



# AGROECOLOGY DIALOGUE SERIES

## Agroecology as a response to agri-input scarcity

**T**his paper presents four main findings and key recommendations of a dialogue that explored the **role of agroecology in increasing resilience to agri-input scarcity** in the context of the current global food crisis.

It aims to support and feed into the Coalition for food systems transformation through Agroecology (Agroecology Coalition) and contribute to the emergence of a broader framework on multiple pathways for food systems transformation. Its findings reflect the diverse backgrounds, opinions, and areas of expertise of dialogue participants, and are not intended to convey the opinions of the organizing institutions.

Prices of agri-inputs, in particular fertilizers and energy, are at record highs. The increase in fertilizer prices started towards the end of 2021 and has been amplified by the war in Ukraine. Disruption in fertilizer affordability and availability is creating concern about future harvests and global agricultural production. This situation is exacerbated by other climatic and political factors.

“ A food systems transformation towards agroecology requires making markets provide space for nature, profit for farmers and better human wellbeing, moving away from a narrow focus on supply-must-grow-to-meet demand considerations”

**Tim Benton, Director Environment and Society Programme, Chatham House**

Considering that **agroecological systems are low-external-input-based systems that promote locally sourced inputs and/or circularity of nutrients within and between neighbouring farms**, the aim of this dialogue was to discuss agroecology as a potential option for navigating the ongoing agri-input crisis. Concretely, participants in the dialogue looked at the supply crisis for synthetic fertilizers and its current impacts on food systems; the potential costs and benefits of agroecological transition; enabling factors for a transition to agroecology for different stakeholders; and technical, economic and policy incentives that could promote farming systems that recycle nutrients.

**Figure 1:** Overview of the key messages and recommendations presented in this outcome brief on agroecology as a response to agri-input scarcity

## Overview

During the dialogue, participants first explored the role of agroecology in increasing resilience to agri-input scarcity in the context of the current global food crisis. **Four key messages can be highlighted from the discussions:**

- |          |  |          |   |
|----------|--|----------|---|
| <b>1</b> | Agroecological farming systems are more resilient to international input scarcity than conventional systems. | <b>3</b> | Creating enabling conditions for agroecological transition is paramount amid rise in agri-input prices. |
| <b>2</b> | The agri-inputs crisis is an opportunity for food system transformation.                                     | <b>4</b> | Changing narratives and mindsets about agroecology is necessary for activating a transition towards it. |

Afterwards, participants made a set of recommendations for tackling agricultural input scarcity through agroecology. **These are grouped together to align with the focus areas of the Agroecology Coalition’s five working groups:**

 <b>Research</b>	<ul style="list-style-type: none"> <li>• Conduct research studies using true cost accounting methods to compare conventional and agroecological farming systems;</li> <li>• Use transdisciplinary and participatory action research methods to develop and strengthen agroecological practices; and</li> <li>• Strengthen the use of tools that assess food systems in a multidimensional way.</li> </ul>
 <b>Communication and advocacy</b>	<ul style="list-style-type: none"> <li>• Increase awareness about the cost-effectiveness of agroecological systems;</li> <li>• Address the misperception that an agroecological transition will necessarily lead to lower yields; and</li> <li>• Highlight agroecology's potential to help address multiple crises at the same time.</li> </ul>
 <b>Investments</b>	<ul style="list-style-type: none"> <li>• Encourage and upscale investment and business development in bio-based inputs at a territorial scale; and</li> <li>• Ensure financial support is available during the transition phase and target it at collective organisations (e.g. cooperatives).</li> </ul>
 <b>Policies</b>	<ul style="list-style-type: none"> <li>• Redirect subsidies and other financial tools to move away from synthetic fertilizers;</li> <li>• Align policies to support the transition to low-synthetic-input systems; and</li> <li>• Formulate policies that support the development of knowledge centres on low-synthetic-input practices.</li> </ul>
 <b>Implementation</b>	<ul style="list-style-type: none"> <li>• Engage in peer-to-peer learning to develop agroecological systems adapted to local contexts (e.g. farmer-to-farmer exchanges);</li> <li>• Prioritize quick-win solutions that demonstrate the effectiveness of alternatives to chemical fertilizers; and</li> <li>• Use increased fertilizer prices as an opportunity to explore and adopt practices that do not depend on external inputs.</li> </ul>

## Four main findings

### 1 Agroecological farming systems are more resilient to international input scarcity than conventional systems

During the dialogue, participants recognized that agroecology has already been demonstrated as a valid answer to higher synthetic fertilizer prices and that **agroecological farmers are more resilient and even economically thriving in the current polycrisis.**

