

FOOD, FORESTS, AND FARMERS

LUCID 

*Finding Sustainable
Pathways for the Future*

BRIEFING KIT

AN ONLINE CONFERENCE

22 to 24 November 2021

Mindanao, Philippines





” Next to rice, maize (corn) is the second major agricultural crop in the Philippines. However, little of this maize is any longer directly consumed by people, rather, it is mostly used as livestock feed. This shift has substantially worsened both the socio-economic and biophysical landscapes, where families engaged in maize production are among the poorest in the agriculture sector. (Photo by A Ignacio)

Cover photo by R Javier
A business student asks a farmer about difficulties of smallholder corn farmers in their community. Bukidnon, Philippines

WELCOME MESSAGE



The economic exploitation of small corn farmers is apparently widespread in the Philippines, but in order to gain a better understanding of the extent and magnitude of this phenomenon, the Institute of Environmental Science for Social Change has engaged with its long-time Belgian university partners, Université de Namur and Université Catholique de Louvain, together with new local partners the Ateneo de Manila University and Central Mindanao University. With the support of l'Académie de recherche et d'enseignement supérieur (ARES) of the Belgian government, the LUCID (Land Use Change Impacts and Drivers) project was formulated to investigate the socio-economic dynamics and social justice implications of corn cultivation in the Philippines.

This five-year project started in 2016, seeks to understand the dynamics of farmer-level decision-making in the context of local opportunities and threats linked to corn cultivation. It also seeks to look at the issues under the lens of social justice and philosophy and how the unequal distribution of wealth and opportunities is perpetuated by a small group of economically privileged people.

As the LUCID Project comes to a close, this conference seeks to pull together its various learnings and partners in an effort to find sustainable pathways to well-being and economic growth for the smallholder corn farmers in the Philippines, while promoting greater ecological integrity. We hope that you will find this Conference engaging and fruitful as we seek a more just and equitable future for our smallholder farmers.

A handwritten signature in black ink, appearing to be 'J. Andres F. Ignacio'.

J. Andres F. Ignacio, Ph.D.
LUCID Project South Coordinator

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Sustainable Pathways for the Future



Photo by Clarice Q Manuel

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Focusing on food and agriculture, investing in family farmers, and transforming the rural sector can spur progress towards SDG targets.

TRANSFORMING THE WORLD THROUGH FOOD AND AGRICULTURE:
FAO and the 2030 Agenda for Sustainable Development

ABOUT THE CONFERENCE

Food Security and Its Landscape

With around 800 million people going hungry and 2 billion people suffering some form of malnutrition globally while at the same time a third of the adult population is obese and a third of all food produced is lost or wasted, there is really something very wrong with the way we are managing our food system. At the very root of this problem is inequality - in social, political, and economic power - that gives rise to unfair and often unjust access to food and resources.¹

With the world's population projected to reach nine billion by 2050, the demand on global food systems is expected to intensify and put pressure on food and agriculture systems mainly in making them sustainable, resilient, and inclusive. The 2030 Agenda for Sustainable Development was adopted where food insecurity and hunger present an enormous global challenge.² The targets are: a) to improve access to healthy and nutritious foods, b) to create livelihoods for small-scale producers and processors, and c) to help protect ecosystems and combat climate change to “meet the needs of present and future generations while ensuring profitability, environmental health, and social-economic equity”.³

Food security is more than just freedom from hunger - it also means food availability, access, and its use and misuse.⁴ Although nutrition is integral to the concept of food security, it also relates to health, security, and opportunity. Yet, one-third of global food production or 1.3 billion tons of food is either wasted or lost every year.⁵

1 [HTTPS://WWW.GLOBALHUNGERINDEX.ORG/ISSUES-IN-FOCUS/2017.HTML](https://www.globalhungerindex.org/issues-in-focus/2017.html)

2 [HTTPS://WWW.UNGLOBALCOMPACT.ORG/WHAT-IS-GC/OUR-WORK/ENVIRONMENT/FOOD-AGRICULTURE#:~:TEXT=THE%202030%20AGENDA%20FOR%20SUSTAINABLE%20DEVELOPMENT%20WAS%20ADOPTED,DEM AND%20ON%20GLOBAL%20FOOD%20SYSTEMS%20INTENSIFIES%20EVERY%20DAY](https://www.unglobalcompact.org/what-is-gc/our-work/environment/food-agriculture#:~:text=the%202030%20agenda%20for%20sustainable%20development%20was%20adopted,dem and%20on%20global%20food%20systems%20intensifies%20every%20day)

3 [HTTP://WWW.FAO.ORG/SUSTAINABILITY/EN/](http://www.fao.org/sustainability/en/)

4 [HTTP://WWW.FAO.ORG/FILEADMIN/TEMPLATES/WSFS/SUMMIT/DOCS/FINAL_DECLARATION/WSFS09_DECLARATION.PDF](http://www.fao.org/fileadmin/templates/wsfs/summit/docs/final_declaration/wsfs09_declaration.pdf)

5 [HTTP://WWW.FAO.ORG/NEWS/STORY/EN/ITEM/74192/ICODE/](http://www.fao.org/news/story/en/item/74192/icode/)

In the Philippines, despite reported economic growth in the last decades, increasing poverty has become a major concern with a high relative proportion of the poor belonging to the agriculture sector.⁶ According to the Asian Development Bank (2020), “The Philippines has made tremendous strides in reducing the national poverty rate, but rural poverty remains high because of low productivity and limited crop diversification.”⁷

And while the agriculture sector contributes about 10 percent to the country’s gross domestic product (GDP), unfortunately, it only gets three to five percent share of the total national appropriations in the last 10 years.⁸ Thus, Filipino farmers are ironically among the poorest because of low farm productivity and seasonal income, limited crop diversification, and the lack of capital and access to the market.⁹ This situation is compounded by changes in weather patterns and events such as longer droughts and more intense rains and storms, which are telltale effects of climate change.

Next to rice, maize (corn) is the second major agricultural crop in the Philippines. However, little of this maize is any longer directly consumed by people, rather, it is mostly used as livestock feed. This shift has substantially altered both the socio-economic and biophysical landscapes, resulting in our current situation where families engaged in maize production are among the poorest in the agriculture sector.

6 [HTTPS://LUCID.ESSC.ORG.PH](https://lucid.essc.org.ph)

7 [HTTPS://WWW.ADB.ORG/NEWS/ADB-HELP-BOOST-FARM-INCOMES-PHILIPPINES-400-MILLION-LOAN](https://www.adb.org/news/adb-help-boost-farm-incomes-philippines-400-million-loan)

8 [HTTPS://WWW.PHILSTAR.COM/BUSINESS/2020/09/14/2042158/WHY-CUT-AGRICULTURE-BUDGET](https://www.philstar.com/business/2020/09/14/2042158/why-cut-agriculture-budget)

9 [HTTPS://BUSINESSMIRROR.COM.PH/2019/10/01/MODERN-AGRICULTURE-KEY-TO-EASING-POVERTY/](https://businessmirror.com.ph/2019/10/01/modern-agriculture-key-to-easing-poverty/)

FIGURE 1: FOREST COVER COMPARISON (HA) IN THE PHILIPPINES

Forest Type	SSC SPOT 1987**	Percentage	ESSC 2002	Percentage	FMB 2002***	Percentage
Closed Canopy Forest	2,402,142	8.18%	1,338,135	4.56%	2,448,864	8.34%
Open Canopy Forest	4,112,168	14.00%	4,077,940	13.88%	3,847,284	13.10%
Pine Forest	80,995	0.28%	85,168	0.29%	200,833	0.68%
Mossy Forest	251,017	0.85%	584,030	1.99%	0	
Mangrove Forest	152,100	0.52%	224,719	0.77%	248,609	0.85%
Plantation	0		0		329,581	1.12%
Mixed Forest	0		0		94,497	0.32%
TOTAL FOREST AREA	6,998,422	23.83%	6,309,993	21.48%	7,169,688	24.41%
Difference in Total Forest Area from SPOT 1987:			-688,429	-2.35%	+171,246	+0.58%
<i>**Based on GIS data digitized from published SSC SPOT 1987 1:250,000 scale map sheets</i>						
<i>***Based on published FMB Forest Cover on the DENR website</i>						
Total Area of the Philippines = 30M ha						

Forests and Sustainable Land Management

Forests provide food, medicines, wood, fiber, and livelihood to around 70 million Indigenous Peoples. They moderate freshwater flows, clean the air, and influence regional and local precipitation. And when left standing, they play a critical role in the fight against climate change. But forests — with their ability to provide these benefits — are shrinking and critically threatened. The expansion of agriculture, mining, timber extraction, and other unsustainable practices are destroying and degrading forests around the world.¹⁰ With increased infrastructure expansion in the Philippines and the heightened pressures on upland migrant farmers the losses are expected to be even greater as most upland soils are degraded.

