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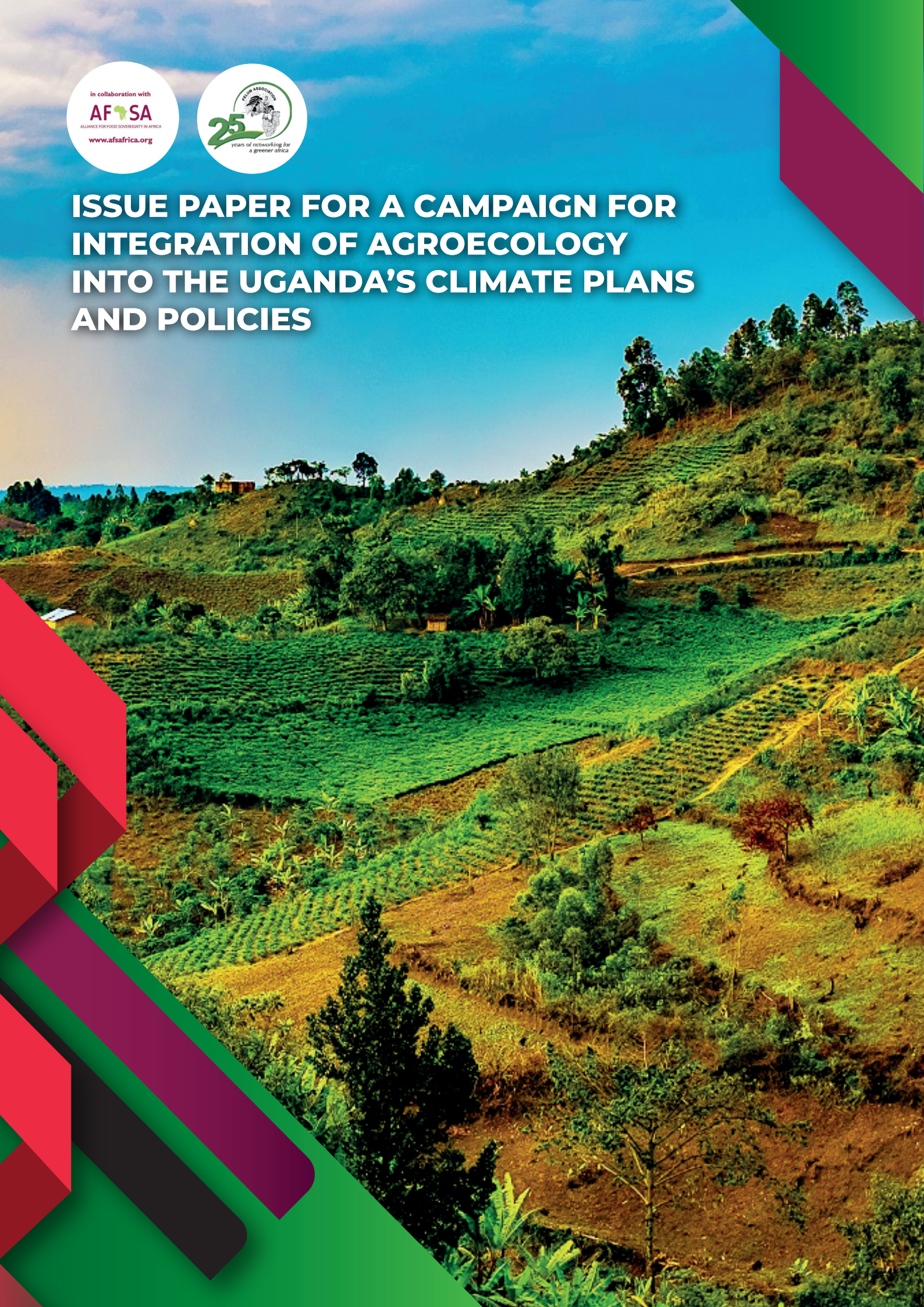
ISSUE PAPER FOR A CAMPAIGN FOR INTEGRATION OF AGROECOLOGY INTO THE UGANDA'S CLIMATE PLANS AND POLICIES



List of Acronyms

AFSA	Alliance for Food Sovereignty in Africa
CBD	Convention on Biological Diversity
CCD	Climate Change Department
CSA	Climate Smart Agriculture
FAO	Food and Agriculture Organization of the United Nations
GHG	Green House Gases
GMO	Genetically Modified Organism
INDC	Intended Nationally Determined Contribution
LTS	Long-Term low greenhouse gas emission Development Strategy
MWE	Ministry of Water and Environment
NAP	National Adaptation Plan
NAP-Ag	National Adaptation Plan for Agriculture
NCCP	National Climate Change Policy
NDC	Nationally Determined Contributions
NDP	National Development Plan
PELUM	Participatory Ecological Land Use Management
UNCCD	United Nations Convention to Combat Desertification
UBOS	Uganda Bureau of Statistics
NPA	National Planning Authority
GoU	Government of Uganda
UGGDS	Uganda Green Growth Development Strategy

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TABLE OF CONTENTS

1 INTRODUCTION

In the conundrum of increasing incidence and severity of climate change and variability, addressing the low adaptive capacities especially for the developing countries such as Uganda requires a number of responses to be taken into account to facilitate a climate resilient and low carbon development pathway aligned with the national and global goals. Uganda as a country contributes a very low amount of greenhouse emissions estimated at 1.39 tons of carbon dioxide equivalent, which is far below the global average of approximately 7.99 tons of carbon dioxide (MWE, 2016). Despite the low emissions, the country continues to suffer with negative impacts of the changing climate. Already, Uganda's Climate risk index score stands at 74.33 making it rank 69 out of 180 countries (Germanwatch, 2019), making it one of the most at risk of climate change.