Lack of synthetic fertilizers can lead to a 40 to 50 percent yield reduction for conventional farming systems. However, participants reported that **agroecological systems have been less affected by current price increases for synthetic fertilizers** because they use less, or no, synthetic/imported input. They also favour farm-level production of organic fertilizer and local seeds, which are less dependent on imported input and yet are better adapted to local soil and climatic conditions. Being less dependent on imported synthetic fertilizers, agroecological farmers have been able to maintain their cultivation calendars and sow at suitable times. In addition to increased input prices, energy prices are also high this year, resulting in higher transportation costs for inputs and food. As supplies of agroecological produce are often targeted primarily at local markets, **agroecological farmers have been less impacted by increments in transportation costs.**

Considering the high input and energy prices, **agroecological farming systems have been more competitive compared to their conventional counterparts.** In fact, agroecological farms have enjoyed **lower production costs** because they didn't have to purchase fertilizers at a high price. In addition, they can **benefit from the rise in food prices.** In the future, **high input and energy prices and the subsequent impact on food prices might become the norm.**

Participants also cited examples from their own country or project where agroecological farmers were not only less impacted by the current fertilizer crisis but were **more resilient to other additional climatic and geopolitical challenges** encountered this year.

Participants concurred that volatile commodity markets, the pandemic, disruptions to global logistics, land degradation, the disappearance of traditional crop varieties, and the effects of climate change were aggravating factors in the agri-input crisis. They stated that agroecological practices, such as land and water conservation, conservation of traditional species, and diversification, can shield farmers from these crises. Agroecological farming systems are based on **ecological processes** – such as diversification, crop-

livestock integration, and intercropping with legumes – that promote nutrient cycling at the farm and/or territory level. Those practices **maintain agrobiodiversity, emit less greenhouse gases and can be an effective buffer against climate variability.** In addition, agroecology provides other **social and economic benefits, including**

**dietary diversification, respect for local food tradition and Indigenous Peoples' knowledge, and short value chains.** It can therefore not only contribute to addressing the agricultural input scarcity crisis but help to reshape food systems by reducing the focus on a few cereal crops and promoting nutritious healthy diets.



### Case study - Long-term trials in Kenya demonstrate comparative advantages of agroecological farming systems

Since 2007, Switzerland's Research Institute of Organic Agriculture (FiBL) and partners have implemented four long-term experimental trials comparing organic and conventional farming in Kenya, India and the Plurinational State of Bolivia. The aim of the trials is to provide solid agronomic, ecological and socioeconomic data on the performance of major agriculture production systems to support decision-making towards achieving food security and agricultural and environmental sustainability.

In Kenya, two long-term trials were set up in Chuka, which is a high rainfall area, and in Thika, a dry area. In addition, three on-farm trials set out to solve challenges, such as poor soil fertility, droughts, pests and diseases, that farmers face in achieving agricultural sustainability. Sustainability indicators assessed include productivity, profitability, environmental soundness, resource conservation and social acceptability.

Results obtained from 13 years of continuous trials (2007 to 2019) showed that moving away from input substitution to a diversified farming system and agroecological approach under active organic management led to similar or higher crop yields than the conventional production systems under active management. The threat of pests and diseases increased with exacerbated climate change but the use of integrated pest management – such as biopesticides, sticky traps, diversification and companion cropping – reduced their incidence and impact. Soil erosion and nutrient depletion in conventional systems were far higher than in the organic system. Overall, the results demonstrate the advantages of organic and agroecological farming systems regarding resource efficiency, ecosystem functioning and soil fertility, plus the ability to maintain high production levels. The results of this research are expected to be published by early 2023.