¹⁰ [HTTPS://WWW.WRI.ORG/FORESTS](https://www.wri.org/forests)

Upland degradation has been a growing concern in the Philippines in the wake of extensive logging and clearing in the 1970s to 1980s.¹¹ By the mid-2000s, genetically modified (GM) corn farming was heavily marketed and subsequently, an increasing number of small-scale farmers adopted such crops. Although there is the promise of higher revenues for GM corn growers, the reality is that it requires a higher investment than traditional varieties and that there is a 30% chance of zero profit for farmers, making it a high-risk return crop.¹²

In the past, local farmers used to practice communal labor for land clearing, weeding, and harvesting whereby farmers helped one another in working each other's land in rotation during the cropping season.¹³ Today, GM corn cultivation promotes less labor with the use of the herbicide glyphosate which has eliminated the need for manual weeding as the chemical kills off all other plants on contact. Labor has been commoditized in such a way that farm owners now need to hire people for other labor-intensive tasks such as planting, herbicide applications, and harvesting. In short, this new technology has transformed farming from traditional subsistence agriculture into a cash-based endeavor for the smallholder corn farmers.¹⁴

Maintaining ecosystem services is a prerequisite for sustainable land management (SLM).¹⁵ SLM carries great potential for preserving and enhancing ecosystem services in all land-use systems that support public benefit, common good, community welfare, health, and safety. Examples of ecosystem services include fertile land, good quality air and water, cultural landscapes, and rich biodiversity.

11 IGNACIO, J. ANDRES F, 2019. FROM THE UPLANDS OF MINDANAO: HEALING A FRAGMENTED LAND AND ITS PEOPLE THROUGH AN INTEGRAL ECOLOGICAL APPROACH. JOURNAL OF MANAGEMENT FOR GLOBAL SUSTAINABILITY VOLUME 7, ISSUE 2 (2019): 11-24, INTERNATIONAL ASSOCIATION OF JESUIT BUSINESS SCHOOLS. [HTTPS://JOURNALS.ATENEO.EDU/OJS/INDEX.PHP/JMGS/ARTICLE/VIEW/3225/3048](https://journals.ateneo.edu/ojs/index.php/jmgs/article/view/3225/3048)

12 [HTTPS://LUCID.ESSC.ORG.PH/ARCHIVES/275](https://lucid.essc.org.ph/archives/275)

13 UPPER MAPULO COMMUNITY, 2018

14 IGNACIO, FROM THE UPLANDS..., IAJBS [HTTPS://JOURNALS.ATENEO.EDU/OJS/INDEX.PHP/JMGS/ARTICLE/VIEW/3225/3048](https://journals.ateneo.edu/ojs/index.php/jmgs/article/view/3225/3048)

15 [HTTPS://CATALOGUE.UNCCD.INT/838_BENEFITS_OF_SLM_ENG.PDF](https://catalogue.unccd.int/838_benefits_of_slm_eng.pdf)

Sustainable land management goes beyond the responsibility of individual land users. It involves proper planning and collective participation of stakeholders, both local and regional/national. The watershed perspective is a useful way to understand the interactions between human activities and ecological resources. The complex relationships among forests, water, and other land resources, coupled with the long history of indigenous land management, need to be better understood by government in the context of rural communities - their livelihoods and underlying risks - so that integrated programs are developed for the sustainable management of the land and its ecosystems.

Social Justice and Human Development

Since the widespread adoption of GM corn, northern Mindanao has experienced expropriation of land, continuous debt, food insecurity, and heightened poverty. The economic exploitation of small corn farmers appears to be widespread in the Philippines.¹⁶

Low maintenance, high yielding variety (HYV) corn has attracted smallholder upland farmers due to the promise of high returns. Despite many risks such as climate, pests, and environmental factors resulting in crop failures and eventually, an endless cycle of debt, a majority of farmers still cultivate HYV corn.¹⁷ Although smallholder farmers express a desire to shift to traditional or organic farming, they find it difficult because they are left alone in that they need to find their own capital, labor, buyers, and transportation to bring their harvest to the market. The lack of broad systems for support has left smallholder farmers with only one choice, which is to continue in the usurious private financing system typical of HYV corn cultivation.

16 [HTTPS://LUCID.ESSC.ORG.PH/ARCHIVES/275](https://lucid.essc.org.ph/archives/275)

17 [HTTPS://LUCID.ESSC.ORG.PH/ARCHIVES/359](https://lucid.essc.org.ph/archives/359)



Drying corn on the road in Isabela Province
(Photo by A Ignacio)

The pursuit to feed the world and achieve zero hunger is ambitious, but the effort is to awaken the world that if everyone works together, we can transform the way the world produces, consumes, and thinks about food and work towards sustainable food and agriculture. Every actor along the agriculture supply chain - farmers, producers, traders, retailers, investors, and consumers - has a critical role to play in establishing sustainable food systems that advance food security, protect the environment, and ensure economic opportunity.¹⁸

Although businesses focus on research for profit, they can become critical partners in delivering practical solutions and conducting responsible business for food security and sustainable agriculture. Civil society on the other hand will continue to weigh up the need and use of genetic engineering. The use of science and research can be tapped as a tool to better understand future concerns surrounding food security and at the same time alleviate the worsening conditions of poor farmers. Government capacity to plan, regulate, and dialogue needs to be reinforced for responsible action and leadership. In this context, this conference seeks to provide a critical bridge between science and local food security thus contributing to the broader context of global sustainable food and agriculture and sustainable land management.

18 [HTTPS://WWW.UNGLOBALCOMPACT.ORG/WHAT-IS-GC/OUR-WORK/ENVIRONMENT/FOOD-AGRICULTURE](https://www.unglobalcompact.org/what-is-gc/our-work/environment/food-agriculture)



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Forests provide food, medicines, wood, fiber, and livelihood to around 70 million Indigenous Peoples. They moderate freshwater flows, clean the air, and influence regional and local precipitation. And when left standing, forests play a critical role in the fight against climate change. (Aerial photo courtesy of Bing Maps)

OBJECTIVES OF THE CONFERENCE

In line with the UN Food Systems Summit 2021¹⁹ and its broader targets to achieve the 2030 Agenda of the Sustainable Development Goals,²⁰ this Conference aims to deliver the following outcomes:

1

Raise awareness and promote discussion about food, forests, and farmers in the Philippines in relation to sustainable food and agriculture and sustainable land management.

2

Deepen the understanding of HYV corn cultivation as it impacts smallholder farmers in the Philippines and explore realistic solutions anchored on the principles of sustainable agriculture.

3

Generate commitments to transformative action that contribute to global goals on food security and systems and create a system of monitoring that ensures that outcomes continue to drive new actions and progress through the sharing of experiences and knowledge.

This conference also seeks to contribute to the ongoing workshop series led by Ecojesuit²¹ on COP26 and beyond: stepping forward for the global common good.²² Significantly, it aims to share grounded experiences on local adaptations and best practices related to agriculture and food security, land use management, and climate change.

19 [HTTPS://WWW.UN.ORG/EN/FOOD-SYSTEMS-SUMMIT](https://www.un.org/en/food-systems-summit)

20 [HTTPS://SUSTAINABLEDEVELOPMENT.UN.ORG/CONTENT/DOCUMENTS/21252030%20AGENDA%20FOR%20SUSTAINABLE%20DEVELOPMENT%20WEB.PDF](https://sustainabledevelopment.un.org/content/documents/21252030%20AGENDA%20FOR%20SUSTAINABLE%20DEVELOPMENT%20WEB.PDF)

21 [HTTPS://COP26.ECOJESUIT.COM](https://cop26.ecojesuit.com)

22 [HTTP://WWW.FAO.ORG/3/I3940E/I3940E.PDF](http://www.fao.org/3/i3940e/i3940e.pdf)

PROGRAMME

Food, forests, and farmers touch every aspect of human existence. The state of each is integral to the health of our environment, our economies, and our cultures. It is important to keep these relationships in balance so that families, communities, and nations are able to function well. When one is stressed, the resulting perturbation threatens broader systems of education, health, and economy, as well as human rights, peace, and security. “And in many cases, those who are already poor or marginalized are the most vulnerable.”²³

The Process

The Conference is spread throughout three days of around 2.5 hours each day, consisting of presentations and subsequent structured discussions. Due to the current COVID-19 pandemic, a virtual conference using the Zoom platform is set up with breakout rooms for thematic discussions and virtual “booths” utilizing other online platforms.

A keynote speaker is invited to open and set the tone as well as thematic speakers to give depth to the discussions.

Guided by the principles and action tracks of the FAO and Food Systems Summit, the Conference is open to all who are keen on discussing and developing key principles and significant actions that contribute to the broader challenges and goals on food security, livelihoods, and climate change.

2030 Sustainable Development Goals: Analysis of the Socio-Economic Drivers and Impacts on the Land and Its People Philippines



Forests, food (agriculture), and people (farmers) are at the heart of 2030 Development Agenda. The dynamics of farmer-level decision making in the context of local opportunities and threats in corn cultivation in the Philippines are manifested not only in the socio-economic and cultural situations, but also in the local environment in which they live. Understanding social justice implications of land use change in the Philippine Uplands is crucial in tackling the root cause of the unequal distribution of wealth and opportunities between small group of rich people and farmers.

What do we want to achieve in three days?

Day 1

Raise awareness and promote discussion about food, forests, and farmers in relation to food security and sustainable agriculture and sustainable land management.

Set the direction towards the understanding of “Food, forests, and people: its interrelatedness, importance, and challenges towards a sustainable future”, through discussion on the set themes.

Day 2

Obtain a deeper appreciation of the HYV corn situation as it impacts the smallholder farmers in the Philippines through different case studies. To come up with definitions for sustainable agriculture by identifying what is and what is not working on the ground.

Focus on the theoretical and practical experiences on food security and land-use change and management; the theoretical studies are to be validated by practical experiences. The effort is to broaden the understanding of the complex dynamics of HYV corn agriculture and its impacts on food security, sustainable land management, and human development.

