

Systemic Challenges, Systemic Responses

Innovating Adaptation to Climate Change through Agroecology

Methodological Notes

1 Methodology and evidence collection

This document summarises the process of collecting evidence for the drafting of the key messages.

The first key message presents some of the interlinkages between agriculture and climate change, and their implications for successful adaptation measures.

The second key message encompasses impact statements. These statements were formulated based on identified climate change adaptation needs, and the ability of agroecology to meet them. The identified adaptation needs are informed by specific vulnerabilities of both individual farming households and ecosystems.

Unlike the impact statements of key message 2, where the causal link between agroecological practices and climate change adaptation impacts can be established directly, the third key message presents statements that establish the link between approaches adhering to some or more agroecological principles, and adaptation impacts. We make the case that there is a plausible relationship between agroecology as a principled approach and climate change adaptation, although it is difficult to trace evidence of a direct causal link.

The fourth key message, and its sub-messages, address the issue of performance evaluation of agroecology against other forms of agriculture.

Lastly, the fifth key message presents some entry points for achieving transformative change at the food systems level.

The process of developing these key messages is rooted in recent studies and analyses, as well as in-depth discussions involving a broad range of agroecological, and climate change adaptation initiatives. The research findings summarised below further complement these discussions and findings of earlier work in relation to evidence on particular aspects of the contributions of agroecology for climate change adaptation.

Overview: evidence per message

Key Message 1: To be innovative, adaptation efforts must respond to the systemic challenges posed by climate change to our food systems.

Message 1.1: Uncertainty is the foremost defining characteristic of how climate change impacts on agriculture. Climate change multiplies existing risks in the food system and creates additional risks for rural livelihoods and for food security from local to global level.

IPCC (2019). Summary for Policymakers. P.R. Shukla et al. Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. In press.

Message 1.2: Climate change negatively impacts all four dimensions of food security (availability, access, utilisation, stability). It endangers the realisation of the human right to food, and contributes to the further marginalisation of vulnerable groups.

IPCC (2019). Summary for Policymakers. P.R. Shukla et al. Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. In press.

Message 1.3: Adaptation efforts need to be tailored to specific local contexts. This requires an understanding of, among other factors: climatic patterns; market dynamics; livelihood opportunities; culture; and prevailing gender, and power relations. All these factors shape a community's specific adaptation needs and opportunities.

Gómez-Baggethun, E. et al. (2013). Traditional Ecological Knowledge and Global Environmental Change: Research findings and policy implications. *Ecology and Society*, 18(4).

Bee B. et al. (2013). Gender, Development, and Rights-Based Approaches: Lessons for Climate Change Adaptation and Adaptive Social Protection. In M. Alston, K. Whittenbury (eds.), *Research, Action and Policy: Addressing the Gendered Impacts of Climate Change*. Dordrecht, NL: Springer.

Message 1.4: Successful adaptation to climate change requires blending technological innovations with social inclusion. Political empowerment, gender-responsive participation, and the creation of new economic opportunities – especially for those who are most vulnerable to climate change impacts – are all elements of climate change adaptation.

Key Message 2: Diverse agricultural systems are less vulnerable to extreme climatic events, climate variability, and cumulative agro-climatic changes.

Message 2.1: Agroecological practices – such as crop-livestock systems and agroforestry systems – help to enhance soil structure and fertility, improve water conservation, and promote biodiversity. They therefore make agricultural production more resilient to climate change impacts, such as droughts, erratic rainfall patterns, and rising temperatures.

Message 2.2: Diversified farming systems reduce the risk of crop failures and livestock losses in cases of extreme climatic events or pest outbreaks, while also supporting economic diversification as an effective risk-reducing strategy, especially for smallholder farmers.

Berkes, F., & Ross, H. (2013). Community Resilience: Toward an Integrated Approach. *Society & Natural Resources*, 26, 5-20.

Burnham, M., & Ma, Z. (2015). Linking smallholder farmer climate change adaptation decisions to development. *Climate and Development*, 8(4).

