdSoQvSziWwAzPm3MYq583ZRhhn4/view?usp=drive_link</a>
<b>Day 2 (Wednesday, 10 April)</b>	Field visit and excursion	08:30-17:00		<a href="https://drive.google.com/drive/folders/1kl_b-NLCY9P01FJWMU9TYwGWpVVpMkzv?usp=sharing">https://drive.google.com/drive/folders/1kl_b-NLCY9P01FJWMU9TYwGWpVVpMkzv?usp=sharing</a>	
<b>Day 3 (Thursday, 11 April)</b>	<b>Session 3:</b> Traditional knowledge of agroforestry systems and knowledge exchange practices that maintain agrobiodiversity	09:00-11:30	<a href="https://drive.google.com/drive/folders/1H3A VAHifJI0okPVI0j7oakHqkzUqi-gh?usp=sharing">https://drive.google.com/drive/folders/1H3A VAHifJI0okPVI0j7oakHqkzUqi-gh?usp=sharing</a>	<a href="https://drive.google.com/drive/folders/1buZn8zyanPIVuxuRlqYSckmT-KLOeQ50?usp=sharing">https://drive.google.com/drive/folders/1buZn8zyanPIVuxuRlqYSckmT-KLOeQ50?usp=sharing</a>	<a href="https://drive.google.com/file/d/1K_u1ly_1A2ajxEdWqonOfW9cbw1fUSvQ/view?usp=sharing">https://drive.google.com/file/d/1K_u1ly_1A2ajxEdWqonOfW9cbw1fUSvQ/view?usp=sharing</a>
	<b>Session 4:</b> Seed and Farm Management Techniques and Innovations to Sustain Agrobiodiversity	11:30-13:00	<a href="https://drive.google.com/drive/folders/15dmLdurzrNrbGi5cAEMAHjSu0lfNmWC7?usp=sharing">https://drive.google.com/drive/folders/15dmLdurzrNrbGi5cAEMAHjSu0lfNmWC7?usp=sharing</a>	<a href="https://drive.google.com/drive/folders/1JHflwff5VCgTzdmLRS9Z-2VRtlxkOsA?usp=sharing">https://drive.google.com/drive/folders/1JHflwff5VCgTzdmLRS9Z-2VRtlxkOsA?usp=sharing</a>	<a href="https://drive.google.com/file/d/1NX7AWgS7zkEe8pDRD_X7VJvY2akeXLe/view?usp=drive_link">https://drive.google.com/file/d/1NX7AWgS7zkEe8pDRD_X7VJvY2akeXLe/view?usp=drive_link</a>
	<b>Session 5:</b> Enterprise innovations that encourage	14:00-15:30	<a href="https://drive.google.com/drive/folders/1Gk_5dZIXCil6_y-">https://drive.google.com/drive/folders/1Gk_5dZIXCil6_y-</a>	<a href="https://drive.google.com/drive/folders/1BfXKvz6hkCtreT">https://drive.google.com/drive/folders/1BfXKvz6hkCtreT</a>	<a href="https://drive.google.com/file/d/1-ijvFRcB8hd4BrGUbr">https://drive.google.com/file/d/1-ijvFRcB8hd4BrGUbr</a>