Day 3

Generate significant action coupled with measurable indicators for monitoring that contribute to global goals on food security and systems and create a process of follow up that ensures that outcomes continue to drive further actions and progress through sharing of experiences and knowledge.

Our way forward towards a sustainable future

Finding synergy to work with the Forest, Farm, and Leadership in the Margins (Mindanao) and the youth.

THE CONFERENCE THEMES

The Conference has three themes that serve as a guide to the daily discussions on food, forests, and farmers in the Philippines. These shall be discussed in detail through parallel sessions on Day 2.

Theme 1

provisioning services: forests, land use, ecosystem/ecological services

Theme 2

regulating and supporting services: food, agriculture, food security

Theme 3

culture and socio-economic services: people, farmers, businesses, government, academe, civil society

ECOSYSTEM SERVICES



PROVISIONING SERVICES

Are very well-known.

They require a combination of built (i.e. boats), human (i.e. fishermen), and social capital (i.e. fishing communities) to be produced, and provide benefits directly to the world's markets.

REGULATING SERVICES

Have a clear value to society.

They regulate ecosystems and produce benefits such as flood control, storm protection, water purification and many more.



CULTURAL SERVICES

Don't have clear value to society.

They provide benefits such as recreation opportunities, scientific knowledge, cultural identity; and some are marketed through tourism.

SUPPORTING SERVICES

Are the least known.

They sustain human well-being indirectly by maintaining processes (such as CO₂ sequestration and provisioning of habitat) necessary for the other three types of ecosystem services to exist.



Theme 1

Financing Local Protection of Natural Resources and Enhancing Provisioning Services

The products that we obtain from ecosystems for basic human needs such as food, water, minerals, shelter, and fuel are known as provisioning or ecosystem/ecological services. Many of these services are traded in markets but in many rural households, they directly rely on these services for their livelihoods. In this case, the value given by the markets may not reflect the same importance and prices that the local communities are giving to the ecosystem services.²⁴

Quantifying the resources in terms of abundance and uses is a challenging and complex process that requires people to not only have an appreciation for the environment, but also a deeper understanding of the interrelationships and dependencies of the ecosystems.

People need to understand that forests, aside from providing basic human needs, regulate local and global climates that help maintain healthy terrestrial and aquatic ecosystems, including the effective provision of clean freshwater to communities. Forests also help prevent soil erosion, reduce sedimentation, and mitigate the risks of landslides and floods.

According to the FAO (2021), wise management of ecosystem services and biodiversity ensures productive agriculture and nutritious food production. They maintain healthy soils, enable pollination, and regulate pests and disease, amongst other services, that need to be supported in order to keep supporting agriculture, livestock, forestry, and fisheries.

Management strategy: “action commitments” towards building resilience to vulnerabilities, threats, and risks

Emphasizing the importance of ecological values is an important environmental management strategy. It helps people become more aware of the web of interconnections between the environment and its people.

Understanding the “provisioning services” is an initial process to creating greater social stability and inclusive growth. Agriculture plays an important role in protecting ecosystem services, so it is important to encourage farmers to adopt sustainable practices in such a way that minimizes land degradation, rehabilitates degraded areas, and ensures the optimal use of land resources for the benefit of present and future generations. In this way, they realize the benefits of ecosystem services while reducing the negative impact of agriculture activities.

Existing management systems, which can be adopted to improve coordination and management of ecosystem services:

Upland communities as “watershed managers”:

1. Integrated watershed resource management for local planning and management of resources
2. Assisted natural regeneration in critical areas to increase ecological security and environmental sustainability
3. Technical working groups and environmental councils for integrated watershed management policies
4. Remote sensing and historical satellite images analysis

THEME 1: PROVISIONING SERVICES

Service	Sub-category	Description <small>see reference below on FAO</small>
Food	Crops	The world currently produces enough to feed the global population of 7 billion people. Today, the world produces 17% more food per person than 30 years ago, with the rate of production having increased faster than the population over the last 2 decades. Nevertheless, it is now recognized that the gains in agricultural production and productivity were often accompanied by negative effects on agriculture's natural resource base jeopardizing its productive potential in the future
	Livestock	Plays an important role in human nutrition. It provides nearly one-third of humanity's protein intake. However, other livestock production system are based on cereals, which can lead to a competition between food for humans and feed for livestock.
	Capture fisheries	Contributes a significant amount of animal protein to the diets of people worldwide. This sector also derives crucial cash earnings and employment from the food services.
	Aquaculture	Aquaculture is one of the fastest-growing food producing sectors and provides half of all fish for human consumption.
	Wild plants and animal food products	The Non-Timber Forest products also contribute to a large part of the nutrition in developing countries.
Raw Materials	Timber	
	Cotton, hemp, silk	
	Wood fuel	
Freshwater		Crops are heavily dependent on freshwater as almost 60 percent of all the world's freshwater withdrawals go towards irrigation uses. Improved cropping systems can also improve the water retention capacity of the soil and enhance water provision. Forests help maintain healthy aquatic ecosystems and provide reliable supplies of clean freshwater. And while forests themselves consume water, they also improve infiltration rates, thereby helping recharge underground aquifers. Loss of forest cover can adversely affect freshwater supplies.
Medicinal resources		Traditional knowledge can teach us a lot about other possible natural remedy as long as the fragile balance of the forest ecosystems is kept. Sustainable management is needed to keep this medicine reservoir alive.

Lifted from Green Facts²⁵ and FAO²⁶

25 [HTTPS://WWW.GREENFACTS.ORG/EN/ECOSYSTEMS/FIGTABLEBOXES/TABLE2-1-TRENDS-USE-ECOSYSTEMS-PROVISIONING.HTM](https://www.greenfacts.org/en/ecosystems/figtableboxes/table2-1-trends-use-ecosystems-provisioning.htm)

26 [HTTPS://WWW.FAO.ORG/ECOSYSTEM-SERVICES-BIODIVERSITY/BACKGROUND/PROVISIONING-SERVICES/EN/](https://www.fao.org/ecosystem-services-biodiversity/background/provisioning-services/en/)

THEME 1 GUIDE QUESTIONS

1. What are the (direct or indirect) drivers of change that affect the balance of the ecosystems/ecological services?
2. What are the ecological implications of land use change in the Philippines uplands, particularly of the encroachment of intensive agricultural practices, i.e. corn cultivation? What are the underlying mechanisms that enable this?
3. What are the ecological approaches we can consider to protect and enhance natural resources as well as to build the resilience of communities/government to vulnerabilities, threats, and risks?



Principle 2: Protect and enhance natural resources
Action Track 5: Build resilience to vulnerabilities, shocks, and stress

CASE STUDY

Shifting trends in agricultural practices in the Philippine uplands and its impacts on the ecological landscape

by Dr. A Ignacio

”

Economies of scale, especially in the agricultural sector, end up forcing smallholders to sell their land or to abandon their traditional crops. Their attempts to move to other, more diversified, means of production prove fruitless because of the difficulty of linkage with regional and global markets, or because the infrastructure for sales and transport is geared to larger businesses.”- LS129

Full text in:

<https://lucid.essc.org.ph/archives/262>

The so called benefits of the use of glyphosate in agriculture that promise reduced labor and greater autonomy, are contributing to a broader crisis. Communities used to interact through communal labor in farming, working together in rotation to till the land of the individual farmers in what was a seasonally collective activity. Farmers used to not only practice share-cropping but also shared seed stocks and had greater control over food security, the impact of typhoons, and intense rains as they would also maintain diversity in some root crops.

Now with the monetization of labor, the practice of communal labor in agriculture has all but disappeared in these areas, making the people more and more dependent on the technology in order to survive.

On a broader level this is affecting regional food security. Furthermore, the impacts on health of glyphosate (not dealt with in our investigation) being a carcinogen are unknown. All of these factors are contributing to a global web of ecological crises.



Corn cultivation invading the forest line in Upper Pulangi, Bukidnon, Mindanao. (Photo by A Ignacio)

Theme 2

Increasing Productivity and Adding Value to Regulating and Supporting Services to Farmers

Regulating services are often invisible and mostly taken for granted. Maintaining quality air and soil, providing flood and disease control, or pollinating crops are some of the “regulating services” provided by ecosystems.²⁷ While supporting services are the living spaces for plants or animals and maintaining the diversity of plants and animals.²⁸

Globally, there is an initiative that focuses on “making nature’s values visible” known as the Economics of Ecosystems and Biodiversity (TEEB). Its main effort is to mainstream the values of biodiversity and ecosystem services into decision-making at all levels by following a structured approach to valuation.²⁹ Through this, we can understand the true economics of agriculture by recognizing and accounting for all significant “externalities” such as hidden costs and benefits of agriculture and food systems, along these value chains.

Agriculture is influenced by and influences all types of ecosystem services, which can be evaluated through understanding the interactions between the different production systems and the types of ecosystem services. HYV corn, for instance, is increasingly expanding on both the uplands and sloping hillsides in Mindanao. This expansion has not only influenced the change in land use in these areas, but also the socio-economic dynamics within the communities.

As we seek to improve and increase productivity for household farmers, it is also important to understand the impact of HYV corn agriculture on food security, sustainable land management, and human development. This way, we are adding value to the ecosystem's services.