Scholle, J. (2015). Livret de Vulgarisation de Pratiques Agroécologiques et Agroforestières. Techniques Développées Dans Le Cadre Du Projet DEFIV-DAFOMA Dans Le Mayanda, Bas Congo, RDC (2010–2015).

Seo, S. N. (2010). Is an integrated farm more resilient against climate change? A micro-econometric analysis of portfolio diversification in African agriculture. *Food Policy*, 35.

Aune (2011). Agro-Sahel. Une Collection de Techniques et d'approches Pratiques Pour l'amélioration de l'agriculture Dans Le Sahel.

Pretty, J. et al. (2018). Global assessment of agricultural system redesign for sustainable intensification. *Nature Sustainability*, 1, 441-446.

Altieri, M. et al. (2012). Soil Fertility, biodiversity and pest management. *Biodiversity and Insect Pests: Key Issues for Sustainable Management*. Chichester, UK: John Wiley & Sons.

Message 2.2

Message 2.3: By promoting minimal external inputs, and the pursuit of supplementary, off-farm livelihoods, agroecological practices reduce farmers' economic vulnerability in case of harvest losses.

Rivers, A., et al., N. (2016). Conservation agriculture affects arthropod community composition in a rainfed maize-wheat system in central Mexico. *Applied Soil Ecology*, 100, 81–90.

Nicholls, C.I et al (2016). "Agroecology: Principles for the Conversion and Redesign of Farming Systems." *Journal of Ecosystem and Ecography*, 5.

Cook, S. M. et al. (2007). The use of push-pull strategies in integrated pest management. *Annu. Rev. Entomol.*, 52, 375-400.

Midega, C.A.O. et al. (2018). A climate-adapted push-pull system effectively controls fall armyworm, *Spodoptera frugiperda* (J E Smith), in maize in East Africa. *Crop Protection*, 105, 10–15.

Tumbo et al. (2010). "Economics of Climate Change for Agriculture Sector in Tanzania. Adaptation Options and Their Costs.

Wyckhuys, K.A.G. & O'Neil, R.J. (2010). Social and ecological facets of pest management in Honduran subsistence agriculture: implications for IPM extension and natural resource management. *Environment, Development and Sustainability*, 12(3), 297–311.

Bàrberi, P. et al. (2010). Functional biodiversity in the agricultural landscape: relationships between weeds and arthropod fauna: weed-arthropod interactions in the landscape. *Weed Research*, 50, 388–401.

Eriksen, S., Brown, K. & Kelly, P.M. (2005). The dynamics of vulnerability: locating coping strategies in Kenya and Tanzania. *Geographical Journal*, 171, 287–305.

D'Annolfo, R. et al. (2017). A review of social and economic performance of agroecology. *International Journal of Agricultural Sustainability*, 15 (6), 632-544.

Message 2.4: Agroecology contributes to healthier and more balanced diets, and helps households to save money that would otherwise be spent on purchasing food.

Message 2.5: Agroecology maintains and advances agrobiodiversity, and seed sovereignty, as essential elements of resilient, diverse, and healthy food systems. These include local farmer-led seed systems, free exchange of seeds, community seed banks, and participatory plant breeding.

Key Message 3: To strengthen the adaptive capacity of rural livelihoods, it is necessary to pair technological innovations, and improvements in agricultural practices, with investments in social capital, the co-creation of knowledge with farmers, new marketing networks, and the responsible governance of land and natural resources.

Message 3.1: To increase the local relevance, and effectiveness, of adaptation programmes, it is necessary to facilitate the co-creation of knowledge and the genuine participation of farmers, especially women. This should cover the entire spectrum of designing, implementing, and evaluating innovations for climate change adaptation (Hudson et al., 2017; FAO, 2018a; Renaud & Murti, 2013; Mapfumo et al., 2013; Bacon, 2010; Loconto et al., 2018).

Bachmann, L. et al. (2009). *Food Security and Farmer Empowerment: A Study of the Impacts of Farmer-led Sustainable Agriculture in the Philippines*. Carbern Ville, Philippines: Masipag.