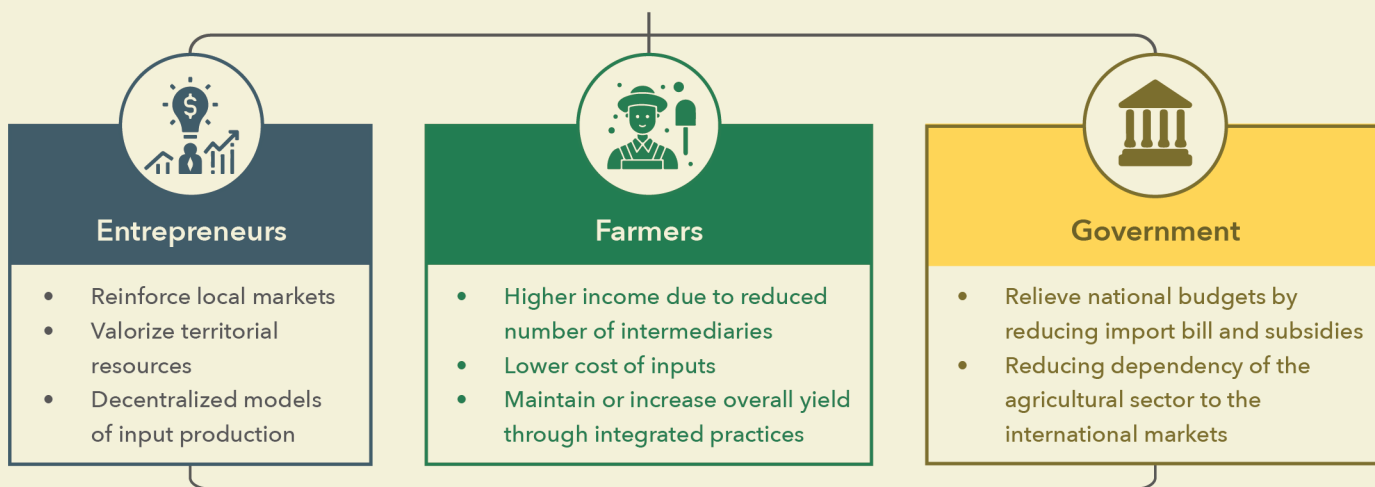
## 2 The agri-inputs crisis is an opportunity for food system transformation

Current agri-input price increases are forcing farmers and their governments to reconsider the role, use, management and governance of synthetic fertilizers. Participants agreed that this **crisis presents an opportunity to systemically address unsustainable agricultural practices**, including high-input-based conventional systems which endanger the environment and human health.

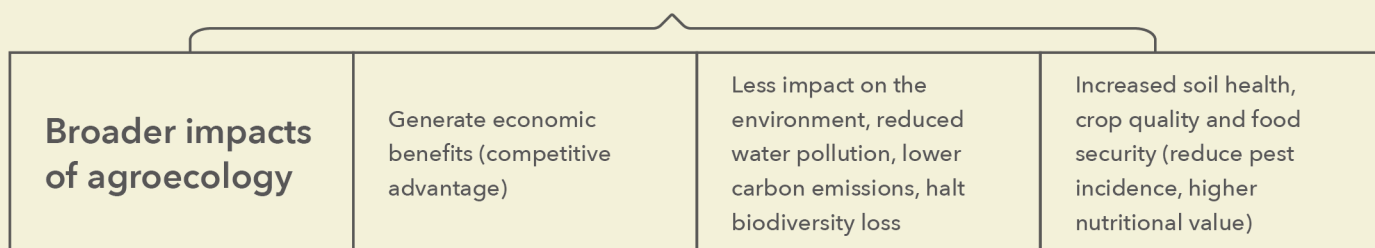
Participants noted that the **spike in input prices led farmers to reduce input use and/or switch to less input-intensive cropping systems**. Efficient and effective use of fertilizers involves aiming to match nutrient supply with crop requirements to optimize yield while minimizing nutrient losses to the environment. While **efficiency - reducing the quantity used, applying at an appropriate rate and time, and reducing surplus runoff -**

Figure 2: What agroecology can offer to stakeholders in light of the agri-input crisis

### The agri-input crisis as an opportunity: What agroecology can offer to different stakeholders



### Agroecology\* reduces dependency on imported synthetic agri-inputs and increases resilience to agri-input price



\*Agroecology systems are low external-input-based systems, promoting locally sourced inputs and/or circularity of nutrients within and between neighbouring farms or at the territorial level.

is one of FAO's ten Elements of Agroecology, it is **only a first step in agroecological transition and is not enough to transform farming systems**. Besides, government policies and market incentives that focus on increasing fertilizers' efficiency might ultimately trigger an even bigger rebound in fertilizer use – the so-called Jevons Paradox.

Even before recent fertilizer price increases, there were many **unresolved challenges around the storage, distribution and use of fertilizers**. These include untimely delivery and improper application of fertilizers, leading to leaching or crop failure; blanket recommendations for their use, irrespective of soil types or year-to-year specific factors; and inappropriate packaging and lapsed expiry dates. These all **weighed on farmer incomes and livelihoods even before fertilizer price increases**. Therefore, there is a need to **incentivize practices in favour of agroecology, while discouraging dependency on synthetic agri-inputs**.