27 [HTTP://WWW.FAO.ORG/ECOSYSTEM-SERVICES-BIODIVERSITY/BACKGROUND/REGULATING-SERVICES/EN/](http://www.fao.org/ecosystem-services-biodiversity/background/regulating-services/en/)

28 [HTTP://WWW.FAO.ORG/ECOSYSTEM-SERVICES-BIODIVERSITY/BACKGROUND/SUPPORTING-SERVICES/EN/](http://www.fao.org/ecosystem-services-biodiversity/background/supporting-services/en/)

29 [HTTP://TEEBWEB.ORG](http://teebweb.org)

Management strategy: adaptive governance to new challenges to ensure access to safe and nutritious food for all

The term food systems refer to a complex web of activities related to the production, processing, transport, and consumption. Around the world, food systems face increasing pressure to ensure food security and nutrition for a growing population, to support the livelihoods of millions of farmers and others in the food chain, and to conduct itself in an environmentally sustainable way³⁰ Tackling these challenges requires a new form of adaptive governance where government and non-government institutions alike support growth in community resource management, particularly in the uplands, where raw materials can have value added and marketing support.

THEME 2: REGULATING AND SUPPORTING SERVICES

Service	Sub-category	Description <small>see reference below on FAO</small>
Air Quality Regulation		Air pollutants have an effect on agricultural crops, including annual and perennial species as they may affect processes within individual plants that control or alter growth and reproduction, thereby influencing yield. Livestock can have a negative influence on local air quality, especially through ammoniac (NH ₃) emission coming from high density livestock systems. Installing filters in barns can help reducing this impact.
Climate Regulation Natural Hazard Regulation	Global	Landuse conversion and soil cultivation have been an important source of greenhouse gases (GHGs) to the atmosphere. It is estimated that they are responsible for about one-third of GHG emissions. However, improved agricultural practices can help mitigate climate change by reducing emissions from agriculture and other sources and by storing carbon in plant biomass and soils. Diversification and adjustment of cropping patterns are among ways to reduce losses, thus mitigating the impact of droughts on the lives of the rural poor. Extreme weather events and natural disasters are posing an increasing threat to the world's forests. The condition of forests themselves can have an influence on the extreme events. However, the extent of large scale flooding in the lower parts of major river basins does not seem to be linked to the degree of forest cover and the management practices in the catchment area. Similarly, forests cannot prevent large scale landslides and mass movements which are triggered by tectonic or extraordinary rainfall events.
	Regional and local	
Water Flow Regulation		Agriculture is a large consumer of water, and at the same has strong impacts on water flow regulation. Management of agricultural land can both contribute to flooding, or - as in the case of the "Ganges Water Machine" - be seen as a region-wide mechanism to control water flows.
Erosion		Studies have shown that the more closely an agricultural system resembles a natural forest in its canopy structure, tree spacing and ground cover, the less chance there is of soil erosion. Traditional agroforestry techniques, which provide natural cover, have been used for centuries to produce food without causing long-term damage to the environment.
Water Purification and Waste Treatment		Agricultural effluents are a big source of water pollution. Agricultural systems can be designed to promote waste water treatment via wetlands or buffer strips. Agricultural systems can also be designed to reduce the use of agricultural chemicals which may end up in run-off and water bodies. Trees contribute heavily to waste-water treatment through their root system and their role in nutrient cycling.
Disease Regulation		Pests, diseases and weeds limit crop production, and are themselves limited by the action of their natural enemies, mostly arthropods and micro-organisms. Biological control, through an ecosystem approach, is a way to reduce pesticide use and enhance biodiversity while ensuring production.
Pollination		Food security, food diversity, human nutrition and food prices all rely strongly on animal pollinators, and yet animal pollination is under stress from factors including habitat destruction and unsustainable agricultural practices such as intensification and pesticide misuse.

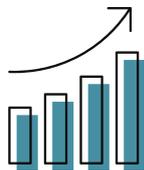
Lifted from Green Facts³¹ and FAO³²

31 [HTTPS://WWW.GREENFACTS.ORG/EN/ECOSYSTEMS/FIGTABLEBOXES/TABLE2-1-TRENDS-USE-ECOSYSTEMS-REGULATING.HTM](https://www.greenfacts.org/en/ecosystems/figtableboxes/table2-1-trends-use-ecosystems-regulating.htm)

32 [HTTP://WWW.FAO.ORG/ECOSYSTEM-SERVICES-BIODIVERSITY/BACKGROUND/REGULATING-SERVICES/EN/](http://www.fao.org/ecosystem-services-biodiversity/background/regulating-services/en/)

THEME 2 GUIDE QUESTIONS

1. What are the reasons behind a farmer's decision to adopt GMO corn? How has this variation affected their food security, health, and nutrition?
2. How has the land use change brought about by corn farming affected the welfare of the farmers and their households?
3. What are the possible improvements in the value chain to help the farmer receive what is due to him? To come up with definitions for sustainable agriculture by identifying what is and what is not working on the ground.



Principle 1: Increase productivity, employment, and value addition in food systems

Principle 4: Enhance the resilience of people, communities, and ecosystems

Principle 5: Adapt governance to new challenges

Action Track 1: Ensure access to safe and nutritious food for all

CASE STUDY

Small-scale corn farmers' misfortunes

by Clarice Colleen Q. Manuel

In-depth interviews with corn farmers in Malaybalay and Cabanglasan in Bukidnon reveal serious problems in the corn industry that have likely contributed to the high poverty incidence among farmers. A common lament among the interviewed farmers is the occurrence of drought, strong winds and rains, which have led to corn crop losses for the past 10 years. Most of the corn farmers plant in sloped areas, which are naturally prone to landslides; thus, extreme weather conditions would likely result in crop failures. By some accounts, in 2012 there were farmers who experienced zero yield because of Typhoon Pablo, whose strong winds flattened corn stalks and made the fallen corn cobs an easy target for hungry field rats.

Many stories shared by the farmers pertained to taking credit from a financier, suffering crop failures, and owing huge debts. Some have been in debt for more than eight years, while some were able to pay off their debts in succeeding cropping seasons. Nowadays, farmers try their best to avoid this set-up. They are so afraid of falling into debt that they choose to plant cheaper corn varieties with lower yields. In worse cases, they simply give up, and they end up selling or leasing their land to other farming households or financiers in order to pay off their debts.

”

Although corn has a price floor with the National Food Authority, farmer's are at the mercy of traders who buy their corn, and they cannot complain if the buying price gets too low. They consider low corn prices as a crop failure, and most of them have experienced it. In fact, it has gone as low as P7 per kilo..."

Full text in:

<https://lucid.essc.org.ph/archives/268>



Family members manually shelling corn in Bukidnon
(Photo by C Bustamante)

Theme 3

Improving Livelihoods to Foster Inclusive Economic Growth to Culture and Social-economic Services

Cultural services are deeply interconnected with each other and often connected to provisioning and regulating services, i.e. small scale farmers are not only about food and income, but also about the farmers' way of life.³³

The life, land, and livelihood of the upland peoples are very much weaved through their traditional values, knowledge, and experiences, which are evident through their cultural and natural landscapes. Their cultural identities and ways of life are very much rooted and attuned to their natural environment. Their interaction with the environment is based on traditional forms of cultivation, resource gathering, and rituals.

Management strategy: shifting to sustainable consumption patterns to advance equitable livelihoods

Globally, the growing food demand is shaped by population growth as well as through the shifting diets and lifestyles of people. More than 1 billion people are directly employed by food systems with the majority of the world's food being produced by smallholder farmers and women. In achieving the 2030 sustainable development goals, sustainable consumption and production need to be considered.

THEME 3: CULTURAL SERVICES

Service	Description <small>see reference below on FAO</small>
Cultural Diversity Spiritual and Religious Values Sense of Place	<p>Agriculturally-related diets are central to many world religions. For example, Dewi Sri, the rice goddess, is venerated in Bali, where rice is the staple crop. During the harvest, villages are festooned with flags, and simple bamboo temples dedicated to the goddess are erected in the upstream, most sacred corners of the rice fields. Small dolls of rice stalks representing Dewi Sri are placed in granaries as offerings.</p>
Aesthetics Values and Inspiration Cultural Heritage Values Knowledge Systems Educational Values	<p>Agricultural landscapes have high cultural values for many societies, as recognised through the Satoyama Initiative and Globally Important Agricultural Heritage Sites. Also, in certain societies specific rice cultivars are maintained solely for ceremonial use purposes.</p> <p>Forests have inspired the development of many technologies such as the one to help capture rainwater in cities.</p>
Recreation and Ecotourism	<p>Agricultural landscapes can host numerous recreational opportunities, and are recognised as having mental health benefits.</p> <p>Farm tourism is a rapidly growing market, allowing urbanites to reconnect with nature. Usually, attractive farms are those whose produce and products are environmentally-friendly, sustainable and very closely linked with nature. Tourism in forests is now an important aspect to take into consideration when planning forest management. Tourism revenues can often bring an incentive for sustainable forest management.</p>

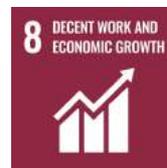
Lifted from Green Facts³⁴ and FAO³⁵

34 [HTTPS://WWW.GREENFACTS.ORG/EN/ECOSYSTEMS/FIGTABLEBOXES/TABLE2-1-TRENDS-USE-ECOSYSTEMS-CULTURAL.HTM](https://www.greenfacts.org/en/ecosystems/figtableboxes/table2-1-trends-use-ecosystems-cultural.htm)

35 [HTTP://WWW.FAO.ORG/ECOSYSTEM-SERVICES-BIODIVERSITY/BACKGROUND/CULTURAL-SERVICES/EN/](http://www.fao.org/ecosystem-services-biodiversity/background/cultural-services/en/)

THEME 3 GUIDE QUESTIONS

1. How do we improve the sustainable performance of the supply chain?
2. What are the new ways to enhance sourcing, production, and distribution partners?
3. How can we promote inclusive economic growth while maintaining the socio-cultural identity of communities?
To come up with definitions for sustainable agriculture by identifying what is and what is not working on the ground.