"It is important to take note of "good" response measures which build a resilience as well as foster low emission development.

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Most parts of the country are experiencing unprecedently rising temperatures, prolonged droughts especially in the cattle corridor region, increasing flooding in the low land areas, landslides and mudslides in the mountainous areas of Mt. Elgon and Rwenzori regions, increasing malaria cases in the South western district of Kabale, increasingly low crop productivity that threatens the populations incomes, and food security for livelihoods and sustainable development, among others. However, districts like Gulu, Kitgum, Kotido and Kasese have registered modest decrease in annual rainfall in the past years (NPA, 2020). Climate change is a non-segregative phenomenon that affects various sectors in different ways with Agriculture, Water, Energy and infrastructure worst impacted. Yet, agriculture supports over68% of the Ugandan population, who directly or indirectly dependent on it (UBOS, 2019).

Noting that the country has devised a number of climate response policies, plans, strategies and interventions in context of climate change adaptation and mitigation, the impacts of climate change are still severe and projected to grow over the years. Also, some of the laid options could negatively impact on the climate for instance intensive use of fertilizer in Agriculture fields releases GHG emissions into the atmosphere. Therefore, it is important to take note of "good" response measures which build a resilience as well as foster low emission development. In context of agricultural climate response measures, agroecology, its elements and principles offer a window of hope for climate action especially for a nature-based country like Uganda. This Issue paper is intended to make a case for agroecology inclusion in the various existing and planned climate plans and policies for Uganda for example, the process to update the NDC and develop the LTS and the NAP among others.

2 PURPOSE OF THE ISSUE PAPER

This issue paper is intended to create an understanding on the importance of integrating agroecology into Uganda's existing and planned climate action plans, policies and strategies for facilitating a climate resilient and low carbon development pathway. The issue paper also highlights the opportunities, existing gaps and barriers limiting the inclusion of agroecology in Uganda's climate policies and plans while highlighting the entry points for integration of agroecology for climate action.

3 MAIN OBJECTIVE

The aim of the paper is to build a foundation for the campaign for the integration of agroecology into national climate policies and plans so as to enhance climate resilience and reduce greenhouse gas emissions.

3.1 Specific objectives

- Create an understanding of existing climate change related policies, plans, strategies, regulations and frameworks at national level.
- Identify critical entry points for mainstreaming agroecology within the identified policy frameworks.
- Propose approaches to guide the integration of agroecology in the national legislation and frameworks identified.

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4 METHODS AND LIMITATIONS

This issue paper was limited and based on the rapid desk reviews and analyses of existing climate policies and plans for Uganda including the National Climate Change Policy (NCCP), the NDCs, and the NAP-Agriculture. Content and gap analysis of Uganda's NCCP, the NDCs, NAP-Ag to identify the gaps for policy recommendations and decision direction to integrate agroecology in these climate policies and plans was done. Review of the NDP III Programme Implementation Plans for the Natural Resources, Environment, Climate Change, Land and Water Management Programme was also conducted to assess the opportunities for inclusion of agroecology for climate mitigation and adaptation.

To justify the integration of agroecology, a review of the existing relevant literature on agroecology was further explored for documentation. A few case studies of agroecology practices elsewhere have also been documented for lesson learning.

A few case studies of agroecology practices elsewhere have also been documented for lesson learning.

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5 OVERVIEW OF AGROECOLOGY

5.1 Understanding agroecology

A diverse spectrum of researchers have defined agroecology in various ways whilst building consensus on three dimensions of a transdisciplinary science, a set of practices and a social movement (Wezel et al., 2009; Wezel and Silva, 2017; Agroecology Europe, 2017).

Agroecology is defined as an application of ecological sciences to the study, design and management of agriculture (Altieri, 1995). According to IPCC (2019), agroecology is one of the options of sustainable land management (SLM), including agroforestry and its core fundamentals such as integrated land-use systems that maintain species diversity, agrobiodiversity, the improvement of ecological processes and delivery of ecosystem service, the strengthening of local communities and recognition of the role and value of indigenous and local knowledge.

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This definition expands the frontiers of agroecology by incorporating the issue of supporting diverse forms of smallholder food production and family farming, farmers and rural communities

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Gliesman (2018) defines agroecology as an integration of research, education, action and change that brings sustainability to all parts of the food system be ecological, economic and social. This definition highlights the role of agroecological practices related to improvement of agroecosystems by harnessing natural processes, creating beneficial biological interactions and synergies among their components.

Nyeleni (2015) looks at agroecology through the civil, political and social movement lens as a solution to current challenges such as climate change and malnutrition, contrasting with the so-called “industrial” model and transforming it to build locally relevant food systems that strengthen the economic viability of rural areas based on short marketing chains, and fair and safe food production. This definition expands the frontiers of agroecology by incorporating the issue of supporting diverse forms of smallholder food production and family farming, farmers and rural communities, food sovereignty, local knowledge, social justice, local identity and culture, and indigenous rights for seeds and breeds (Altieri and Toledo, 2011).