Participants concluded that doing so will not only generate economic, environmental and health benefits for communities but also benefit governments by reducing the financial burden of subsidizing synthetic inputs.

Participants flagged several **advantages and co-benefits related to the reduction of synthetic input use**, based on evidence from previous research and field experiments.

Firstly, it is largely demonstrated that **reducing or eliminating use of synthetic fertilizers results in less or no detrimental impact to the environment**. For example, water pollution, carbon emissions and biodiversity loss are reduced, soil health improves, and agricultural products have higher nutritional value and are safer for human consumption.

Participants also reported that **lower use of synthetic fertilizers reduces the incidence and abundance of agricultural pests**.

There are also **many proven alternatives to synthetic fertilizers**. These include basic good agronomic practices – ranging from diversification, legume intercropping and rotation to agroforestry and crop-livestock integration – and the use of recycled waste and nutrients, such as municipal waste, food waste, humanure and slaughterhouse waste.

They argued that **employing alternative inputs generates numerous co-benefits for farmers, governments and entrepreneurs**, and helps tackle several challenges simultaneously. For example, **high fertilizer prices present a commercial opportunity for entrepreneurs to expand the supply of alternative organic inputs**, such as manures, biofertilizers and leguminous crop seeds in decentralized markets. Policymakers should therefore pay more attention to such alternatives and facilitate their increased production.



## Case study - National response to fertilizer price increase in Ethiopia

Ethiopia is home to more than 110 million people. In 2022, ten to 15 million people are reported to be food insecure due to poverty and natural disasters, exacerbated by man-made conflicts and population displacements. Ethiopia relies on imported chemical fertilizer, which is primarily used for cereals production. In the cropping season of 2022/2023, the price of fertilizers and pesticides increased more than three-fold from the previous year. The Government of Ethiopia announced it was incapable of maintaining the import and distribution of chemical fertilizers, not only due to high fertilizer prices but because of foreign currency scarcity. To address this, it set up a task force charged with assessing technical, policy and social measures that could be implemented rapidly to alleviate fertilizer scarcity.

The Ministry of Agriculture accelerated the registration and commercialization of 43 alternative organic liquid fertilizers. Private-sector actors can now engage in the commercialization and distribution of fertilizers, which until 2022 had been handled only by a government-owned enterprise. Governmental extension agents are promoting and mobilizing capacity and technical know-how for the production

of farm-level organic fertilizers, such as animal manure, biogas slurry, compost and vermicompost. The government has maintained subsidies for farmer organizations and cooperatives, helping cover their transport and distribution costs. Imports of chemical fertilizers and agricultural machinery have been exempted from tax. Farmers are shifting from input-dependent crops to less fertilizer-dependent ones, such as legumes. A production safety net has been created for poor farmers, with the government and NGOs providing fertilizer and seed inputs for free.

For the 2022/2023 production season, Ethiopia's fertilizer supply will meet barely 50 percent of national demand. The Ministry of Agriculture expects a 20 percent reduction in crop production this year. Imports of agricultural products have increased, worsening the shortage of foreign currency.



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### 3 Creating enabling conditions for agroecological transition is paramount amid rise in agri-input prices

Participants recognized that **supporting the transition towards agroecology by reducing dependency on synthetic fertilizers requires a medium to long-term strategy** in which not only farmers **but all actors in food systems have roles and responsibilities**. Reducing dependency on synthetic fertilizers requires moving beyond a conventional focus on optimum input/output and towards creating more efficient farms that are based on biological processes and that recycle biomass, nutrients and water. Participants proposed several technical, political and market-enabling actions that food system actors should take to reduce agri-input dependency.

At the farm level, participants flagged many agroecological practices that are evidenced to reduce input dependency while also addressing other production challenges. However, **farmers might experience challenges or uncertainties while transitioning** to these practices. **Technical advice** and – whenever possible – **financial support or insurance** from the public sector can help. Participants also highlighted the **importance of involving local actors and civil society to create, promote and maintain locally relevant solutions to input scarcity**. This involves **building on traditional knowledge and existing local farming**

**practices** that are less input-dependent while leveraging scientific knowledge to improve and build evidence about the performance of those practices.

At the territorial level, a transition to reduced dependency on synthetic fertilizers can be supported by **facilitating waste and nutrient recycling schemes**.

At the national level, participants suggested that trade and food policies should be oriented to **promote agroecological products by setting a minimum share for them in public procurement** of agricultural products, and by **favouring food sovereignty over an export/import-based strategy**.