Principle 3: Improve livelihoods and foster inclusive economic growth
Action Track 2: Shift to sustainable consumption patterns
Action Track 3: Boost nature-positive production
Action Track 4: Advance equitable livelihoods

CASE STUDY

Relationships of extraction and affiliation: Hypotheses on the relationships and structures that support high-yield variety corn farming by PJ Mariano Capistrano

Despite the high financial costs and economic risks to small farmers in the Upper Pulangi area in northern Bukidnon, Mindanao, Philippines, a majority of farmers still farm high-yield variety corn. There must be other reasons – factors, if you will – that make farmers continue to farm this type of corn.

”

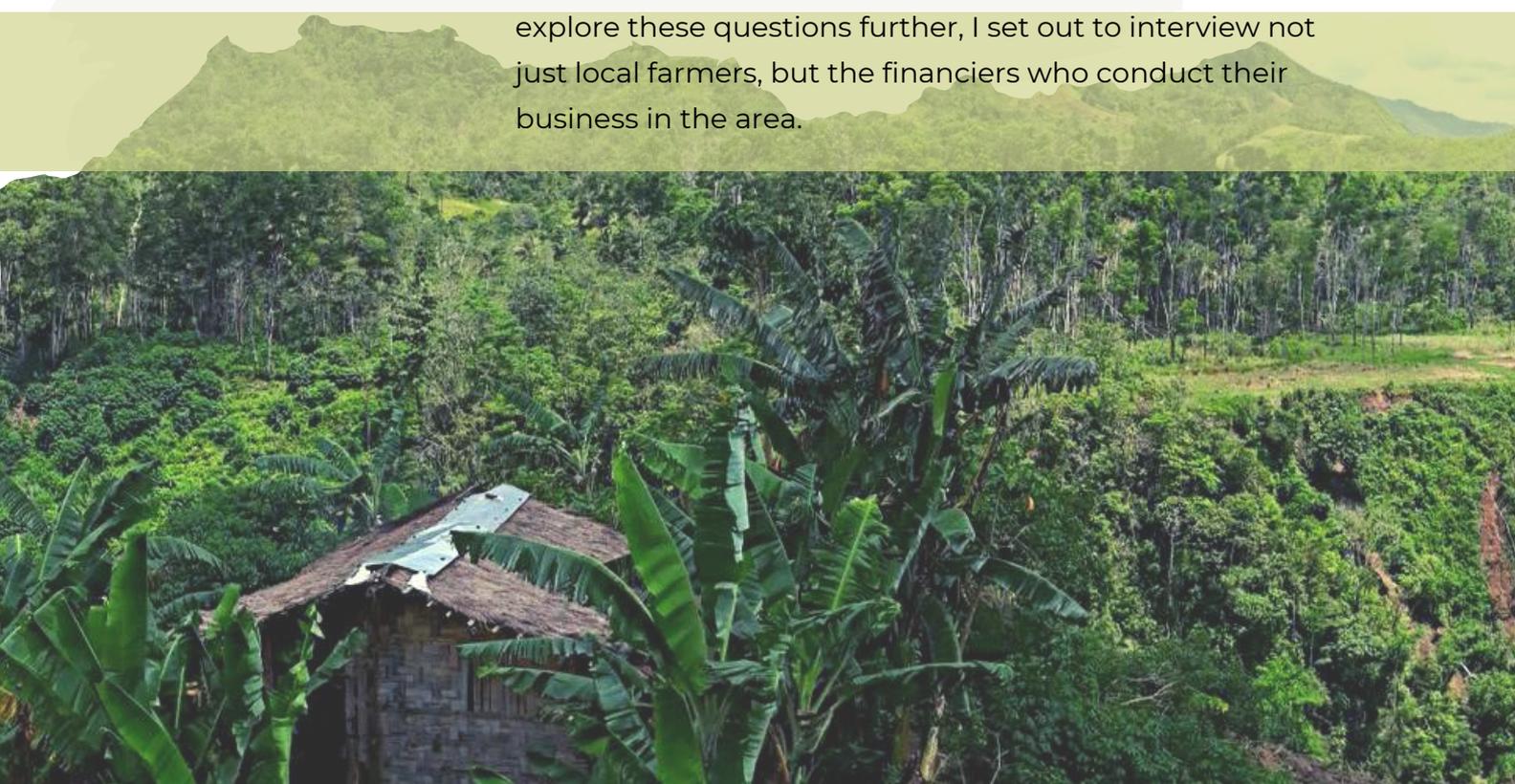
Relationships of patronage and affiliation may also add motivation to continue farming high-yield variety corn. Patronizing a financier's business may be seen as quid pro quo or as cultivating a patron who gives one better opportunities.”

Aside from the ease of farming high-yield variety corn (enabled by the use of glyphosate spray, the health and environmental impacts of which will not be discussed here for now), another possible factor that promotes the continuing cultivation of corn is the set of relationships that tie together small farmers with local financiers, and the broader social structures that tie local financiers with seed companies and local government patrons.

Full story in:

<https://lucid.essc.org.ph/archives/359>

To what extent do relationships of affiliation and relationships of social, economic, and political power constrain or enable farmers in the Upper Pulangi? To explore these questions further, I set out to interview not just local farmers, but the financiers who conduct their business in the area.



A poor corn farmer's hut at the edge of the Pulangi River near Sitio Namulusan, Bukidnon, Mindanao (Photo by A Ignacio)

DAY 1, 22 NOVEMBER, MONDAY

Expected outcome: Raise awareness and promote discussion about food, forests, and farmers in relation to food security and sustainable agriculture and sustainable land management.

1450h Plenary, participants start to convene via Zoom meeting, Socials

1500h Welcome and opening of the Online Conference on
- Food, Forests, and Farmers: Finding Sustainable Pathways for the
1515h Future

Host/Moderator: Dr. J. ANDRES F. IGNACIO, LUCID Project South Coordinator & Director for Planning and Geomatics-ESSC

Welcome Remarks

HIS EXCELLENCY MICHEL PARYS

Ambassador of the Kingdom of Belgium

Embassy of the Kingdom of Belgium in Manila

Ms. SYLVIA MICLAT, Executive Director-ESSC

Dr. STÉPHANE LEYENS, LUCID Project Lead & Professor-
Département de sciences, philosophies et sociétés (SPS)-Université
de Namur

Introduction of participants

The Conference objectives:

1. Raise awareness and promote discussion about food, forests, and farmers in the Philippines in relation to sustainable food and agriculture and sustainable land management.
2. Deepen the understanding of HYV corn cultivation as it impacts smallholder farmers in the Philippines through different case studies and come up with solutions anchored on sustainable agriculture based on what is working on the ground.
3. Generate commitments to transformative action that contribute to global goals on food security and systems and create a system of monitoring that ensures that outcomes continue to drive new actions and progress through the sharing of experiences and knowledge.

1515h **Keynote Address**
- **Mme. JOSIANNE GAUTHIER**

1535h Secretary General
Coopération Internationale pour le Développement et la Solidarité
(CIDSE)

Keynote address "Righting our relationships to food, to people, and to the planet will require both courage and humility"

Q & A

1535h Thematic Keynote Presentations

-

1645h Theme 1: Financing Local Protection of Natural Resources and Enhancing Provisioning services
Dr C.T.S. NAIR, former Chief Economist- Forestry Department, FAO
"Degraded lands and marginalized people: What future for our forests, farms, and farmers?"

Theme 2 : Increasing Productivity and Adding Value to Regulating and Supporting Services to Farmers
Dr ARTEMIO M. SALAZAR, former National Corn Coordinator- Department of Agriculture
"Demand and challenges of HYV corn production in the Philippines and the possible ways to improve value chain productivity for our smallholder farmers"

Theme 3 : Improving Livelihoods to Foster Inclusive Economic Growth to Culture and Socio-Economic Services
Ms LILIAN MERCADO, Asia Pacific Regional Director- WWF
(regrets)

1635h Reactor

-

1655h Dr. JEAN-MARIE BALAND, Professor, FSESG-Economie-Université de Namur

Q & A, Open discussion

1655h Wrap up and Closing of Day 1

-

1700h Group photo

DAY 2, 23 NOVEMBER, TUESDAY

Expected outcome: Obtain a deeper appreciation of the HYV corn situation as it impacts the smallholder farmers in the Philippines through different case studies. To come up with definitions for sustainable agriculture by identifying what is and what is not working on the ground.