Carletto, G. et al. (2015). Farm-level pathways to improved nutritional status. *The Journal of Development Studies*, 51(8), 945-57.

Ickowitz, A., Powell, B., Salim, M. A., & Sunderland, T. C. (2014). Dietary quality and tree cover in Africa. *Global Environmental Change*, 24, 287-294.

Helicke, N.A. (2015). Seed exchange networks and food system resilience in the United States. *J Environ Stud Sci*, 5, 636-649.

Shrestha, P. et al. (2013). *Community Seed Banks in Nepal: Past, Present, Future*. Proceedings of a National Workshop, 14-15 June 2012, Pokhara, Nepal. LI-BIRD/USC Canada Asia/Oxfam/The Development Fund/IFAD/Bioversity International.

Hudson, H. E. et al. (2017). Using radio and interactive ICTs to improve food security among smallholder farmers in Sub-Saharan Africa. *Telecommunications Policy*, 41 (7-8), 670-684.

FAO (2018a). *Agroecological Rice production in China: Restoring biological Interactions*.

Message 3.1

Message 3.2: To increase the local relevance, and effectiveness, of adaptation programmes, it is necessary to facilitate the co-creation of knowledge and the genuine participation of farmers, especially women. This should cover the entire spectrum of designing, implementing, and evaluating innovations for climate change adaptation (Hudson et al., 2017; FAO, 2018a; Renaud & Murti, 2013; Mapfumo et al., 2013; Bacon, 2010; Loconto et al., 2018).

Renaud, F. & R. Murti. (2013). *Ecosystems and disaster risk reduction in the context of the Great East Japan Earthquake and Tsunami—a scoping study*. UNU-EHS Publication Series No.10.

Mapfumo, P. et al. (2013). Participatory action research (PAR) as an entry point for supporting climate change adaptation by smallholder farmers in Africa. *Environmental Development*, 5, 6-22.

Bacon, C. M. (2010). Who decides what is fair in fair trade? The agri-environmental governance of standards, access, and price. *The journal of peasant studies*, 37(1), 111-147.

Loconto, A. et al. (2018). *Constructing markets for agroecology – an analysis of diverse options for marketing products from agroecology*. Rome: FAO/INRA.

Antwi-Agyei, P. et al. (2015). Impacts of land tenure arrangements on the adaptive capacity of marginalized groups: The case of Ghana's Ejura Sekyedumase and Bongo districts. *Land Use Policy*, 49, 203-212.

Robiglio, V. & M. Reyes. (2016). *Restoration through Formalization? Assessing the Potential of Peru's Agroforestry Concessions Scheme to Contribute to Restoration in Agricultural Frontiers in the Amazon Region*. *World Development Perspectives*, 3, 42-46.

Helicke, N.A. (2015). Seed exchange networks and food system resilience in the United States. *J Environ Stud Sci*, 5, 636-649.

Shrestha, P. et al. (2013). *Community Seed Banks in Nepal: Past, Present, Future*. Proceedings of a National Workshop, 14-15 June 2012, Pokhara, Nepal. LI-BIRD/USC Canada Asia/Oxfam/The Development Fund/IFAD/Bioversity International.

Message 3.3: Supporting the institutionalisation and strengthening of farmers' organisations and networks can enhance inclusive local governance, and promote links between consumers and producers.

Pretty, J. et al. (2020). Assessment of the growth in social groups for sustainable agriculture and land management. *Global Sustainability*, 3 (e23), 1-16.

Sperenza, C. (2013). Buffer capacity: capturing a dimension of resilience to climate change in African smallholder agriculture. *Regional Environmental Change*, 13.

Roco, L. et al. (2014). Farm level adaptation decisions to face climatic change and variability: Evidence from Central Chile. *Environmental Science & Policy*, 44, 86–96.

Coordination Sud (2013). Répondre aux défis du XXI^e siècle avec l'agro-écologie : pourquoi et comment? GRET/AVSF.

Loconto, A. et al. (2018). Constructing markets for agroecology – an analysis of diverse options for marketing products from agroecology. Rome: FAO/INRA.