Effective policies that can enable agroecology do exist, but they are not widely known. Efforts should first be directed at **raising awareness among policymakers and investors about agroecology** and the multiple benefits it provides. There is a **need for research** that investigates the root causes of the negative impacts of high-input farming, explains the complexity of agroecological systems, addresses issues around labour and small-scale mechanization, and analyses the true cost-effectiveness of agroecology in the current environment of high fertilizer and energy prices.

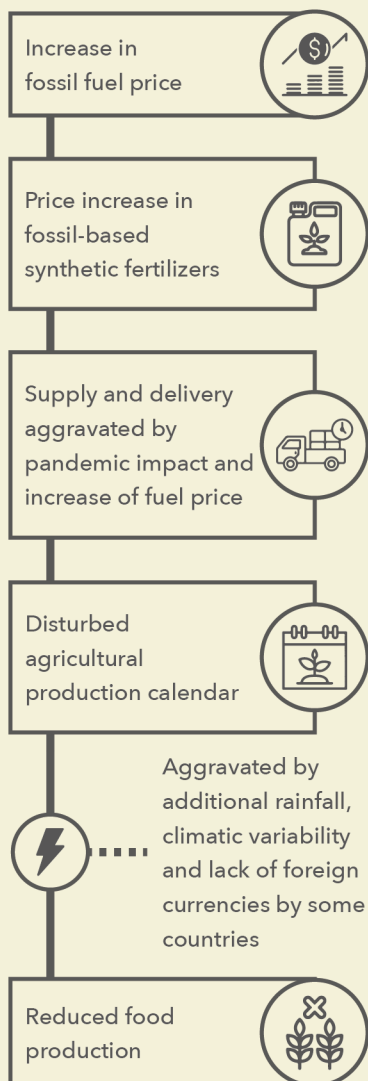


Redirecting high subsidies for synthetic fertilizers towards locally produced organic fertilizers and biopesticides is another important policy action that can help scale up agroecology while responding to agri-input scarcity. This will enable governments to **reduce the burden on their budgets from subsidizing expensive imported fertilizers and encourage local value generation.** This reallocation of subsidies can also be used to

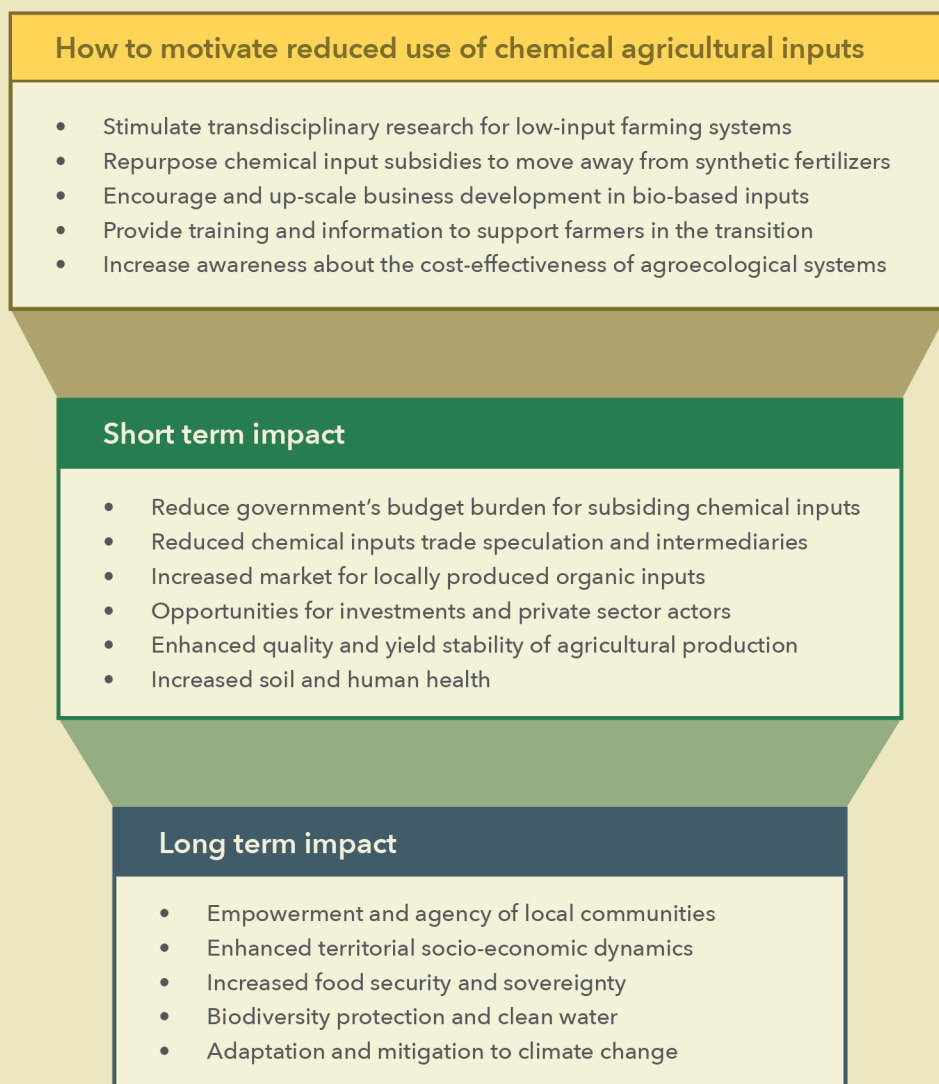
incentivize farmers and other food-system actors to create positive externalities, such as reduced water pollution, lower greenhouse gas emissions, improved farmer health and more nutritious food. However, **policy changes at the global level are also necessary.** For example, current free trade agreements that lock in conventional agriculture should be revisited.