For this paper, agroecology may be referred to as an integrated approach that effectively provides for interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system. This paper therefore takes on the FAO definition of agroecology.

6 RATIONALE FOR AGROECOLOGY INCLUSION FOR CLIMATE ACTION

According to FAO (2018), current agricultural systems are characterized with high-external input, resource-intensive contributing to deforestation, water scarcity, biodiversity loss, soil depletion and high levels of greenhouse gas emissions. In such a way to avert the residual impact of agricultural development, agroecology emerges as one approach which seeks to transform agriculture systems, addressing the root causes of problems and providing holistic and long-term solutions based on co-creation of knowledge sharing and innovation, including the combination of local, traditional, indigenous and practical knowledge with multi-disciplinary science (Darmaun et al., 2020).

There is growing literature on agroecology as an effective answer to climate change and its contribution to achieving national climate policies like the NDCs, and NAPs and also the global goals like the Paris Agreement, UNCCD and CBD. Many successful agroecological approaches are today being scaled up through the support of public policies, networks of knowledge exchange, and by strengthening rural institutions.

> **It's argued that CSA pays too much attention to new methods and technology and not enough to traditional practices and underlying mechanisms that have enabled existing systems to resist or recover from usual climate stressors**

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According to the research study conducted by Biovision and FAO it was indicated that many aspects defined as necessary for climate resilience set as a goal by the signatories of the Climate Convention themselves are almost identical to the various aspects of agroecology (Leippert et al., 2020). Agroecology is ever more present in our food and farming system and thus farmers need to take up agroecological practices as governments, civil societies and other social movements take on development and integration of policies on agroecology for climate action and sustainable development.

Agroecology practices also help cut off the would-be emissions linked to industrial agriculture like fossil fuel use, fertilizer applications, deforestation for monoculture (Nyeleni, 2014). A number of agricultural related interventions have been reported to increase the burden of Greenhouse gases (GHGs) in the atmosphere, and polluting water resources thus the need to be traded on carefully. For instance, some scholars argue that CSA practices like minimum tillage practices combined with herbicides rather than mechanical methods to remove weeds may be considered climate-smart, but not agroecological (Andrieu & Kebede, 2020).

It's argued that CSA pays too much attention to new methods and technology and not enough to traditional practices and underlying mechanisms that have enabled existing systems to resist or recover from usual climate stressors and also there is no much consideration of social resilience of communities that manage agroecosystems (Andrieu & Kebede, 2020). For the country to greatly contribute to the global call of keeping the global temperature rise below 1.50C by mid-century (IPCC, 2018), practices like agroecology need to be integrated in the country climate policies and plans.

Already, existing agricultural practices, for example, terraces complimented by other soil conservation methods and practices including tree planting, and use of agriculture residues in South Western Uganda address specific effects of changing climate such as reduction of soil erosion caused by more intensive rainfall. Tree planting on mountain landscape of Elgon region reduces the incidences of landslides and water surface run-off.

Agroecological approaches provide dual purpose of adaptation and mitigation based on proven ability to simultaneously address specific climate hazards, enhance the resilience of farming systems to climate change and to improve the flow of a range of ecosystem services. In addition to provision of mitigation co-benefits, mainly related to increased soil organic carbon and help improve soil fertility (Darmaun et al., 2020).

7 THE EXISTING CLIMATE CHANGE RELATED POLICIES, PLANS, STRATEGIES AT NATIONAL LEVEL

7.1 Overview of the existing climate plans for Uganda

Uganda as a country has taken great strides in response to the climate change by putting in place a number of policies, plans and strategies that support climate action in the country's priority thematic areas. The country has a National Climate Change Policy of 2015, the Nationally Appropriate Mitigation Actions (NAMAs), Nationally Determined Contributions (NDC) as a commitment to the Paris Agreement, the NDC Partnership Plan, NDC Implementation plan, the Uganda Green Growth Development Strategy, the National Adaptation Plan for the Agriculture sector, a climate supportive NDP III amongst others have been instituted to support climate action.

The country is now in the process of updating her NDCs, developing the Long Term Strategy for low Greenhouse Gas emissions, and the National Adaptation Plan; all of which will outline various strategies, measures and actions geared towards facilitating Uganda's climate resilience and low carbon development pathway.

"For Fisheries and aquaculture sector adaptation measures put across include promoting climate change resilient fishing practices; for forestry; encourage agro-forestry to enable rural households to meet their subsistence and energy needs.

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Overview of the National Climate Change Policy of 2015

The National Climate Change Policy and its costed implemented strategy is intended to guide all climate change activities and interventions in the country. The goal is to ensure a harmonized and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development in Uganda. One of the guiding policy principles is promoting community-based and bottom-up approaches to adaptation. The Government implements the policy by taking actions to advance common policy priorities, adaptation and mitigation measures, and actions that enable monitoring, detection, attribution and prediction. Both adaptation and mitigation measures were pointed out for different sectors.