	diversification in what is planted		<a href="https://drive.google.com/drive/folders/1kZd8nrYMhE8Lt8QP_8jPOZ6fl5uhcPy?usp=sharing">zKJsz4t_Ri17l0U7X?usp=sharing</a>	<a href="https://drive.google.com/drive/folders/1DMMSBZqBOOKJAxeOHW-o54omuwAJnrg3?usp=sharing">ak5SIO9Cfk8T-un1c2?usp=sharing</a>	<a href="https://drive.google.com/file/d/112jvKA FztZvuXkDF_VQczyl ah4ntk2tX/view?usp=drive_link">W4E9MA2IZzYn7W/view?usp=sharing</a>
	<b>Session 6:</b> Nature finance – improving flows to FFPOs and IPLCs	16:00-17:30	<a href="https://drive.google.com/drive/folders/1kZd8nrYMhE8Lt8QP_8jPOZ6fl5uhcPy?usp=sharing">https://drive.google.com/drive/folders/1kZd8nrYMhE8Lt8QP_8jPOZ6fl5uhcPy?usp=sharing</a>	<a href="https://drive.google.com/drive/folders/1DMMSBZqBOOKJAxeOHW-o54omuwAJnrg3?usp=sharing">https://drive.google.com/drive/folders/1DMMSBZqBOOKJAxeOHW-o54omuwAJnrg3?usp=sharing</a>	<a href="https://drive.google.com/file/d/112jvKA FztZvuXkDF_VQczyl ah4ntk2tX/view?usp=drive_link">https://drive.google.com/file/d/112jvKA FztZvuXkDF_VQczyl ah4ntk2tX/view?usp=drive_link</a>
<b>Day 4 (Friday, 12 April)</b>	Closing session	11:30-12:00		<a href="https://drive.google.com/drive/folders/1KfZ_iSqZ7kMpAy534beJbBksiuix_HOF?usp=sharing">https://drive.google.com/drive/folders/1KfZ_iSqZ7kMpAy534beJbBksiuix_HOF?usp=sharing</a>	<a href="https://drive.google.com/file/d/1EKZ9EiIHDenOZVBFgLgsjJ8CfHpMj8P/view?usp=sharing">https://drive.google.com/file/d/1EKZ9EiIHDenOZVBFgLgsjJ8CfHpMj8P/view?usp=sharing</a>  <a href="https://drive.google.com/file/d/10G4zvzbfZ8cu0ZqGlh8jK-Z6HTgiYERd/view?usp=drive_link">https://drive.google.com/file/d/10G4zvzbfZ8cu0ZqGlh8jK-Z6HTgiYERd/view?usp=drive_link</a>
<b>Further information</b>					

- I. More information on the Conference on Forest and Farm Facility website: <https://www.fao.org/forest-farm-facility/news-and-events/agrobiodiversity-conference/en/>
- II. Press release (FAO Forestry): <https://www.fao.org/forestry/newsroom/news-detail/international-conference-on-agrobiodiversity-begins-in-nepal/en>
- III. Audio interviews: <https://comdevasia.org/for-newsletter/international-conference-on-agrobiodiversity-set-on-april-9-12/>
- IV. The conference website as a repository for conference outcomes: <https://agrobiodiversity.libird.org/>
- V. Background report: <https://www.iied.org/sites/default/files/pdfs/2024-02/22251iied.pdf>
- VI. Link to interviews: <https://drive.google.com/file/d/1AN0ehD1ezr51Zet5hkvGwQrZ2p5qPuvQ/view?usp=sharing>
- VII. National press releases:
  - a. <https://onlineradionepal.gov.np/2024/04/09/480480.html>
  - b. <https://nagariknews.nagariknetwork.com/social-affairs/1432420-1712655711.html>
  - c. <https://everestawaj.com/2024/04/09/88425/>
  - d. <https://www.youtube.com/watch?v=d5dYNolq25I>
  - e. <https://www.onlinekhabar.com/2017/12/645894>
  - f. <https://pokharaclick.com/2024/04/09/37261/>
  - g. <https://www.ratopati.com/story/420970/pokhara>
  - h. <https://everestawaj.com/2024/04/09/88425/>
  - i. <https://gorkhapatraonline.com/news/103183>