Figure 3: Agri-input dependency and the path out of it through agroecology

### Current situation: agri-input dependency



### Pathway out of agri-input dependency through agroecology



#### How to motivate reduced use of chemical agricultural inputs

- Stimulate transdisciplinary research for low-input farming systems
- Repurpose chemical input subsidies to move away from synthetic fertilizers
- Encourage and up-scale business development in bio-based inputs
- Provide training and information to support farmers in the transition
- Increase awareness about the cost-effectiveness of agroecological systems

#### Short term impact

- Reduce government's budget burden for subsidizing chemical inputs
- Reduced chemical inputs trade speculation and intermediaries
- Increased market for locally produced organic inputs
- Opportunities for investments and private sector actors
- Enhanced quality and yield stability of agricultural production
- Increased soil and human health

#### Long term impact

- Empowerment and agency of local communities
- Enhanced territorial socio-economic dynamics
- Increased food security and sovereignty
- Biodiversity protection and clean water
- Adaptation and mitigation to climate change

The world faces a **difficult period for agricultural production**, not only due to higher agri-input prices but also climate change, higher energy prices, local conflicts, and pandemics. However, it **presents an**

**opportunity for transitioning to agroecology and putting in place long-term solutions** that address not only agri-input issues but other major challenges such as biodiversity loss, climate change and poor diets.



### Case study - Scaling up agroecology with feebates: rice in Bhutan

Currently, Bhutan produces about 47 percent of its domestic rice consumption, relying on imports for the rest. Given rice's importance in the national diet, plus supply vulnerabilities exposed during the COVID-19 pandemic and war in Ukraine, the Government of Bhutan has prioritized improving self-sufficiency in rice, with a 60 percent target. Researchers from The Millennium Institute asked if it was possible to achieve 100 percent organic rice production while also improving self-sufficiency in Bhutan. There are two basic production modes for rice in Bhutan: organic as traditionally practised, often referred to as "organic-by-default"; and conventional rice production, which uses synthetic chemical inputs for fertilizer and crop protection. Widespread adoption of agroecology, a third option, could help achieve Bhutan's goals with rice of shifting to organic production and becoming self-sufficient, but costs and risks may prevent farmers from adopting agroecology. To identify and test policies aimed at achieving these goals, an integrated systems model was developed.

The model's objective was to understand how farmers might respond to policies aimed at incentivizing agroecology and improving rice self-sufficiency. Simulations conducted with the model show that a feebate programme that introduces a fee or tax on chemical inputs and creates incentives for farmers who adopt agroecological methods with reduced to no input use could be effective at upscaling the adoption of agroecological farming. This would be coupled with promotion and training in agroecology, certification, and long-term monitoring. Policymakers could consider introducing feebates - a blend of fee and rebate - for crops like rice that are currently partly produced with conventional chemical methods. Feebates offer a self-financing and non-regulatory way of influencing farmers' behaviour and appear more robust against uncertainties and variabilities they experience in agricultural production and costs. Feebates could be used in conjunction with other policies, such as encouraging consumer demand for organic or agroecological food products.