For instance for agriculture sector some of the adaptation measures include promoting highly adaptive and productive crop varieties and hybrids in drought-prone, flood prone and rain-fed crop farming systems; promoting highly adaptive and productive livestock breeds; promoting conservation agriculture and ecologically compatible cropping systems to increase resilience to the impacts of climate change; promote sustainable

management of rangelands and pastures through integrated rangeland management to avoid land degradation and deforestation (GoU, 2015; MWE, 2018) were put forward. For Fisheries and aquaculture sector adaptation measures put across include promoting climate change resilient fishing practices; for forestry; encourage agro-forestry to enable rural households to meet their subsistence and energy needs. For mitigation measures a need to conserve the existing forests and implement REDD+ programmes is emphasized (GoU, 2015; MWE, 2018). A number of other sectors and measures are outlined.

Overview of the Uganda Green Growth Strategy 2017/18 – 2030/31

The Uganda Green Growth Development Strategy (UGGDS) aims to achieve an inclusive low emissions economic growth process that emphasizes effective and efficient use of natural, human and physical capital while ensuring that natural assets continue to provide for present and future generations (NPA, 2017). The UGGDS focuses on five core catalytic investment areas of agriculture, natural capital management, green cities, transport and energy.

The envisaged outcomes of the UGGDS implementation are: income and livelihoods enhancement; decent green jobs; climate change adaptation and mitigation; sustainable environment and natural resources management; food and nutrition security; resource use efficiency; and social inclusiveness and economic transformation at the sub-national and national levels (NPA, 2017). It was developed to catalyze low emissions development and climate change mitigation by 2030 with reduction of 71.2 MtCO2e in areas of agriculture, natural capital management, planned green cities, sustainable transport, energy for green growth and cross-cutting actions.

Overview of the Nationally Determined Contributions (NDCs)

Uganda made commitments and ascended to the Paris Agreement in pursuit to contribute to reductions in the rising global temperatures and keep the global temperature rise way below 20C. The year 2015 saw Uganda communicate her Intended Nationally Determined Contributions (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC) that was later adopted as her Nationally Determined Contributions (NDC) on ratification of the Paris Agreement in 2016 (MWE, 2016). Uganda's NDCs prioritise adaptation and aim to reduce vulnerabilities in the prioritised sectors of agriculture and livestock, forestry, infrastructure, water, energy, health and risk management (MWE, 2016). Different priority adaptation actions for the prioritized sectors are pointed out.

The country also targets to reduce her national Greenhouse Gases (GHG) emissions by 22% in 2030 compared to the Business as Usual by implementing mitigation measures and policies in the forestry, energy and wetlands priority sectors. Mitigation action in the agriculture sector is spelt out as additional ambition with a focus on Climate Smart Agriculture; Livestock breeding research and manure management practices (MWE, 2016). The country's NDC aims to build climate resilience and promote a low carbon development path.

Overview of the National Adaptation Plan for Agriculture sector (NAP-Ag)

On realization of how serious climate change is impacting on the Agriculture sector as a whole, the Ministry of Agriculture, Animal Industry and Fisheries developed and launched the country's NAP-Ag in 2018. The Agriculture Sector in Uganda is experiencing climate change effects manifested through, frequent, intense and prolonged dry spells, droughts, floods, increase in temperature and higher incidence of pests and diseases (MAAIF, 2018). These effects are predicted to increase in magnitude and intensity, thus, further constraining agricultural production and people's livelihoods.

The agriculture sector is a priority sector for the achievement of Uganda's development targets as highlighted in the National Vision 2040 and the global commitments in Agenda 2030 Sustainable Development Goals and the National Determined Contributions (NDCs) to the Paris Agreement. The NAP-Ag details the specific medium- and long-term adaptation plans for the Agriculture sector that could help to build climate resilience.

The overall goal of the NAP-Ag is to increase resilience of the Agricultural Sector to the impacts of climate change, through coordinated interventions that enhance sustainable agriculture, food and nutritional security, livelihood improvement and sustainable development. The NAP-Ag consolidates different climate actions, including CSA, into a systematic and integrated suite of adaptation responses. The adaptation actions presented in the NAP-Ag target to boost production and productivity for all agriculture sub-sectors; crop, livestock, fisheries, forestry, land and natural resources (MAAIF, 2018).

Overview of Uganda's National Development Plan (NDPIII) 2020/2021-2024/2025

The third National Development Plan (NDPIII) goal is "Increased household incomes and improved quality of life" and is to be achieved under the overall theme of "Sustainable Industrialization for inclusive growth, employment and sustainable wealth creation" (NPA, 2020). This is in line with Uganda Vision 2040, EAC Vision 2050, Africa Agenda 2063 and the Sustainable Development Goals (SDGs). Uganda's development pathway, described in the National Development Plans III recognizes the potential for climatic changes to undo substantive developments made already and has prioritized climate adaptation and mitigation actions going forward. Climate change indicators have been integrated in the development plans to ensure climate actions within the various programmes (NPA, 2020). The Plan has identified eighteen (18) programs that have been designed to deliver the required results under it.

These programmes incorporate the country's commitments to regional and international development frameworks and cross cutting issues. Agriculture and climate concerns are

highly incorporated in the Natural resources, Climate Change, Environment, Land and Water Management Programme that aims to stop and reverse the degradation of Water Resources, Environment, Natural Resources as well as the effects of Climate Change on economic growth and livelihood security. Expected results relate to increasing land area covered under forests and wetlands, increasing compliance of water permit holders with permit conditions and enhancing the accuracy of meteorological information (NPA, 2020).