## Annex 2. Final program of the conference

Time	Session	Objective(s)
08:00 – 09:00	Registration of the participants	
09:00 – 09:30	<p>Chairing and Inauguration of the conference            Chair: Honourable Nawal Kishor Sah Sudi, Minister, Ministry of Forests and Environment, Government of Nepal</p> <p>Guest of Honor: Honourable Jwala Kumari Sah, Minister, Ministry of Agriculture and Livestock Development, Government of Nepal</p> <p>Guest of Honor: Ken Shimizu, FAO Representative for Bhutan and Nepal</p> <p>Guest of Honor: Luis Miguel Aparicio, FFF Manager, FAO</p> <p>Guests:</p> <ul style="list-style-type: none"> <li>· Dr Govinda Prasad Sharma, Secretary, Agriculture, MoALD</li> <li>· Dr Tanka Prasad Prasai, Secretary, MoALM, Gandaki Province</li> <li>· Dr Ramchandra Kandel, Secretary, Forests and Environment MoEFSC, Gandaki Province.</li> <li>· Mr Thakur Bhandari, Chairperson, FECOFUN</li> <li>· Dr Pratap Shrestha, Chairperson, LI-BIRD</li> </ul>	<p>Chairing of the inaugural session</p> <p>Inauguration of the conference: National Anthem of Nepal and Lighting the Lamp</p>
09:30 – 09:45	Welcome Remarks: Badri Raj Dhungana Joint Secretary, MoFE;	
09:45 – 10:00	Video presentation on agrobiodiversity -FAO highlight	
10:00 – 10:10	Inaugural address: Luis Miguel Aparicio, FFF Manager, FAODr	Brief introduction to Forest and Farm Facilities and

10:10 – 10:20	Inaugural address: Duncan Macqueen, Director of Forests, IIED: background report framing agrobiodiversity management	The objective of the Conference covers FFF program and conference theme
10:20 – 10:30	Inaugural remarks: Mr. Thakur Bhandari, FECOFUN	
10:30– 10:40	Inaugural address: Mr Ken Shimizu, FAO Representative for Bhutan and Nepal	
10:40-10:50	Inaugural address: Honourable Minister for Ministry of Agriculture and Livestock Development, Government of Nepal	
10:50-11:00	Closing remarks of inaugural session: Honourable Minister for Ministry of Forests and Environment, Government of Nepal	
11:00 – 11:30	Group Photo and Coffee Break	
Time	Session	Description
<p><b>Session 1: Agrobiodiversity – What it is and why it matters.</b></p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>• To reflect on the general importance of agrobiodiversity management led by forest and farm producers both in Nepal and globally, and to highlight emerging concerns such as the expansion of monoculture systems and the increasing fragility of those systems to climate change in ways that threaten global food security.</li> <li>• Agrobiodiversity is what feeds, fuels and furnishes humanity with natural products and ecosystem services (where agriculture is now the largest land use). The session will involve five speakers who will: present the importance of agrobiodiversity from an Indigenous perspective; introduce a framework for agrobiodiversity management; summarize prior conference outcomes from global programmes on agrobiodiversity; introduce agrobiodiversity policies and practice innovations in Nepal; Outline some key constraints to agrobiodiversity conservation from an FFPO perspective. The framework for considering agrobiodiversity will include policies, traditional knowledge, seed and agronomy, enterprise development strategies, and financing. That framework shapes the subsequent sessions of the conference – and each session is to be informed by FFPOs' experiences - to set the scene for the focus and theme of this conference.</li> </ul>		
11:30 – 11:35	Moderator: Dr. Ram Krishna Shrestha, Joint Secretary, MoALD	Introduction of the speaker and panellist
11:35 – 11:50	Kamal Kumar Rai and video welcome from IIFB: the importance of agrobiodiversity from an Indigenous perspective (15 minutes)	Speech and Video