Message 3.4: To increase resilience at the ecosystem level, there is a need to strengthen collective action by food-insecure farmers to promote the adoption of agroecological measures beyond plot level.

Chaskin, R. J. (2008). Resilience, Community, and Resilient Communities: Conditioning Contexts and Collective Action. *Child Care in Practice*, 14(1), 65–74.

Lyon, C., & Parkins, J. R. (2013). Toward a Social Theory of Resilience: Social Systems, Cultural Systems, and Collective Action in Transitioning Forest-Based Communities. *Rural Sociology*, 78(4).

Key Message 4: Integrated measurement approaches, such as true cost accounting, are necessary to capture all the factors that contribute to climate-resilient food systems.

Message 4.1: Measurement tools that focus on the productivity of specific agricultural systems, without examining their negative externalities, ultimately undermine the sustainability, and resilience, of food systems.

Gitz, V. et al. (2012). Green economy and efficiencies in agriculture, Presented at Planet Under Pressure, New knowledge towards Solutions, 26-29 March 2012 London.

Message 4.2: To compare different adaptation options, it is important to assess how well each response addresses the systemic nature of climate change challenges. This includes taking into account the various positive and negative externalities that are associated with each adaptation option.

Message 4.3: There are a number of established frameworks that can be used to make system-wide assessments of climate change adaptation approaches. Examples include TEEB Agriculture and Food, or the concept of an ecological footprint as suggested by the HLPE 14 report. Such analytical frameworks can be extended to assess and compare different response options for climate change adaptation.

Message 4.4: To respond to the magnitude of the challenge, financing adaptation needs to tap into a range of funding sources, from public to private. If externalities are not accounted for, private investments are based on incomplete information which potentially translate into higher investment risks. In order to use the leverage of capital market flows for climate change adaptation of food systems, information on investment options in food systems need to encompass negative and positive externalities. True cost accounting (TCA) analyses and describes these positive and negative externalities. It therefore allows for a holistic understanding of risks and profit under the conditions of a changing climate; and thereby to allocation efficiencies and enhanced financial stability (Unerman et al., 2018).

IPCC (2019). Summary for Policymakers. P.R. Shukla et al. *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. In press.

The Economics of Ecosystems and Biodiversity (TEEB) (2018). *Measuring what matters in agriculture and food systems: a synthesis of the results and recommendations of TEEB for Agriculture and Food's Scientific and Economic Foundations report*. Geneva: UN Environment.

HLPE (2019). *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition*. A report by the High Level Panel of Experts on Food Security and Nutrition and of the Committee on World Food Security, Rome.

Unerman, J. et al. (2018). Corporate reporting and accounting for externalities, *Accounting and Business Research*, 48:5, 497-522.

Key Message 5: Innovating adaptation to climate change calls for nothing less than transforming our food systems.

Message 5.1: To adopt systemic approaches to climate change adaptation for food security and rural livelihoods, the institutional and policy landscape for rural development in most countries needs to change.

World Bank (2008). *The Role of Local Institutions in Adaptation to Climate Change*.

Urwin, K., & Jordan, A. (2008). Does public policy support or undermine climate change adaptation? Exploring policy interplay across different scales of governance. *Global Environmental Change*, 18(1), 180–191.

Message 5.2: Funding for the food sector is dispersed across philanthropic, private, profit-oriented, and public sources. To achieve the transformation of entire food systems, it is important to not only ensure the alignment of these diverse funding streams, but also to avoid transferring most of the financing risk to the public sector.

Lundsgaarde, E. et al (2018). *Coordination Challenges in Climate Finance*. DIIS Working Paper, 2018/3.

Message 5.3: Adaptation efforts need to be tailored to specific local contexts. This requires an understanding of, among other factors: climatic patterns; market dynamics; livelihood opportunities; culture; and prevailing gender, and power relations. All these factors shape a community's specific adaptation needs and opportunities.