7.2 State of agroecology inclusion in the different existing climate plans and policies

Nationally Determined Contributions (NDCs):

Basing on content analysis of the current NDCs, under the agriculture sector's a number of adaptation actions were prioritised but not not specific to agroecology. However, some isolated agroecological approaches are mentioned mainly related to the core agroecological principles of efficiency, recycling, diversity and co-creating of knowledge. These are often associated with alternative conceptions of production systems such as conservation agriculture and climate-smart agriculture.

The linked adaptation actions include expanding climate smart agriculture (CSA) however, there are no details of the specific CSA interventions. Bearing in mind that some CSA interventions end up contributing to GHG emissions if not properly assessed. Expanding rangeland management is also vital for enhancing climate action and qualifies as an agroecology practice since it offers significant potential for biodiversity-pastoral synergies. It should be noted that biodiversity contributes to a range of production, socio-economic, nutrition and environmental benefits. Rangeland management enhances the provisioning of ecosystem services, including pollination and soil health which support agricultural production.

National Adaptation Plan for Agriculture sector (NAP-Ag):

The adaptation actions presented in the NAP-Ag target to boost production and productivity for all agriculture sub-sectors; crop, livestock, fisheries, forestry, land and natural resources. It is pointed out that the future of Agriculture will highly depend on a climate resilient agriculture sector, with an effective planning and integrated implementation approach. Practices and elements of agroecology say organic farming are not well captured in the country's NAP-Ag. Nevertheless, for the crop sub-sector, the NAP-Ag contains some agroecology practices including promoting and encouraging conservation agriculture and ecologically compatible cropping systems such as agroforestry and sustainable land management to increase resilience to the impacts of climate change; and support community-based adaptation strategies through expanded and climate smart extension services. For climate resilient livestock sub sector, the proposed agroecology

related actions in the NAP-Ag include: promote sustainable management of rangelands and pastures through integrated rangeland management; Promotion of integrated Crop-livestock production systems; and Identify, develop and disseminate indigenous best practices in range land management and drought coping mechanisms (MAAIF, 2018).

For fisheries sub sector, the proposed agroecology related actions include promotion of zonation and protection of fish breeding grounds along shoreline. For Forestry, Land and Natural Resources Management sector, agroecology related actions include: promote appropriate agroforestry like on -farm indigenous trees and clean energy technologies to improve livelihoods and the environment (MAAIF, 2018).

The Uganda Green Growth Development Strategy (UGGDS):

Green growth agronomic practices can go a long way in complementing existing sustainable land management practices to enhance soil fertility. The UGGDS is taking a green growth approach such as direct investments into ecosystem restoration to reduce deforestation and degradation are being encouraged and agroforestry investments have been identified as the entry point for forestry on private land. However, agroecology as a concept is not entrenched in the UGGDS.

The Nationally Climate Change Policy (NCCP):

One of the guiding policy principles of the NCCP is to promote community-based and bottom-up approaches to adaptation which is a good entry point for agroecology integration. For agriculture, adaptation measures such as promoting conservation agriculture and ecologically compatible cropping systems to increase resilience to the impacts climate change; Promoting sustainable management of rangelands and pastures through integrated rangeland management to avoid land degradation and deforestation are key to addressing climate action in an agroecological way.

Also, to enhance mitigation for the agriculture sector the policy outlines a need to promote conservation agriculture, ecologically compatible cropping systems and agricultural practices to increase GHG sinks; and promote the sustainable management of rangelands to reduce GHG emissions from soil and land degradation all of which are good agroecological practices documented in the NCCP that need to be banked on and scaled up.

The NDP III

The Climate Change, Natural Resources, Environment, land and Water Management Programme of the NDP III aims to stop and reverse the degradation of Water Resources, Environment, Natural Resources as well as the effects of Climate Change on economic growth and livelihood security. NDPIII prioritises interventions for climate action under the programme including Strengthening conservation, restoration of forests, wetlands and water catchments; Building capacity for climate change adaptation and mitigation including mainstream climate change resilience in programmes and budgets with clear budget lines and performance indicators (NPA, 2020). However, there is no specific agroecology elements, principles and practices being emphasized for climate action under the programme.

8 GAPS AND CHALLENGES OF AGROECOLOGY SCALE UP AND INCLUSION

> **The lack of a common understanding of the boundaries between the multiplicity of different concepts such as agroecology, Climate Smart Agriculture (CSA)**

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A number of agroecological practices have existed and still exist especially in rural Uganda where the population is still engaged in subsistence agriculture which is less input intensive and also applies local and indigenous knowledge to enhance agriculture productivity. However, a number of barriers limiting agroecology practice scale up and consideration as a climate action response within the country's climate policies and plans exist and these include:

Low government support for agroecology implementation policies. Agroecology is focused on reduced input use that is more looked at as keeping agriculture subsistence and not a high economic returns venture. Yet, there is growing interest in promoting commercialization of agriculture which is normally input intensive in terms of fertilizer application and mechanization that in the end greatly contribute to the amounts of GHG emissions released to the atmosphere.

There is much less investment in research on agroecological approaches compared to other innovative approaches resulting in significant knowledge gaps including on relative yields and performance of agroecological practices compared to other alternatives across contexts; how to link agroecology to public policy; the economic and social impacts of adopting agroecological approaches; the extent to which agroecological practices increase resilience in the face of climate change; and how to support transitions to agroecological food systems, including addressing risks that may prevent them. This reveals the need to address the research gap by investing resources in research on agroecological approaches.