11:50 – 12:05	Duncan Macqueen, Director of Forests, IIED: background report framing agrobiodiversity management	PowerPoint presentation
12:05 – 12:20	Maria Josefina Guadalupe Manicad, Consultant/ expert: Priorities emerging from prior conversations on agrobiodiversity (15 minutes)	PowerPoint presentation
12:20 – 12:35	Dr Bal Krishna Joshi, Chief, National Genebank, Nepal: Agrobiodiversity policies and practice innovations in Nepal	
12:35 – 12:50	Damian Sulumo, CEO, Mviwaarusha, Tanzania: Key constraints to agrobiodiversity conservation from a smallholder perspective – and how to address them.	
12:50 – 13:00	Plenary discussion and closing of the session	
13:00 – 14:00	Lunch Break	
<p><b>Session 2: How policies shape agroecology approaches that help to protect and manage agrobiodiversity for better or worse.</b></p> <p>Objectives</p> <p>This session will tackle how policies shape agroecology approaches that help to protect and manage agrobiodiversity (for better or for worse) and for meeting people's needs with sustainable use and benefit-sharing.</p> <p>Agroecology as a systems approach is a potent lever in addressing the complex challenges food production systems pose for biodiversity at multiple scales. It offers a comprehensive approach for countries to fulfill their commitments under the Global Biodiversity Framework (GBF) which sets out an ambitious plan to implement broad-based action to bring about a transformation in our societies' relationship with biodiversity. This is consistent with the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) which provides a framework for the conservation, access, and equitable sharing of benefits from plant genetic resources, and will therefore play a vital role in the implementation of the GBF, and vice versa.</p>		
14:00 – 14:05	Moderator: Ms Katja Vuori, Agricord	Introduction of speakers and panellist
14:05 – 14: 15	Keynote Speaker: Oliver Oliveros, Executive Coordinator, Agroecology coalition: Principles and element of Agroecology	

14:15 – 14:25	Keynote Speaker: Mario Marino, FAO Technical Officer, International Treaty on Plant Genetic Resources for Food and Agriculture – Agrobiodiversity, landraces, seed laws	
14:25 – 14:30	Pannel Speaker: Normita Ignacio, Exec. Director, Southeast Asia Regional Initiatives for Community Empowerment (SEARICE), The Philippines	
14:30 – 14:40	Pannel Speaker: Ms. Shabnam Shivakoti, Joint Secretary, Ministry of Agriculture and Livestock Development	
14:40 – 14:50	Pannel Speaker: Georgina Vargas Catagora, Prof. of Agroecology, Bolivian Catholic University, La Paz, Bolivia	
14:50 – 15:30	Moderated discussion, Q&A, moderator' wrap up	
15:45 – 16:45	Group Exercise: Preliminary discussion of how FFPOs might advance agroecological approaches	Seven working groups centered on the 3 pillars addressing experiences, lessons learned and recommendations
16:45 – 17:30	Key recommendations from working groups	
18:00 – 19:30	Innovation share fair on agrobiodiverse products and approaches	Each participating country and regional and global organisations will display forest and farm products of producer groups and organisations.
19:30 – 21:00	Reception Dinner	

## Wednesday 10 April 2024 – Day 2

<p><b>Field visit and excursion</b></p> <ul style="list-style-type: none"> <li>- Acquire field-based insights on innovative examples of agrobiodiversity management.</li> <li>- Gather success stories and lessons applicable in many FFPOs' contexts and can initiate post-conference discussions and proposals for upscaling of useful actions among the global network of FFPOs facilitated by FFF.</li> <li>- Details of site visit options are attached with the introductory agenda documents.</li> </ul> <p>Field visit notes to be prepared by facilitators assigned for each field visit option.</p>	
07:00 – 08:30	Breakfast
08:30 – 17:00	Field visit and excursion
Field Visit Option 1	<p>Site 1: Agro-ecological model village, Arba, Pokhara Metropolitan City -13, Kaski</p> <p>Site 2: Bhumipujne Tisdhunga Community Forest and Bhumipujne Agriculture Co-operative limited.</p> <p>Facilitators: Parbat Gautam, FECOFUN; and Indra Paudel</p>
Field Visit Option 2	<p>Site 1: Maramche Agro-ecological Village and Annapurna Community Seed Banks</p> <p>Site 2: Furketari Community Forest User Group and Furketari Aquifers</p> <p>Facilitators: Rita Gurung and Bishnu Bhusal, LI-BIRD</p>
Field Visit Option 3	<p>Site 1: Agroforestry based forage production system integrating livestock in abandoned agriculture land Initiative in Kayerbari, Pokhara-23, Kaski</p> <p>Site 2: Shree Machhapuchhre Uttam Coffee Cooperation Society Limited, Dhukurpokhari-1, Kaski</p> <p>Site 3: Bhakarjun community Forest User Group</p> <p>Facilitators: Racchya Shah, FAO and Kali Subedi, FECOFUN</p>