1450h Plenary, participants start to convene via Zoom meeting, Socials

1500h Welcome and opening of Day 2

-

1515h Host/Moderator: Ms. GLORIA AMOR PAREDES, Dialogue coordination for RAOEN, sustainability course development and facilitation-ESSC

Recap of Day 1

1515h Parallel sessions: Breakout rooms

-

1630h Thematic presentations and discussions

Breakout room 1: Theme 1, Financing Local Protection of Natural Resources and Enhancing Provisioning Services

Facilitator: Ms SYLVIA MICALAT, ESSC

Ms. CECILLE EGNAR, BENRO (Bukidnon) *“Land Use Change Trends in Bukidnon and Local Government Efforts to Support Community Forest Management”*

Mr. ARCHIE TULIN, NTFP-EP (Philippines) *“Perspective From the Ground: Indigenous Cultural Communities at the Forefront of Forest Conservation”*

Mr. LUDOVIC BEQUET, Université de Namur (Belgium) *“GM Corn and Landslides: A Case Study in the Philippine Highlands”*

Guide questions:

1. What are the (direct or indirect) drivers of change that affect the balance of the ecosystems/ecological services?
2. What are the ecological implications of land use change in the Philippines uplands, particularly of the encroachment of intensive agricultural practices, i.e. corn cultivation? What are the underlying mechanisms that enable this?
3. What are the ecological approaches we can consider to protect and enhance natural resources as well as to build the resilience of communities/government to vulnerabilities, threats, and risks?

Breakout room 2: Theme 2, Increasing Productivity and Adding Value to Regulating and Supporting Services to Farmers

Facilitator: **Ms ROWENA SORIAGA**, Director for Programs Development-ESSC

Engr. ROGER V. NAVARRO, *"PhilMaize (Philippines) "Ensuring the Rights of Our Corn Farmers under the Magna Carta of Small Farmers R.A. 7607 of 1992"*

Mr. DAVE VINCENT A. JAMAGO, Corn Trader & Farmer (Bukidnon) *"Shifting to a Tripartite Agreement to Support a more Sustainable Value Chain Production of HYV Maize in Mindanao"*

Ms. CLARICE MANUEL, Université de Namur (Belgium) *"A Tale of Two Varieties: GM corn cultivation in the Philippine uplands"*

Guide questions:

1. What are the reasons behind a farmer's decision to adopt GMO corn? How has this variation affected their food security, health, and nutrition?
2. How has the land use change brought about by corn farming affected the welfare of the farmers and their households?
3. What are the possible improvements in the value chain to help the farmer receive what is due to him? To come up with definitions for sustainable agriculture by identifying what is and what is not working on the ground.

Breakout room 3: Theme 3, Improving Livelihoods to Foster Inclusive Economic Growth to Culture and Socio-Economic Services

Facilitator: **Ms. GLORIA AMOR PAREDES**, ESSC

Ms. PJ CAPISTRANO, ADMU-Quezon City (Manila) *"An Exploration of Structural Injustice through the System of Smallholder Corn Farming in the Upper Pulangi"*

Mr. GARY BEN S. VILLOCINO, MASIPAG (Mindanao) *"Countering MAISAGANA: Highlights and Challenges in Improving and Conserving Native Corn"*

Dr. MILADIS M. AFIDCHAO, Isabel State University (Isabela) *"Genetically Modified (GM) Corn in the Philippines: Ecological Impacts on Agro-ecosystems, Effects on the Economic Status and Farmers' Experiences"*

Guide questions:

1. How do we improve the sustainable performance of the supply chain?
2. What are the new ways to enhance sourcing, production, and distribution partners?
3. How can we promote inclusive economic growth while maintaining the socio-cultural identity of communities? To come up with definitions for sustainable agriculture by identifying what is and what is not working on the ground.

1630h **Plenary, reporting, and open discussion**

-

1655h

1655h **Wrap-up and Closing of Day 2**

-

1700h **Group photo**

DAY 3, 24 NOVEMBER, WEDNESDAY

Expected outcome: Generate significant action coupled with measurable indicators for monitoring that contribute to global goals on food security and systems and create a process of follow up that ensures that outcomes continue to drive further actions and progress through sharing of experiences and knowledge.

1450h Plenary, participants start to convene via Zoom meeting, Socials

1500h Welcome and opening of Day 3

-

1515h Host/Moderator: Dr J. ANDRES F. IGNACIO, LUCID Project South Coordinator & Director for Planning and Geomatics-ESSC

Recap of Day 2

1515h Our Way Forward

-

1630h Forest, Farm, and Leadership in the Margins (Mindanao): video presentation *"Cultivating Hope in Community: Youth Training and Accompaniment"*

Ms ROWENA SORIAGA, Director for Programs Development-ESSC
"COP26 Outcomes – what they mean for food, forests and farmers"

Mr LEONARDO Q. MONTEMAYOR, Former DA Secretary/ Board Chairman-Federation of Free Farmers *"Transform Philippine Agriculture for Food Security, Job Creation and Balanced Growth"*

Q & A

Brainstorming for strategic actions

Guide Questions:

1. What are the key findings and recommendations on social justice and land transformation? What are the tools developed to tackle the negative impacts of long-term land use change due on high input crops in the uplands?
2. In which respect do agricultural practices affect the perception of well-being and social justice the people have? What are the relationships that tie together small farmers with local financiers, and the broader social structures that tie local financiers with seed companies and local government patrons. Conversion factors?
3. In what respect do youth and elders have different perceptions of the pros and cons, in terms of quality of life, of HYV corn agriculture? How can we establish equitable agriculture and livelihood in the uplands?

1630h Synthesis and Closing Remarks

- PEDRO WALPOLE SJ, Ph.D., Director for Research-ESSC

1700h

Group photo



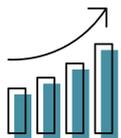
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Since the widespread adoption of GM corn, northern Mindanao has experienced expropriation of land, continuous debt, food insecurity, and heightened poverty. (Photo by A Ignacio)

SUSTAINABLE PATHWAYS FOR THE FUTURE

Sustainable Food and Agriculture (SFA) is ensuring that present and future needs are met economically and environmentally and that food is nutritious and accessible to everyone. The vision is that producers, foresters, farmers, and other local stakeholders are heard, benefit from economic development, have control over their livelihoods, and have equitable access to resources which are used in an efficient way.

The following five principles of sustainability for food and agriculture was developed by the FAO to promote SFA in helping achieve Zero Hunger and the Sustainable Development Goals:³⁶



Increase productivity, employment, and value addition in food systems



Enhance the resilience of people, communities, and ecosystems



Protect and enhance natural resources



Adapt governance to new challenges



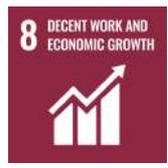
Improve livelihoods and foster inclusive economic growth



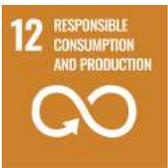
This year, the United Nations runs several processes that build structures and practical actions for the Food Systems Summit. Five Action Tracks have been defined, bringing together key players from the “worlds of science, business, policy, healthcare, and academia, as well as farmers, indigenous people, youth organizations, consumer groups, environmental activists, and other key stakeholders” to develop tangible, positive changes to the world’s food systems³⁷



Action Track 1
Ensure access to safe and nutritious food for all



Action Track 4
Advance equitable livelihoods



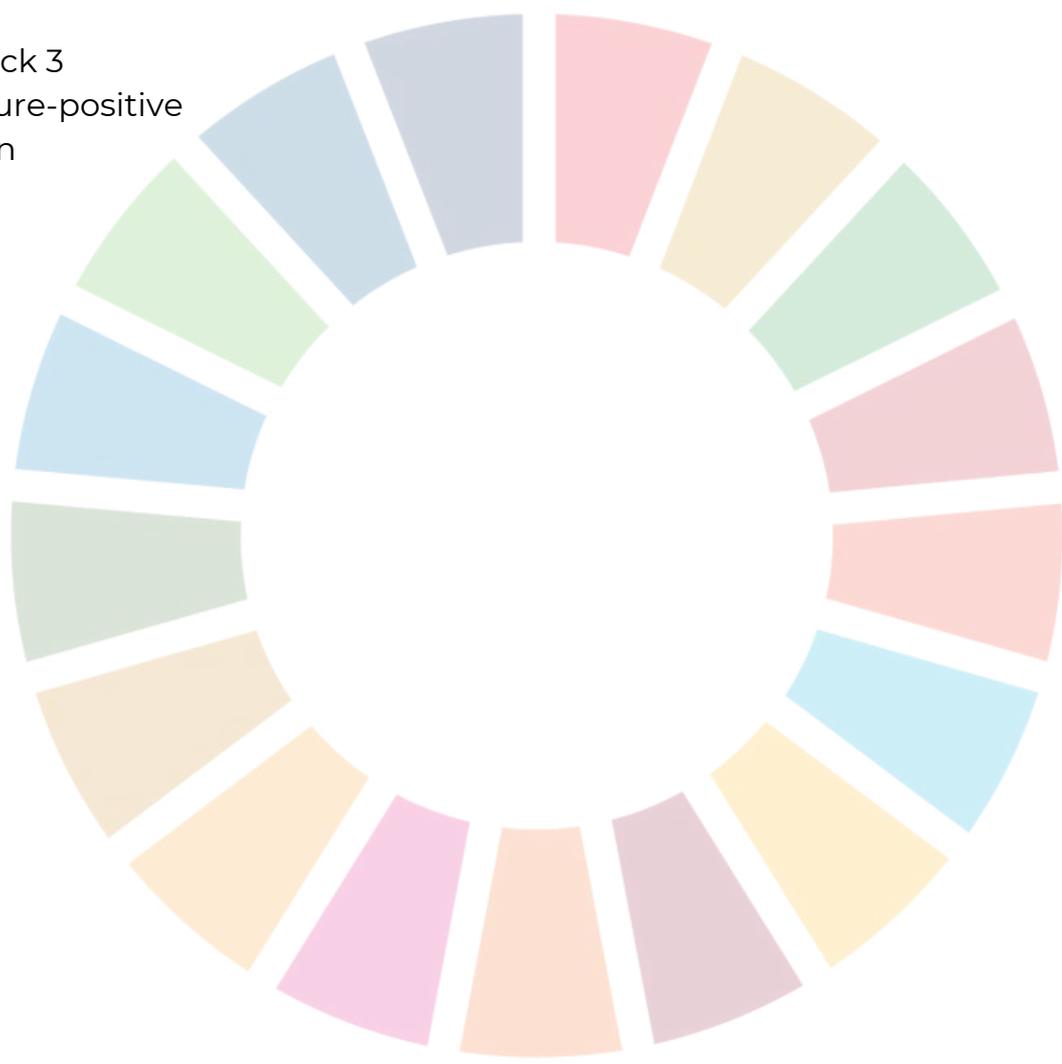
Action Track 2
Shift to sustainable consumption patterns