In addition, there is less ongoing research and Knowledge dissemination on the social and governance dimensions of agroecology, which makes it difficult to be considered into the climate planning for the country.

Negative perceptions: Some society members perceive agroecology to be old school, difficult, labor intensive and less productive and only interested in maximum crop productivity for high incomes that is perceived to be realized in "Industrial" Agriculture practice. Also, there are existing doubts regarding scientific evidence for agroecology. This highlights the importance of discussing technological details and the need for more efforts to change people's mindset for transition to agroecology.

The lack of a common understanding of the boundaries between the multiplicity of different concepts such as agroecology, Climate Smart Agriculture (CSA), conservation agriculture, Ecosystem Based Adaptation (EBA), and Natural Climate Solutions (NCS) limits the integration of agroecological practices in plans. This creates the need to unpack the agroecological practices and elements to inform their integration in plans and policies. In this paper we strictly used the agroecology concept as defined by FAO.

Capacity building gap: There is not much known on how agroecology could turn around the climate challenge foils for the country especially through climate resilience building and mitigation co-benefits that come with its practice. Technical guides development, workshops, trainings need to be held often to promote agroecology practice amongst policy makers, relevant technocrats, extension workers and smallholder farmers at the grassroot level.

Even the few pockets of agroecology spelt out in the country's NAP Ag and NDCs, it is not clear how these target actions will be achieved. Therefore, there is need to specify and detail the different agroecological elements and principles within the current NDCs and NAP Ag to monitor and track the progress of their implementation by responsible ministries including MAAIF, and MWE/CCD.

9 CASE STUDIES, GOOD PRACTICES AND EXPERIENCES OF AGROECOLOGY PRACTICE & INCLUSION ELSEWHERE

Even with low integration of agroecology in Uganda's climate response, there are examples of agroecology being adopted and practiced at some scale elsewhere. Some of these include; an IFAD-supported project using agroecology-based approach in Niger; Policy change in France to support agroecology; Ecosystem service and biodiversity for food security and nutrition as a blue growth initiative in Kenya; and the Machobane farming system in Lesotho.

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Box 1: IFAD-SUPPORTED PROJECT USING AN AGROECOLOGY-BASED APPROACH-NIGER

In Niger, an IFAD-supported project uses an agroecology-based approach to strengthen sustainability in family farming and improve access to markets. Project activities range from agroforestry to land and water management. Degraded lands are recovered through Assisted Natural Regeneration that allows water infiltration and increases soil carbon sequestration. The circulation of biomass and nutrients within the crop-livestock integrated system using manure and compost also improves soil fertility. Smallholders, especially women and young people, receive training in different agroecological practices, such as integrated pest management, agroforestry and animal health, using the Farmer Field Schools approach. Farmers are considered as more than just producers: their engagement in creating knowledge, innovations and adaptations, and their cultural and social values are intrinsically linked to the type of food they produce. Farmers are less dependent on seasonal external inputs and youth are more motivated to engage with these innovative approaches. Producers and consumers are more connected.

Source: https://www.ifad.org/en/web/latest/story/asset/41485825

Box 2: THE FRANCE CASE STUDY

Policy change in France to support Agroecology

At the end of 2012, just a few months after having been elected, the left-wing government announced its new national program involving the reorganisation of the whole agricultural sector toward more sustainable food production models. Through this program, entitled the 'The agroecology project in France', the French Ministry of Agriculture initiated the institutionalisation of agroecology.

The persistent trend of greening agricultural policy, pushed by the European Commission since the 1980s, had been facing ongoing criticisms from the main French farmers' trade unions. Therefore, the government seized and redefined, the concept of agroecology, to respond to professionals' criticisms regarding economic risks resulting from agro-environmental regulations. Decision-makers defended an 'agroecological transition' as a solution to conciliate contrasted demands, namely: societal concerns about environmental and sanitary consequences of intensive agriculture, the injunctions of the European Commission to implement public policies to improve the impact of farming practices on the environment, and the professionals' expectations of economic viability of their activities.

Source: Translating Agroecology into Policy (Raquel et al., 2018)

Box 3: ECOSYSTEM SERVICE AND BIODIVERSITY FOR FOOD SECURITY AND NUTRITION AS A BLUE GROWTH INITIATIVE IN KENYA

In response to the declining areas of mangroves in Kenya, FAO, as part of the Blue Growth Initiative, implemented a multi-faceted project with strong agroecological elements, including watershed management techniques to support improved ecosystem services at the same time as food, nutrition and livelihood security. After using different techniques to raise awareness of the importance of agrobiodiversity and environmental protection, the community was better able to sustainably manage mangrove forests, and make income-generating activities more environmentally responsible.

Through partnerships with various stakeholder groups, an estimated 268,122 seedlings were planted in 41 hectares of degraded mangrove forest areas, and three new mangrove nurseries were established in combination with aquaculture and bee-keeping activities. These activities to rehabilitate mangrove forests have benefits for both livelihood generation and ecosystem services. One significant result was increased biodiversity of fish fingerlings and others aquatic animals within the restored areas.

(Source: www.faostat.fao.org)

10 OPPORTUNITIES AND ENTRY POINTS FOR AGROECOLOGY INCLUSION

1. Exploring country climate response plans and strategies; LTS, NDC, NAP and climate change bill

Uganda is in the process of developing her Long-Term Strategy (LTS) for low GHG emissions as requested for in the Paris Agreement (Article 4.19). And this presents a good opportunity to ensure incorporation of agroecology approaches and practices and elaboration existing adaptation and mitigation actions with an agroecology lens.