Bachmann, L. et al. (2009). *Food Security and Farmer Empowerment: A Study of the Impacts of Farmer-led Sustainable Agriculture in the Philippines*. Carbern Ville, Philippines: Masipag.

Coordination Sud (2013). *Répondre aux défis du XXIe siècle avec l'agro-écologie : pourquoi et comment?* GRET/AVSF.

Borsky, S., & Spata, M. (2017). The Impact of Fair Trade on Smallholders' Capacity to Adapt to Climate Change. *Sustainable Development*, 26(4), 379–398.

Roco, L. et al. (2014). Farm level adaptation decisions to face climatic change and variability: Evidence from Central Chile. *Environmental Science & Policy*, 44, 86–96.

Message 5.4: Research plays an important role in facilitating agricultural innovation, and overall transformation of the food system. It is therefore important to ensure that research agendas, and funding, place a stronger focus on systemic responses to enhance the adaptive capacity of smallholder farmers. The same applies to the design of the necessary enabling environment for climate-resilient agriculture at scale. Public research is critical in this type of cutting-edge research.

Biovision & IPES-Food (2020). *Money Flows: What is holding back investment in agroecological research for Africa?* Biovision Foundation for Ecological Development & International Panel of Experts on Sustainable Food Systems.

Gómez-Baggethun, E. et al. (2013). *Traditional Ecological*

Knowledge and Global Environmental Change: Research findings

and policy implications. *Ecology and Society*, 18(4).

Janif, S.Z. et al. (2016). Value of Traditional Oral Narratives in Building Climate-Change Resilience: Insights from Rural Communities in Fiji." *Ecology and Society*, 21, (2).

2 Review inputs from the participants

1. Review inputs on the overall text

NAME AND ORGANISATION

REVIEW INPUTS

Jeremy Ferguson, KfW

- Add a brief one pager abstract.
- A graphic / diagram that visualizes the 5 key messages and their interconnectedness (as an eye-catcher and synopsis).

Vincent Gitz, FTA

- There would be value in better highlighting in the introduction some of the pathways through which agriculture will be affected by climate change, for instance impacts on water availability and potential disruption of ecosystems in order to explain how agroecology can contribute to adaptation. See for instance: FAO, 2016. Climate change and food security: risks and responses. <http://www.fao.org/3/a-i5188e.pdf>
- It could also be **useful to highlight the need for synergies of adaptation with mitigation** and also with sustainable development more broadly. Agroecology features well for such objectives.

Martin Herren, Biovision

- From the webinar discussions and the evidence available, it is obvious that there is momentum and robust evidence about the adaptation potential of Agroecology. However, this needs to be used and brought now to the next level: scaling-up and -out. There is need to engage a critical mass of stakeholders and decision makers from the adaptation fora on local, national or international level. Evidence needs to be translated into target group specific and actionable recommendations. To provide for this, coordination, outreach and advocacy work is needed to a) inform those that are ignorant or skeptical, b) convene those that are ready to engage but don't know how and c) trigger action in a joint and coordinated approach with all stakeholders necessary. This could be formulated as key message or included in the conclusions.

- In the introduction section, **a short clarification could be made about the concept of adaptation in this paper** (e.g. compared to the concepts of resilience and vulnerability) to clarify on terminology. The same goes for the term Agroecology (e.g. refer to FAO elements).

- The focus on adaptation helps to narrow down the key messages, however from UNFCCC negotiations as well as from interaction with countries we have learned that mitigation co-benefits are of strong interest to stakeholders. **Mitigation co-benefits should be at least mentioned once in the paper to address this demand (see below).**

- The key messages are formulated in a logic and concise manner. In some cases, the document might reach more impact when elaborating not only on the “what” but also on the “how”, as shown well in the Key Message 2. This could be done through more specification or **providing at least one existing good practice example to make the messages more tangible**. This holds particularly true for the cultural, social, knowledge sharing and governance dimensions throughout the document, but specifically for Key Messages 1.5 and 5.3.