Action Track 5
Build resilience to vulnerabilities, shocks, and stress



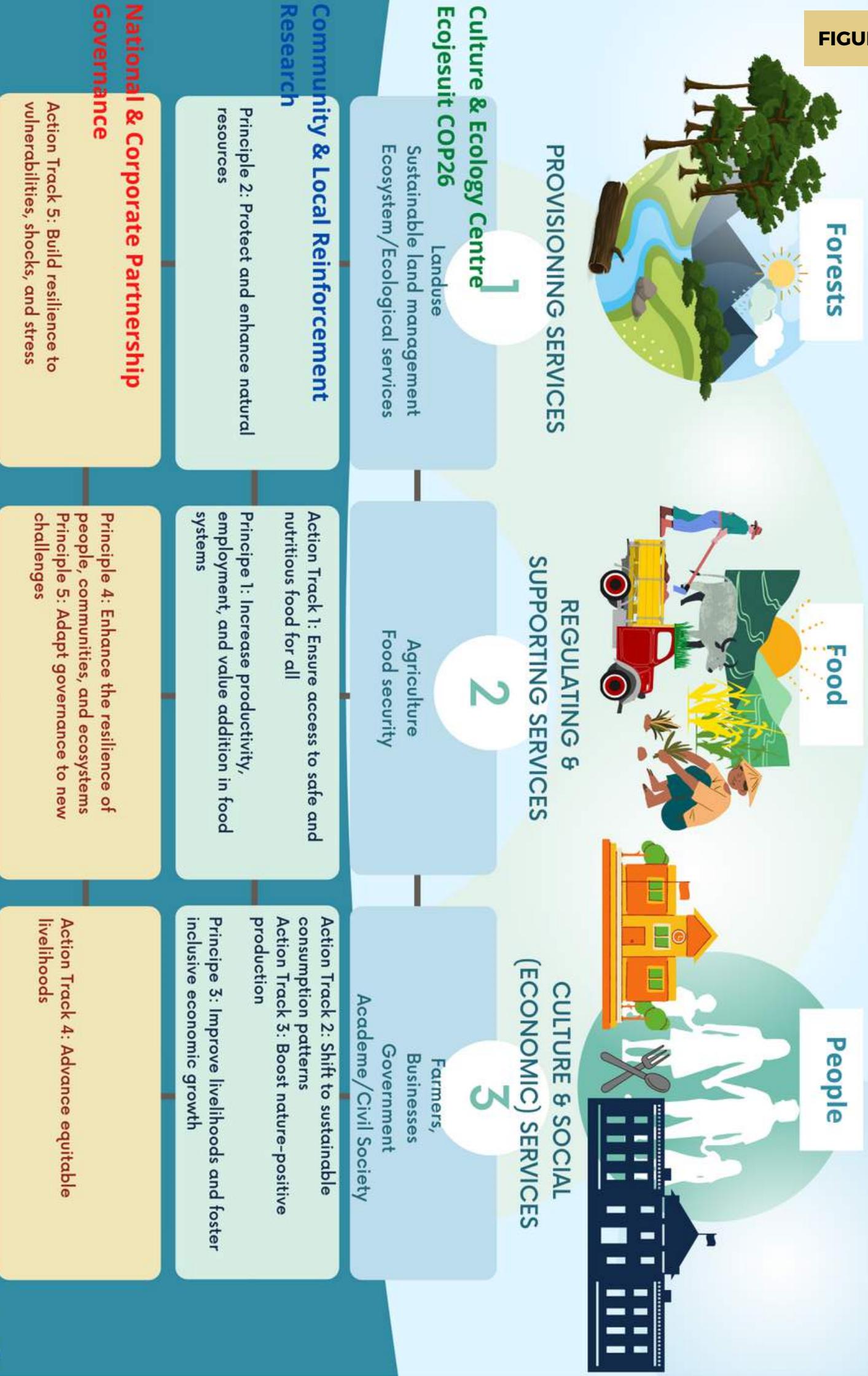
Action Track 3
Boost nature-positive production



37 [HTTPS://WWW.UN.ORG/EN/FOOD-SYSTEMS-SUMMIT/ACTION-TRACKS](https://www.un.org/en/food-systems-summit/action-tracks)

FIGURE 4

Sustainable Pathways for the Future



The Philippines strategy on sustainable development goals

In 2015, the 2030 Agenda for Sustainable Development was adopted by all United Nations Member States, including the Philippines, as a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity, now and into the future.³⁸

In the Philippines, the Sustainable Development Goals (SDGs) are integrated in the Philippines medium-term Development Plan (PDP) and AmBisyon Natin 2040, which resulted from a long-term visioning process that began in 2015. The AmBisyon 2040 is a collective long-term vision and aspirations of the Filipino people, “to be a prosperous, predominantly middle-class society where no one is poor; our people shall live long and healthy lives, be smart and innovative, and shall live in a high-trust society”, where Filipinos enjoy a strongly rooted (*matatag*), comfortable (*maginhawa*), and secure life (*panatag na buhay*).³⁹ The goal is to achieve economic growth while maintaining the country’s biological resources and its diversity and overall environmental quality.

The Philippines sets the path for development through the PDP 2017-2022.⁴⁰ This development plan aims to reduce child malnutrition and build resilience of vulnerable populations. It also seeks to support the development of policies and guidelines directly related to food security and nutrition and Sustainable Development Goal#2: Zero Hunger- end hunger, achieve food security and improved nutrition and promote sustainable agriculture. Moreover, the PDP 2017-2022 strategies are organised into three pillars that are expected to lead to “more inclusive growth, a high-trust and resilient society, and a globally competitive knowledge economy” by 2022 and more “strongly rooted, comfortable, and secure lives” by 2040.⁴¹

38 [HTTPS://SDGS.UN.ORG/GOALS](https://sdgs.un.org/goals)

39 [HTTP://2040.NEDA.GOV.PH](http://2040.neda.gov.ph)

40 [HTTPS://GOVERNANCE.NEDA.GOV.PH/PHILIPPINE-DEVELOPMENT-PLAN/#:~:targettext=the%20philippine%20development%20plan%202017-2022%20is%20the%20first%20medium,na%20buhay%20para%20sa%20lahat](https://governance.neda.gov.ph/philippine-development-plan/#:~:targettext=the%20philippine%20development%20plan%202017-2022%20is%20the%20first%20medium,na%20buhay%20para%20sa%20lahat).

41 [HTTPS://PHILIPPINES.UN.ORG/SITES/DEFAULT/FILES/2020-08/PARTNERSHIP%20FRAMEWORK%20FOR%20SUSTAINABLE%20DEVELOPMENT%202019-2023.PDF](https://philippines.un.org/sites/default/files/2020-08/partnership%20framework%20for%20sustainable%20development%202019-2023.pdf)

The three pillars include:

1. enhancing the social fabric, which centers on improving the quality of governance,
2. reducing inequality, which focuses on expanding economic opportunities and increasing access to these, and
3. increasing potential growth.

The path to achieving the goal i.e. zero hunger is far from reaching; nevertheless, the government continues to develop and implement programs to eradicate poverty and promote inclusive growth for all. For instance, to eradicate extreme poverty in the country, the Duterte Administration adopted the Pantawid Pamilyang Pilipino Program⁴² (4Ps) of the Aquino regime and institutionalised its provision of cash grants to poor households in order to improve health and nutrition of children aged 0 to 8 years old and send them to school, given that they meet certain conditions (Official Gazette, n.d.).

Philippines agriculture and beyond

Agriculture plays a major role in the Philippine economy. As of January 2018, the agricultural sector employs approximately 10.9 million people or 26 percent of the nation's employment;⁴³ thus, according to the Philippine Statistics Authority, agriculture plays a significant role in the domestic economy and livelihoods of everyday Filipinos. And while agriculture is economically and culturally significant to the country, the majority of the agricultural frontlines remain hungry and live below the official poverty threshold.

42 [HTTPS://WWW.OFFICIALGAZETTE.GOV.PH/DOWNLOADS/2019/04APR/20190417-RA-11310-RRD.PDF](https://www.officialgazette.gov.ph/downloads/2019/04apr/20190417-RA-11310-RRD.PDF)

43 [HTTPS://WWW.PNA.GOV.PH/ARTICLES/1038439](https://www.pna.gov.ph/articles/1038439)

The economic exploitation of small farmers appears to be widespread in the Philippines. Since the widespread adoption of GM corn in the mid-2000s, small scale farmers from Upper Pulangi in Bukidnon, northern Mindanao have experienced expropriation of land, continuous debt, food insecurity, and heightened poverty.⁴⁴ Substantially, this resulted in economic disparities between farmer households and financiers and businessmen. Despite the clear disadvantage, small farmers continue to farm high-yield variety corn due to its convenience and less labor intensive than traditional corn farming.⁴⁵

According to Brown et.al. (2018), the government' investment in research and development is only at 0.3 percent of the GDP annually, way below the one percent recommended by the World Bank.⁴⁶ And the lack of protection from natural calamities and income equality has exacerbated the situation of the farming communities in the uplands.