The country is also in the process of engaging a number of stakeholders in the process of updating her NDCs and this presents an opportunity for campaigners of agroecology to use evidences to integrate agroecology practices into the NDCs.

The country is also in the process of developing her National Adaptation Plan (NAP). This presents a great opportunity during the NAP development process to have agroecology integrated as a medium and long term action for climate change adaptation for Uganda. It is important to note that the NAP will be prepared by the Ministry of Water and Environment under the Climate Change Department (MWE/CCD), while the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) has already prepared the Agriculture sector NAP. Here agroecology campaigners like PELUM need to engage the MWE/CCD and MAAIF to have agroecology integrated in the overall NAP.

The country's climate change bill has been tabled before the Ugandan Parliament for first hearing and now awaits the send hearing. There is room for amendments and consultations for the agroecology campaigners to convince agroecology inclusion before the bill becomes law.

"There is room for amendments and consultations for the agroecology campaigners to convince agroecology inclusion before the bill becomes law.

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2. Anchoring tested and applied agroecological practices in programme development plans of NDP III.

The proponents for agroecology may target the NDP III programme development plans across key programmes e.g. agro-industralization programme; Tourism development programme and Natural Resources, Environment, Climate Change, Land and Water Management programme being developed at both national and local levels and incorporate practices that have been documented to offer optimal interactions between plants, animals, humans and the environment whilst enhancing climate action.

3. Leveraging the budgeting framework for priority agroecology approaches

Each year, the Ministry of Finance issues a budget circular call for Ministries, Agencies and local governments to submit their budget proposals. Proponents for agroecology could target such times to demand for financing particular investments related to agroecology. For example, on-farm plant and animal breeding for crop and animal diversity. The Ministry of Agricultural Animal Industry and Fisheries and various local governments may be engaged to prioritise key approaches in their budgets for financing.

4. FAO's support for Agroecology:

FAO has come out strongly supporting agroecology and the available frameworks for instance the high level panel of experts report on agroecological approaches and other innovations, the voluntary guidelines on food systems and nutrition, the biodiversity mainstreaming platform, the FAO 's common vision for sustainable food and agriculture, Country programming frameworks and the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT). These could be banked on to convince the policy makers to integrate agroecology into the national climate policies and frameworks.

5. The growing country demand for healthy foods:

This could be banked on with scientific evidences to demonstrate that agroecology is a solution to the food security and climate change challenge to convince the policy makers for agroecology integration emphasis especially to the key stakeholders; the government of Uganda's Ministry of Agriculture Animal Industry and Fisheries (MAAIF).

6. The Plant Genetic and Food Agriculture Policy draft process:

This creates an opportunity for agroecology caimpners as stakeholders during consultations to present a convincing and scientific information for Uganda to integrate agroecology in the Plant Genetic and Food Agriculture Policy.

11 STEPS TO GUIDE THE INTEGRATION OF AGROECOLOGY IN THE NATIONAL LEGISLATION AND FRAMEWORKS.

11

While campaigning for agroecology inclusion in the different climate policies and plans, the suggested agroecological practices need to address one or more of the 10 FAO elements of agroecology (see annex 1). The 10 Elements can help the country to operationalise agroecology. The following are the basic steps one would consider to mainstream agroecology for climate action into the national legislation and plans.

Step 1: Conduct Climate Change Impact and Vulnerability Assessment

It is important to identify who are most affected and at risk, the existing responses and coping mechanisms, their locations and how the planned interventions can be targeted for efficient and effective outputs. To that effect, an impact and vulnerability assessment should be carried out to determine the extent to which populations in different geographical locations and social strata are exposed to climate change. The assessment should also include an evaluation of the baseline climate conditions, potential barriers and opportunities to adaptation and mitigation.

Step 2: Identify and analyze different agroecology related adaptation and mitigation Options

To address issues raised during the impact and vulnerability assessment, a range of policy options should be identified. The policy options should be mapped and assessed based on the 10 elements of agroecology developed by FAO i.e. (1) Diversity; (2) Synergies; (3) Efficiency; (4) Resilience; (5) Recycling; (6) Co-creation and sharing of knowledge; (7) Human and social values; (8) Culture and food traditions; (9) Responsible governance and (10) Circular and solidarity economy. Each option should be thoroughly analyzed to explore its contribution to a number of these elements in addition to climate response in context of adaptation and mitigation.

Step 3: Identify and cost the agroecology approaches that enhance climate action

Having analyzed a number of options, those priority options which score moderately and highly or meeting at least 4 out of 10 elements as defined by FAO should be selected and costed. Such options should not result into mal-adaptation, reversal or displacement of emissions.

Step 4: Design and Implementation plan

To guide operationalisation of the programmes and actions, an implementation plan for the prioritized options has to be designed. The implementation plan may also serves as a tool for allocating resources for institutions and local governments, for example, a climate smart livestock plan. The plan should include details of the key stakeholders, their roles and responsibilities and timelines for specific outputs. The Implementation plan needs to include the Strategic plan outlining actions and timelines of involved stakeholders; capacity building needs assessment and training plan; Budget covering expenditure needs; outreach plan; Sustainability plan; and Plan for monitoring the performance of agroecological adaptation measures.