German CSO

- AE helps to mitigate greenhouse gas emissions, while also addressing many environmental problems, such as accelerated **biodiversity loss, soil destruction and water scarcity** that severely undermine the adaptive capacity of farmers and food systems. **The introduction should reference the latest global assessment reports of the intergovernmental scientific bodies IPCC and IPBES**, which unanimously stressed the urgency for a transformational shift towards regenerative food and land-use systems in order to prevent exceeding dangerous tipping points.

- The central role of people's decisions and rights within the concept of AE strongly resonates with a human rights-based approach to FSN. The 14th HLPE report on AE stressed the importance of the **human rights framework** and of **people's agency** as the basis for ensuring equitable and resilient food systems and even proposed to add “agency” as a fifth pillar of FSN, next to ‘availability’, ‘access’, ‘utilization’ and ‘stability’.

- AE addresses the interconnected challenges of gender inequality and climate resilience and the multiple discrimination that women farmers face when engaging with adaptation processes. As equal control over productive resources, equal access to education and extension services and equal participation in households, organisations and policy processes are inseparably linked to agroecology, it not only reduces women's vulnerability against climate impacts but also strengthens their potential as agents of change and resilience building.
- AE and agroecological innovations are knowledge-intensive instead of capital-intensive and work with local resources, which are available on-farm or in the local food system, and therefore do not lead to high costs and external dependencies. This means, that these practices can be easily adopted, especially by poor and marginalized groups, who are the ones most affected by climate change.
- The participatory and knowledge-based approach of AE strengthens farmers' and communities' ability to better understand and act on climate impacts, and for institutions to deliver strategies locally.
- AE also takes into account the consumption of food, so climate change adaptation through agroecology would also mean to change towards more regional and diversified diets with a reduced carbon footprint.
- AE contributes directly to multiple SDGs and therefore offers an integrated approach to implement the Agenda 2030 [eradication of poverty (1) and hunger (2), ensuring quality education (4), achieving gender equality (5), increasing water-use efficiency (6), promoting decent jobs (8), ensuring sustainable consumption and production (12), building climate resilience (13), securing sustainable use of marine resources (14) halting the loss of biodiversity and achieving a land degradation neutral world (15)].
- I think it is important to emphasize the practical aspects of agroecology, at the same time as the principled approach. Too often, agroecology is seen as primarily rhetoric. This may be a place to add: "Agroecology, through its clearly identified elements, offers practical and concrete measures that have been applied and proven their worth around the world."

Barbara Gemmill-Herren, Consultant

Charito Medina, MASIPAG

- It is not sufficiently stressed that power imbalances, reinforced by climate challenges, are key to vulnerability, and by building social capital and reinforcing elements of equity (human and social values, responsible governance).
- In the introduction, add "Agroecology, through its clearly identified elements, offers practical and concrete measures that have been applied and proven their worth around the world."
- Add the idea that practices and principles mutually support each other.
- In the introduction, I suggest that you include whose definition of agroecology this exercise have used because there are many groups advocating and practicing agroecology and carrying with them different slant or emphasis. FAO, CIDSE, and La Via Campesina have their own slant and strengths. How is this exercise of key messaging in relation to agroecology as science, practice and movement? If you have chosen to use the FAO definition, at least a key message should be formulated for each of the 10 agroecology principles, based of course on experiences in the ground that you extracted from literature and from the experiences shared during the virtual consultation series.
- I have a serious concern on the title "... Adaptation of Rural Livelihood..." which was elaborated in Key Message 1, Key Message 3 and Key Message 4. My take is that Rural Livelihood do not adapt to climate change. Rather, it is the farmers who adapt to climate change, and this should be the essence throughout the paper. In fact, rural livelihood is also a tool of farmers for adaptation to climate change. "Adaptation of rural livelihood" appears to me as incorrectly formulated.
- **Agroecology is location and context specific.** For example, agroecology practices may differ between tropical and temperate environments. Successful agroecology might also be different between subsistence farmers and market-based farmers. Thus, Agroecology should avoid promoting a one-size-fits-all approach.