Field Visit Option 4	<p>Site 1: Biodiversity Conservation Information Center, Sundari Danda</p> <p>Site 2: Maina Thapa- Agro-entrepreneur, and Jay B Thapa, NTFP Entrepreneur; Chaur, Begnas, Pokhara Metropolitan City</p> <p>Site 3: The Rupa Lake Restoration and Fisheries Cooperative</p> <p>Facilitators: Santosh Shrestha and Sambat Ranabhat, LI-BIRD</p>
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### Thursday, 11 April 2024 – Day 3

Time	Session	Description
	<p><b>Session 3: Traditional knowledge of agroforestry systems and knowledge exchange practices that maintain agrobiodiversity.</b></p> <p>Objective</p> <ul style="list-style-type: none"> <li>To learn from Indigenous Peoples and local communities about the role of traditional knowledge in sustaining agrobiodiversity-rich farming and agroforestry systems; and how traditional knowledge exchange and transmission can be strengthened.</li> <li>Indigenous Peoples and local communities have domesticated, improved and conserved agrobiodiversity for millennia based on their traditional knowledge and cultural and spiritual values.</li> </ul> <p>This session will explore the vital role of traditional knowledge in maintaining and improving agrobiodiversity and agroforestry systems; and the practices, values and principles that underpin vibrant traditional knowledge systems, including exchange and transmission. It will also explore the threats and drivers of change facing traditional knowledge and how traditional knowledge for agrobiodiversity can be revitalized, including the role of biocultural heritage, markets and enabling policies.</p>	
09:00 – 09:30	Recap and review of Day 2 field visit	
09.30 – 09.50	Moderator: Krystyna Swiderska, Principal researcher and team leader (biocultural heritage), IIED	Introduction of the Keynote speaker and panellist along speech and video
09.50 – 10.10	Keynote - Alejandro Argumedo, Asociación ANDES (Peru). Revitalising traditional knowledge for agrobiodiversity conservation in the Potato Park biocultural territory in Peru. (15 minutes + 5 min Q & A)	PowerPoint presentation

10.10 – 10.25	Keynote – Dr Balaram Thapa, Senior Advisor, LI-BIRD: Integration of indigenous agroforestry knowledge systems and practices in research and development for scaling out/up sustainable management of agrobiodiversity/agro-ecosystem in Nepal [10 min + 5 min Q & A]	PowerPoint presentation
10.25 – 10.40	Pannel Speaker 1: Mr. Ongdi Dorje, Member, Nekota Farmer Group, Helambu: “Traditional and local knowledge in agrobiodiversity and production practices”. (10 min + 5 min Q & A)	
10.40 – 11.00	Pannel Speaker 2: IIFB - Ali Aii Shatu, Gender and Women Coordinator Mboscuda Cameroon – Traditional knowledge of agrobiodiversity & agroforestry and knowledge exchange practices in Cameroon/Africa. (10 mins + 5 mins Q &A)	
11:00 – 11:30	Plenary discussion and closing of the session	
<p><b>Session 4. Seed and Farm Management Techniques and Innovations to Sustain Agrobiodiversity.</b></p> <p>Objectives</p> <ul style="list-style-type: none"> <li>To disseminate farmer-led conservation of planting material, including genetic resources, management systems and best practices in seed production, showcase market approaches for farm seed enterprises and document and share information on best practices from local to global.</li> </ul>		
11:30-11:35	Moderator: Dr Pratap Shrestha, Program Specialist, Seed Systems and Plant Genetic Resources, Seeds Change, Canada (Formerly USC Canada)	Introduction of the speaker and panellist
11:35-11:50	Keynote speaker: Mr Bharat Bhandari, LI-BIRD; Farmers managed Seed System in Nepal and its contribution to agrobiodiversity management	Presentation
11:50-12:05	AgriCord African case study: Learnings from improving farmers' vegetable seed production and management in Mali by farmer organisation led action-research and innovation on agroecological practices: Hamidou Traore, UNCPM (FFPO representative)	Presentation
12:05-12:20	Yiching Song: Farmer Seed Network in China	Presentation