Step 5: Monitor the Implementation Process

A continuous monitoring mechanism should be put in place, to keep the implemented agroecology practices for climate action relevant and focused.

Step 6: Evaluate the effectiveness and efficiency of the agroecology approach

The evaluations should be carried out as part of other existing evaluation systems within the relevant institutions such as assessment of existing sector plans. The evaluations should be done at both national and local community levels.

12 CONCLUSIONS

The pursuit for sustainable solutions is gaining increased importance as the world is tackling the climate change challenge. The severe impacts of climate change on sectors like agriculture and food security urgently calls for more sustainable and climate-resilient agriculture forms like agroecology. The existing scientific evidence on agroecology benefits, agroecology should be acknowledged as a powerful approach to transform agricultural production systems for a more sustainable and climate-resilient future. Investment in research on agroecological approaches must be stepped up, and transdisciplinary and participatory action research conducted to foster co-creation and dissemination of knowledge for climate action. The awareness campaigns on the importance of agroecological practices needs to be strengthened amongst all key stakeholders like MAAIF, MWE, MWE/CCD, CSOs and District local governments.

"The 10 Elements can help the country to operation-alise agro-ecology.

12

While campaigning for agroecology inclusion in the different climate policies and plans, the suggested agroecological practices need to address one or more of the 10 FAO elements of agroecology (see Annex 1) and designed to follow the agroecology principles (see Annex 2). The 10 Elements can help the country to operationalise agroecology. They are a guide for policymakers, practitioners and stakeholders in planning and developing an enabling environment for agroecological transitions. Stakeholders especially in Agriculture and environment arena must be engaged including MAAIF, MWE, CSOs in Agriculture and ENR engagements to push the agroecology agenda into policy formulations and implementation. Agroecology campaigners should target engagements in the upcoming country's NAP and LTS development processes; and the NDC updating process to have agroecology and its elements integrated for its contribution to climate action. There is a need to promote and rigorously campaign for inclusion of agroecological principles and elements in the development and implementation of the country's Nationally Determined Contributions (NDCs), and National Adaptation Plans (NAPs) and other related sectoral climate related plans and policies in order to tap into its immense climate adaptation and mitigation co-benefits. From the content analysis of the Uganda's climate policies and plans, it can be noted that agroecology has not been clearly defined and included. A number of climate policy actions have been prioritised but not specific to agroecology. Only in a few instances has agroecology and some of its elements as defined by FAO has been Included. Important to note is to take agroecology to the next level, a solid governance structure is essential. Laws, regulations, publicity awareness campaigns and fiscal incentives are all part of a framework that should cut across different sectors and integrate the whole value chain. Lastly, to allow agroecology to flourish, funds need to be mobilized to communities, organizations and government ministries to make transformation happen.

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ANNEX 1: FAO'S 10 ELEMENTS OF AGROECOLOGY (FAO, 2018)

Adopted from the IPES-Food Report 2018; IPES-Food, 2018.

Diversity

Highly diverse, agroecological production systems such as agroforestry, silvopastoral systems, crop–livestock–aquaculture integration and polycultures contribute to a range of production, socio-economic, nutrition and environmental benefits.

Agroecology depends on context-specific knowledge

Knowledge plays a central role in the process of developing and implementing agroecological innovations to address challenges across food systems. Through the co-creation process, agroecology blends the traditional, indigenous, practical and local knowledge of producers with global scientific knowledge

Synergies

Agroecological systems selectively combine the diverse components of farms and agricultural landscapes to build and enhance synergies.

Efficiency

Increased resource-use efficiency is an emergent property of agroecological systems. By optimising the use of natural resources such as soil, air, solar energy, water, agroecology uses fewer external resources, reducing costs and negative environmental impacts.

Recycling

By imitating natural ecosystems, agroecological practices support biological processes that drive the recycling of nutrients, biomass and water within production systems.

Resilience

Enhancing ecological and socio-economic resilience, agroecological systems have a greater capacity to recover from disasters such as drought, floods or hurricanes, and to resist pest and disease attack. Through diversification, producers reduce their vulnerability if a single crop or commodity fails. Reducing dependence on external inputs increases producers' autonomy and reduces their vulnerability to economic risk

Human and social values

Agroecology places a strong emphasis on human and social values, such as dignity, equity, inclusion and justice, all contributing to sustainable livelihoods. It puts the aspirations and needs of those who produce, distribute and consume food at the heart of food systems. Agroecology seeks to address inequalities by creating opportunities for women and youth.

Culture and food traditions

By supporting healthy, diversified and culturally appropriate diets, agroecology values local food heritage and culture, contributing to food security and nutrition while maintaining the health of ecosystems.

Responsible governance

Transparent, accountable and inclusive governance mechanisms at different scales are necessary to create an enabling environment that supports producers to transform their systems. Equitable access to land and natural resources is not only key to social justice, but also essential to providing incentives for long-term investments in sustainability.

Circular and solidarity economy

Agroecology seeks to reconnect producers and consumers through a circular and solidarity economy that prioritizes local markets and supports territorial development. Innovative markets that support agroecological production help respond to a growing demand from consumers for healthier diets.

ANNEX 2: PRINCIPLES OF AGROECOLOGY

Adopted from the HLPE Report, 2019

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