Philip Seufert, FIAN International

- FIAN considers that the document should refer explicitly to the **Human Right to Food and Nutrition**. The current text refers only to food security, however, we believe that it is crucial to emphasize that food has been recognized as a human right in a number of international, regional and national frameworks. States, intergovernmental institutions as well as other actors should be guided by their human rights obligations when defining the pathways to address climate change.
- We recommend that the document underlines that **different groups of the world's population are impacted differently by climate change**. The text should specifically mention that small-scale food producers and rural communities who produce the majority of the food consumed in the world are particularly affected. It should also highlight gendered impacts of climate change, as well as acknowledge other marginalized and discriminated groups.
- The document should be **more explicit about the interconnected challenges posed by climate change as well as biodiversity loss**. In its 2019 Global Assessment Report on Biodiversity and Ecosystem Services, for instance, the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) has identified climate change as one of the main drivers of biodiversity loss. At the same time, the destruction of ecosystems is a key driver of global warming. As such, the document should put more emphasis on the importance of the restoration and sustainable management of ecosystems – including agricultural systems – as a key strategy to address climate change.

Judith Hitchman, Urgenci

- Add in intro: To date over 54 States have framework legislation on Social Solidarity Economy, one of the 10 Elements of Agroecology as designated by FAO.

Maryline Darmaun, IRD

- Regarding the framing of the key messages: In light of the CGA publication (Sinclair et al. 2019) <https://cdn.gca.org/assets/2019-09/TheContributionsOfAgroecologicalApproaches.pdf> => I would frame the setting of the key messages more around a mirroring of PRINCIPLES OF AGROECOLOGY and PRINCIPLES OF ADAPTATION (see figure 2). In this way, we would enable the adaptation community to directly understand how AE can contribute to each of the “principles” of adaptation.

- I would also build on the figure we developed with Biovision and FAO in our publication which will be published in July this year. You can find the draft report here: <https://www.agroecology-pool.org/climatechangereport/>. See suggested Graphic in Resource Document.
- AE-based production systems are biodiverse, resilient, energetically efficient, socially just, and comprise the basis of an energy, productive and food sovereignty strategy (Altieri 1995; Gliessman 1998) (intro methodological document).

2. Review inputs on specific key messages

Key Message 1: To be innovative, adaptation efforts must respond to the systemic challenges posed by climate change to our food systems.

NAME AND ORGANISATION

REVIEW INPUTS

Gisele Illescas
Palma, Vida
Café AC

- Food systems must recognize the importance of soil, land management, seeds, local knowledge, culture and lifestyles (VIDA CAFÉ).

Vincent Gitz,
FTA

- In the background, in the elements of food systems, it would be good to explicitly mention the natural resources (land, water, biodiversity) on which depend agricultural production systems.
For instance:
- Add a 1st bullet “natural resources (land, water, soil, biodiversity).
 - Add in the subsequent bullet (former first), after “livestock”, the words “that manage these natural resources”.
- The wording of the 3rd bullet is problematic. Agricultural systems are not “natural systems” to which are added economic and social systems: they are economic and social systems managing natural resources. The 3rd bullet could be replaced by something like:
- “in agricultural systems biophysical relations are compounded by economic and social drivers”. They are part of broader economic and social systems that transform”, rest unchanged.
 - In message 1.4, it could be useful to recall the four dimensions of food security and nutrition: availability, access, utilization and stability.

German CSO

- Message 1.4: Climate change will negatively impact all four dimensions of food security, endanger the human right to food and increase the discrimination of marginalized groups.
- Message 1.5: Successful adaptation blends technological innovations with social organization for political empowerment, gender-responsive community participation and the creation of new economic opportunities, in particular for those who are most vulnerable to climate change impacts. Focusing on one element of adaptation alone will not yield the desired results.
- Message 1.6: Adaptation efforts will most likely be specific to a unique local context with natural, climate and market patterns, livelihood opportunities, culture, power dynamics and gender relations that can all shape a community's specific adaptation needs and opportunities.