12:20-12:35	Panel speaker: Ms Parbati Bhandari, Chairperson, Community Seed Bank Association of Nepal [Representative from Farmers]	Panel Speaker
12:35-12:50	Shamika Mone, Inter-continental Network of Organic Farmers Organisations (INOFO) PRESIDENT: Innovative Seed Keepers across India connecting it to the global seed keepers.	Panel Speaker
12:50-13:00	Summary Note: Joint Secretary, MoALD	
<p><b>Session 5: Enterprise innovations that encourage diversification in what is planted.</b></p> <ul style="list-style-type: none"> <li>· To showcase innovations in how FFPOs and IPLC groups diversify commercial production to maintain and incentivize agrobiodiversity.</li> <li>· Income generation is an important concern for smallholder FFPOs and IPLC groups – but linking any single crop to value added processing and commercial markets can drive an expansion of that one crop at the expense of agrobiodiversity and longer-term resilience.</li> <li>· This session will explore innovative models through which local organizations diversify commercial production, aggregating, processing and selling on multiple products from multiple diverse smallholdings or communal territories.</li> </ul> <p>It will look at business unusual examples of how FFPO and IPLC's develop and mobilize finances for enterprises that overcome challenges of social, environmental, and economic complexity – paying particular attention to how to deliver required market quantities and qualities across diverse markets from a broad and varied membership.</p>		
14:00-14:05	Moderator - Dr Popular Gentle Bhusal, Environment Advisor to Rt. Hon. PMO]	Introduction of the speaker and presenter.
14:05-14:25	Clifford Amoah Adagenera KANBAOCU. financial cooperative to support investments in diversification - (20 minutes)	
14:25-14:45	Mr Thakur Bhandari, Chairperson, FECOFUN: Forest based collective enterprise models: Learnings from Forest Farm Facility	
14:45-15:05	David Cahuana, General Manager - Central de Cooperativas el Ceibo RL., Bolivia: 'Business strategies used by El Ceibo to ensure the protection of agrobiodiversity in cocoa plantations' (20 minutes)	