## 4 Changing narratives and mindsets for an agroecological transition

Participants highlighted that **changing narratives and mindsets about agroecology is necessary for activating a transition** to agroecology. For example, there is actually **no scarcity of agri-inputs**. Rather, agri-input prices are being pushed up by higher fossil energy prices. In fact, our atmosphere is composed of about 80 percent nitrogen. This is freely available and can be harnessed for producing legume crops, which are able to 'fix' nitrogen available in the atmosphere. Such crops have a high protein content and can contribute to a healthier diet that does not require additional industrial animal production. This shift in diet can produce simultaneous benefits for people and soil health while helping reduce greenhouse gas emissions and supporting climate change adaptation and mitigation.

Another common misconception that hinders agroecological transition is that yields from agroecological/organic production systems are significantly lower than from conventional farming. Participants in the dialogue made several evidence-based arguments against this narrative. Firstly, **yield differences are not as significant, and in some circumstances agroecology can actually yield more than conventional methods**. Secondly, and most importantly, **yields from agroecology are more stable and resilient against climate change and environmental variability** than

yields from conventional farming. Thirdly, when examining the true costs of agriculture – therefore also factoring in those related to human health and the environment – **agroecology is economically more viable than conventional farming**. This cost advantage is even greater when synthetic fertilizer prices are high.

**Equality and justice must also be placed at the centre of transition strategies**. Moving away from food system narratives that now dominate will require **challenging current power structures in agribusiness**. It will also involve building on and **ascribing more value to farmers' Indigenous Peoples' knowledge, and ensuring all stakeholders at the territory level have agency**. Social structures, cultural values and settings are potent forces that should be tapped in environmental management. Achieving a change in narratives requires paying attention to the concerns and constraints of different actors and their current level of dependency on conventional practices. There are several entrenched mindsets, practices and conditions – such as investment path dependency, export orientation in agricultural policies, compartmentalized or short-term thinking, “feed the world” narratives, methods for measuring success, and a concentration of power in agribusiness – that will be challenging to change. Doing so will require

a combination of **policies and incentives** that not only target food production and farmers but entail **investment in research and**

**capacity building** for all actors throughout agricultural value chains.



### Case study - Indigenous Peoples' communities in the Plurinational State of Bolivia champion agroecological transformation

The Chaco region in the Plurinational State of Bolivia is currently experiencing a food crisis due to deforestation and the expropriation of land from local communities. More land is being used for large-scale agriculture and animal production, with produce mostly exported to China. Between 2001 and 2019, imports of synthetic fertilizer increased from under 25 tonnes to 100 tonnes, while imports of pesticides grew from about 12 tonnes to 60 tonnes. These imports are mainly used for large-scale monoculture production of transgenic soya and maize.

Since 2018, the Government of Bolivia has been promoting self-sufficiency in input production and has partnered with two private companies to produce urea and potassium. This has led to a decrease in input prices. However, this agroextractivist approach to agriculture is having a detrimental impact on indigenous Guarani communities' ability to produce food for self-consumption and on their health. Indigenous Guarani communities have lost control over the use of inputs on their territory and local seeds have been contaminated. Food quality has decreased and communities

are experiencing increased allergies and symptoms of acute pesticide intoxication. Women are most impacted, working an average 15 hours per day to make up for lost production of food for self-consumption. This has led to the emergence of local, national and transnational social movements aimed at helping communities regain food sovereignty and resist dispossession from their land. For example, in Yateirenda, a Guarani community in the Chaco region, women have developed small gardens to produce food for self-consumption with traditional and agroecological methods, including crop rotation and the use of biofertilizers like Terra Preta. They are strengthening food production in schools, including through compost production with organic residues. They have also organized agroecological fairs to raise awareness about health, food sovereignty and the risk of losing native Bolivian maize seeds due to contamination by transgenic seeds. One highlight at these fairs has been the display of traditional foods made with corn, which demonstrates the connection between food traditions and the value of the territory where food is produced.

## Recommendations

Dialogue participants made a set of recommendations for tackling agricultural input scarcity through agroecology and upscaling existing success stories. Their recommendations also highlight vital co-benefits of employing agroecology for this purpose: reducing climate change, alleviating biodiversity loss, improving health and nutrition, and reducing the burden on governments' budgets from importing and subsidizing synthetic inputs. The recommendations are grouped together to align with focus areas of the Agroecology Coalition's five working groups:



### Research

- » **Conduct research studies using true cost accounting methods to compare the economics of conventional and low-input agroecological farms in the context of higher fertilizer prices.** Do this also at the country level, comparing the economic impact of further subsidizing fertilizers with that of supporting the transition to agroecology;
- » **Use transdisciplinary and participatory action research methods to develop and strengthen low-synthetic-input agroecological practices.** Also co-develop measurement, reporting and verification (MRV) frameworks to better understand results and track the comparative advantages of low-synthetic-input systems; and
- » **Strengthen the use of tools that assess food systems in a multidimensional way further.** In particular, seek a better understanding of links between the use of synthetic fertilizers and challenges around agricultural pests and diseases, and national food security and sovereignty.