In 2020, the Department of Agriculture developed a framework with a vision for the country to have a “food-secure and resilient Philippines with prosperous farmers and fisherfolk”. This framework aims to operationalise five core strategies on farm (**Figure 5**): 1) consolidation, 2) modernization, 3) industrialization, 4) export promotion, and 5) infrastructure development; that focuses on food production particularly on: availability, accessibility, affordability, price stability, and food safety.⁴⁷

44 [HTTPS://LUCID.ESSC.ORG.PH/ARCHIVES/275](https://lucid.essc.org.ph/archives/275)

45 [HTTPS://LUCID.ESSC.ORG.PH/ARCHIVES/359](https://lucid.essc.org.ph/archives/359)

46 [HTTPS://AP.FFTC.ORG.TW/ARTICLE/500](https://ap.fftc.org.tw/article/500)

47 [HTTPS://WWW.DA.GOV.PH/IATF-OKAYS-FOOD-SECURITY-DEVELOPMENT-FRAMEWORK/](https://www.da.gov.ph/iatf-okays-food-security-development-framework/)

FIGURE 5



Sustainable agriculture and the potentials of Agroecology in the uplands

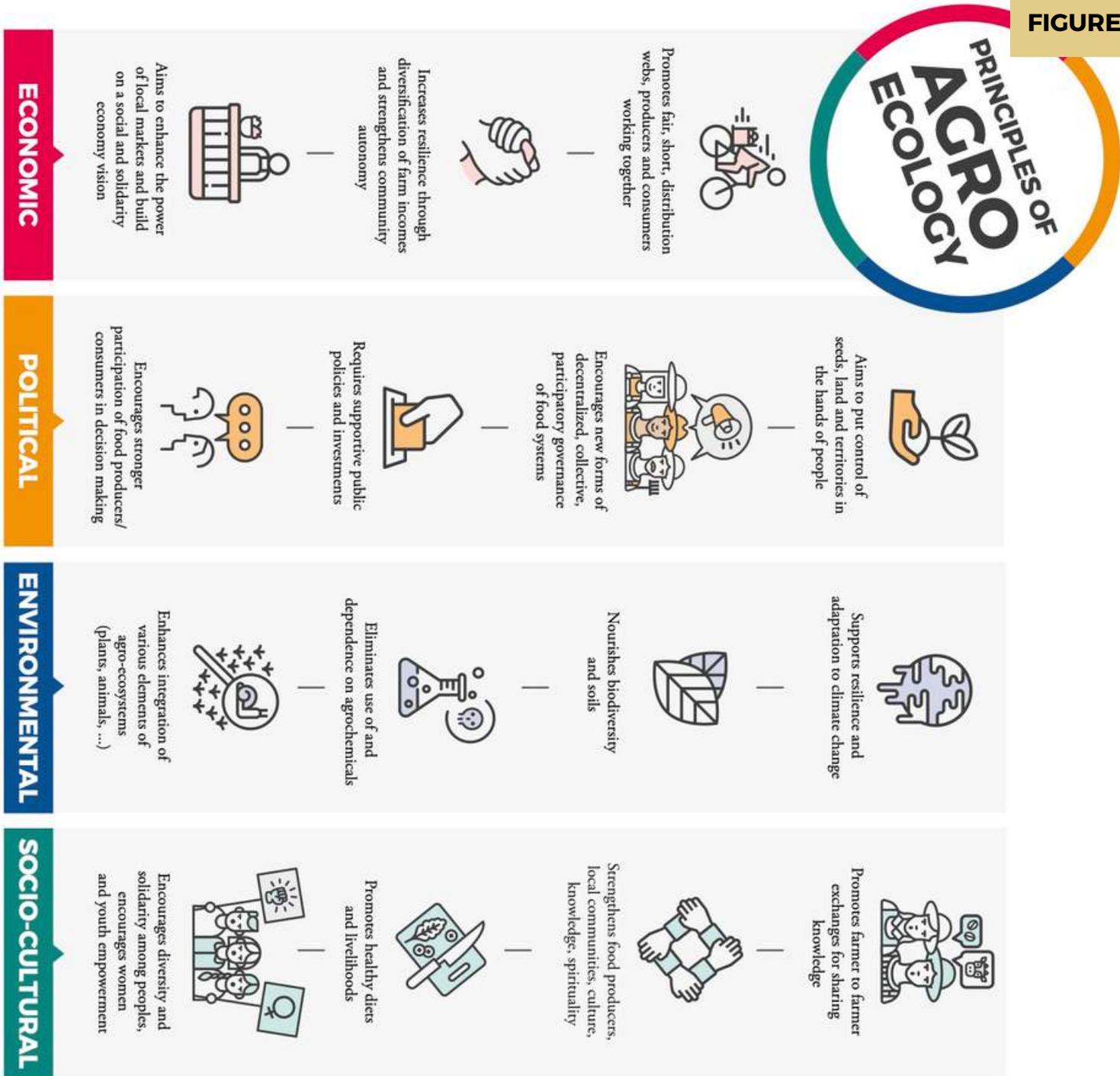
Agroecology practices remain the best avenue for eradicating poverty while protecting the environment. It is considered a bottom-up approach based on both local knowledge and science that helps contextualise the root causes of the problems and provide holistic and integrated solutions.

For decades, the upland farmers and communities suffered from exploitation and neglect; and to some extent, they were marginalised.

The CIDSE Principles of Agroecology presents a set of broad guidelines that constitute the building blocks of agroecology, its practice and implementation (**Figure 6**). Its principles and practices enhance the resilience and sustainability of farming systems while preserving social integrity.

Economic/political/environmental/social-cultural

- Agroecology promotes principles rather than rules or recipes of a transition process.
- Agroecology is the result of the joint application of its principles and the values that lie behind them to the design of alternative farming and food systems. It is therefore acknowledged that the application of the principles will be done progressively.
- The principles are valid across the diversity of territories and lead to various practices in different places and contexts.
- All principles should be interpreted in the context of improving integration with the natural world, and justice and dignity for human and non-human actors and processes.



THE 3 FACETS OF AGROECOLOGY

AGROECOLOGY IS:

1. A scientific research approach involving the holistic study of agro-ecosystems and food systems;
2. A set of principles and practices that enhance the resilience and sustainability of food and farming systems while preserving social integrity;
3. A socio-political movement, which focuses on the practical application of agroecology, seeks new ways of considering agriculture, processing, distribution and consumption of food and its relationships with society and nature.

WHAT ARE THE PRINCIPLES OF AGROECOLOGY

THESE PRINCIPLES ARE A SET OF BROAD "GUIDELINES" THAT CONSTITUTE THE BUILDING BLOCKS OF AGROECOLOGY, ITS PRACTICE AND IMPLEMENTATION:

- » Agroecology promotes principles rather than rules or recipes of a transition process.
- » Agroecology is the result of the joint application of its principles and the values that lies behind them to the design of alternative farming and food systems. It is therefore acknowledged that the application of the principles will be done progressively.
- » The principles are valid across the diversity of territories and lead to various practices in different places and contexts.
- » All principles should be interpreted in the context of improving integration with the natural world, and justice and dignity for human and non-human actors and processes.

”

There is no food sovereignty without agroecology. And certainly, agroecology will not last without a food sovereignty policy that backs it up.

Itezanina Coulibaly



Actionable steps: taking small actions

Our hope

We seek to open the discussion and raise awareness about the relationships and dynamics among food, forests, and farmers in the Philippines. The socio-economic and environmental structures in place need to be reviewed in such a way that they promote environmental sustainability and at the same time provide economic opportunity to local farmers.

We hope that the research and scientific investigations, combined with local knowledge and socio-economic information can help in developing principles for equitable and sustainable food systems and land management.

We pursue to generate significant action and measurable indicators ensures that outcomes continue to drive new actions and progress through sharing of experiences and knowledge.

The way forward

Socio-economic, political: Towards achieving food security and sustainability where markets provide equal opportunities to local farmers and business (middleman and traders) to gain and profit.

- Advocate access to market for all and promote social justice
- Generate guidelines to support farmers towards equitable and sustainable food systems and land management
- Review existing HYV corn market systems/ trading and policies
- Increase resilience through diversification and adapt “fair trade” scheme

Socio-cultural: Empowering local farmers to boost their productivity and promote local knowledge exchanges.

Foster relationships between local farmers and communities and businessmen and markets.

- Commit to healthy diet and livelihoods
- Encourage diversity and youth and women involvement
- Learning by example

Environmental: Integrated forest and land use management to support resilience and adaptation to climate change

- Tracking land use change and its impacts to broader ecosystem services
- Understanding
- Invest in research and development
- Embrace a wholistic approach to land use planning and management

understand
socio-economic-environment
change dynamics



sustaining
diversity
resilience

fair trade

community
cooperatives
sustainability
farmers

agroecology

experiment

innovation from
bottom-up

food for all

THE FUTURE

learn
adjust

equity

crop
diversification

social justice

sustainable
agriculture
inclusive
growth

adapt

WE WANT

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