15:05-15:25	Ms. Sita Pandey, Munaa krishi limited, Nepal: Agrobiodiversity based Market and opportunities for investment and innovation by private sector in Nepal (20 minutes)	
15:25-15:30	Summary of the session	Dr Popular Gentle Bhusal
15:30-16:00	Coffee break	
<b>Session 6. Nature finance – improving flows to FFPOs and IPLCs.</b> <b>Objectives</b> <ul style="list-style-type: none"> <li>· To explore the extent to which nature finance supports agrobiodiversity and then make the case for more finance for agrobiodiversity and its smallholder/IPLC guardians, explore different finance mechanisms that exist for agrobiodiversity conservation, and showcase some Nepali case studies of financing for agrobiodiversity conservation (either those receiving such funds or those managing such schemes).</li> <li>· Smallholder forest and farm producers are the custodians of agrobiodiversity, but partly due to poverty and reliance on subsistence farming.</li> <li>· Eliminating poverty through engaging with market mechanisms and instruments to finance the conservation of agrobiodiversity is key. This can be through the marketing of diverse baskets of products, but also through developing markets for agrobiodiversity as a public good or an ecosystem service (such as through biodiversity credits, offsets, or payments for ecosystem services).</li> <li>· Although still relatively new in Nepal and the rest of the world, this session explores the difference ways agrobiodiversity finance can be leveraged. It will give concrete examples of schemes rewarding the conservation of agrobiodiversity, particularly in Nepal, and highlight the lack of such finance currently being channeled to FFPOs and IPLCs.</li> </ul>		
16:00-16:05	Moderator: Pascale Bonzom, Head, Agriculture Team, IUCN	Introduction to the speaker and presenter
16:05-16:20	Elena Aguayo, World Rural Forum (15 minutes)	
16:20-16:35	Dr Devendra Gauchan, Honorary Research Fellow at Alliance of Bioversity International & CIAT: Nature based financing options, challenges, and evidence for agroecological farming and agrobiodiversity conservation in Nepal (15 minutes)	
16:35-16:50	Dr. Bijendra Basnyat , UNDP (15 minutes)	
16:50-17:05	Other FFFPO (TBD)	
17:05-17:30	Moderator - Q&A with the audience (25)	

17:30-19:30	Innovation Share Fair – Take 2	Showcasing products from landscapes in which agrobiodiversity has been an integral part of production.
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## Friday, 12 April 2024 – Day 4

Time	Session	Description
	Recap of the conference findings so far	
9:00-9:30	Summary of key challenges, lessons & actions agreed from each session: Session leads (5 mins x 4 themes) Discussion (10 mins)	To identify key challenges and lessons learnt emerging from across the sessions, and key actions for each theme.
<p><b>Roundtable discussion from existing alliances that cover agrobiodiversity in response to the preceding working groups</b></p> <ul style="list-style-type: none"> <li>Hear from existing alliances that have long promoted agrobiodiversity and provide a space for voices that have not been heard, particularly alliances &amp; CSO networks.</li> <li>Reflect on (i) whether a new alliance is needed or better to strengthen those which are already ongoing (eg. to address the challenges and deliver the key actions identified), (ii) priorities of the new alliance, if any, (iii) milestones, responsibilities.</li> </ul> <p>Roundtable: Briefly present their alliance's work, how it is addressing the challenges and actions identified, and reflect on the need to establish a new alliance or strengthen existing alliances.</p>		
9:30-9:35	Moderator: Oliver Oliveros & Krystyna Swiderska	

9:35-10:45	<p>Roundtable (5 mins each)</p> <ul style="list-style-type: none"> <li>· Uddhav Adhikari, Alliance of Agriculture for Food Nepal</li> <li>· Oliver Oliveiros, Agroecology Coalition,</li> <li>· Bharat Bhandari, Executive Director, LI-BIRD</li> <li>· Luis Miguel Aparicio, FFF Representative</li> <li>· Kandra, Yanira Ehrman, MEMBER OF THE GATC YOUTH MOVEMENT, Global Alliance of Territorial Communities (GATC)</li> <li>· Chemuku Wekesa, International Network of Mountain Indigenous Peoples.</li> <li>· Pius Raneer, The Indigenous Partnership for Agrobiodiversity</li> <li>· IIFB (Nepal or Cameroon representative).</li> </ul>	
10:45-11:00	<p>Moderated Discussion:</p> <p>How are existing alliances addressing the challenges identified? Are they sufficient to deliver the agreed actions?</p> <p>Do they need strengthening or is a new alliance needed?</p> <p>Pokhara Declaration – Key agreement and way forward by the FFPOs and Key stakeholders</p>	
11:00-11:30	Coffee/Tea	
11:30-12:00	Closing Remarks	
12:00	Closing Session	
	12 April 2024 (Afternoon) – Travel home	