### Communication and advocacy

- » **Increase awareness about the cost-effectiveness of agroecological systems, and thereby encourage farmers to take steps toward agroecological transition.** Communicate through policy briefs to provide evidence about the impacts of policies designed to reduce the use of various synthetic inputs;
- » **Contribute to a mindset shift, helping move away from a tendency to measure agricultural performance purely on yield per hectare.** Also communicate effectively about agroecological farming, explaining that yield is not necessarily reduced and that it generates multiple other advantages, including resilience to climate change, health benefits, premium prices, and reduced dependency on imported inputs; and
- » **Highlight agroecology's potential to help address multiple crises at the same time,**

including climate change, biodiversity loss, desertification, and worsening health and nutrition. Disseminate related success stories.



## Investments

- » **Encourage and upscale investment and business development in bio-based inputs at a territorial scale**, for example through tax incentives, friendly regulatory frameworks, public procurement of organic agri-inputs and co-innovation platforms. Entrepreneurs have an opportunity to expand the supply of organic inputs, such as manures, biofertilizers and leguminous crop seeds, as synthetic inputs become more expensive and less competitive. Entrepreneurs can also link farmers to territorial markets for agroecological products; and
- » **Ensure financial support is available during the transition phase, targeting it at collective organizations, such as cooperatives.** Consider extending the term of funding schemes for research and development projects that aim towards agroecological transition. In particular, support research and projects in areas where a reduction in labour burden is especially needed, such as compost making, and nutrient transport within and between farms. Ensure support for small-scale mechanization and simple equipment to facilitate on-farm organic input production, as seen in [L'atelier Paysan](#).



## Policies

- » **Redirect subsidies and other financial tools to support a move away from synthetic fertilizers.** For example, tax the use of synthetic fertilizers and use the revenue to support agroecological transition while lowering taxes on alternative inputs. This will allow governments to ease the burden on their budgets from expensive synthetic fertilizer subsidies and encourage local value generation;
- » **Align policies to support the transition to low-synthetic-input systems.** For example, create an adapted regulatory framework for on-farm production of bioinputs, ban toxic products in sensitive areas, and support collaboration for the sourcing of organic material, such as through organic waste collection at the municipal level. Repurpose subsidy programmes for synthetic fertilizers while also examining environmental targets and regulations associated with the use of synthetic fertilizers; and
- » **Formulate policies that support the development of knowledge centres, such as in existing universities, on low-synthetic-input practices.** Develop policies that raise awareness about low-input agroecological products. Revamp government-led extension services to promote low-input systems.



## Implementation

- » **Engage in peer-to-peer learning to develop agroecological systems that are adapted to local contexts**, and facilitate farmer-to-farmer exchanges, such as India's Andhra Pradesh Community Managed Natural Farming. Field demonstrations are particularly important for several reasons: they enable learning by doing for farmers, they offer farmers and researchers a physical space for co-construction, and they are powerful communication tools for both farmers and decision-makers;
- » **Prioritize quick-win solutions that demonstrate the effectiveness of alternatives to chemical fertilizer.** Examples could include soil fertility improvement practices like mulching, composting and intercropping with legumes; and
- » **Use increased fertilizer prices as an opportunity to explore and adopt alternative practices that do not depend on external inputs.** Optimize farm incomes by diversifying operations, reducing production costs and taking advantage of higher market prices for food.

## About the agroecology dialogue series:

The agroecology dialogue series is an initiative of FAO and the Biovision Foundation in support of the Coalition for food systems transformation through Agroecology (Agroecology Coalition). It consists of thematic dialogues that aim to identify entry points, opportunities, building blocks, innovative approaches and institutional frameworks that can support the upscale of agroecology. They ultimately aim to contribute to the emergence of a broader framework on multiple pathways for food system transformation that highlights concrete steps to promote agroecology at the national policy level and set priority areas for a food systems transformation. Between 60 and 90 participants contributed to each dialogue from various backgrounds (scientists, government representatives, civil society organization, intergovernmental organizations, private sector and others) and sectors. The agroecology dialogue series furthermore supports and feeds into the Agroecology Coalition that launched during the UN Food Systems Summit (UNFSS) 2021, with the ambition to advance adapted policies, strengthen research and development programmes and secure public and private investments to promote agroecology worldwide.

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