Barbara Gemmill-Herren, Consultant

- In Key Message 1, I feel there is insufficient emphasis on building the capability of local communities to experiment, evaluate and scale up innovations through farmer-to-farmer research, sharing of experiences between farmers, researchers and extension.
- I would not overemphasize TEEB AgriFood- it is central to key message 4, and that is good. But it is not necessarily well known to the GCA, and it comes from the environment sector, therefore suspect (in some eyes) – not from agriculture.
- Suggest the following rephrasing on the 4 dimensions of food systems: "Climate change affects all of the above-mentioned elements of the food system. Following the IPCC, the sum of climate change impacts further threatens food security in many regions of this world, in all its dimensions (availability, access, utilization, stability)."
- On additional considerations: **This conveys the impression that extension services are the key to adaptation.** But I think the message should be more of: "Food insecure rural producers are most in need of coping strategies, and often do not have access knowledge sharing mechanisms such as extension services and farmer-to-farmer platforms. Technological innovations need to be paired with social innovations to make adaptation responses successful." Or you could say, "farmer innovation platforms" – the GCA would approve more....

Maryline Darmaun, IRD

- I would reformulate message 1. Not very clear as such.
- Message 1.2: would replace "influenced" by "impacted" in order to nuance this sentence. The impact of agriculture on CC highly depends on its form.

Charito Medina, MASIPAG

- Elevate message 1.5 as main message.

Jutta Werner, ZUG

- Add: **successful adaptation blends technological innovation, the use of potential of natural ecosystems, political empowerment etc.**

Philip Seufert, FIAN International

- As stated in the overarching comments, FIAN considers that a reference to the human right to food and nutrition should be included into this message. The realization of the right to food as well as human rights more broadly needs to be paramount in all strategies that aim at "adapting rural livelihoods". A key component of this is the agency of the concerned people and communities, meaning that adaptation must not be imposed from above.
- This message should refer to differentiated impacts of climate change regarding social status, gender, ethnicity etc. These elements are part of the complexity described in the document. As stated before, the document should underline that marginalized and vulnerable groups are particularly affected by climate change.
- Message 1.1: add that climate change increases the risks of impairments of the human right to food and nutrition. The text should further not be limited to "world food security" but also take into account the local level.
- Message 1.2: It should be stressed that agroecology is a strategy that has the potential to transform agriculture into a solution to climate change.
- Message 1.4: add reference to the core content of the human right to food and nutrition.
- Additional considerations: The text should not give the impression that climate change does mainly entail higher average temperatures, but should be more differentiated regarding the effects of global warming, such as increased frequency of extreme events, irregular rainfall patterns, droughts, floods etc.

Martin Herren, Bio-
vision

- Additional considerations: extension services are important for many farming communities, but agroecology contributes to increased resilience specifically because it promotes local solutions, which are within the reach of local actors and thus reduce dependencies.

- Message 1.5: It could be added: "...neither will focusing on adaptation alone, mitigation co-benefits and low-emission pathways need to be considered as well."

Judith Hitchman,
Urgenci

- Add in background: It is essential to bear in mind that a major systemic contributory factor to climate change is the fossil fuel-based industrial agricultural system. Other systemic causes are that the industrial food system is based on a growth model that extracts maximum profits for shareholders rather than optimizing agrobiodiversity, soil and human health, decent work or collective creation of wealth. This is not compatible with agroecology. The 10 Element of Agroecology emphasize this through the need for Circular and Solidarity economy. Only by including economic, social and environmental justice can whole system change occur. The current Covid-19 crisis has clearly demonstrated at global level the resilience of local solidarity partnerships between producers and consumers for agroecology. Community Supported Agriculture has been authorized to continue production and distribution as a safe option for all during the crisis throughout the world, and short agroecological supply chains have seen a huge surge in demand globally.

- Add for message 1.2: There is therefore a great need for systemic change and shift from fossil fuel-based industrial agriculture and intensive animal farming to agroecological sustainable territorial food systems based on agrobiodiversity and to short food chains involving collective governance and social solidarity economy.

Key Message 2: Diverse agricultural systems are less vulnerable to extreme climatic events, climate variability, and cumulative agro-climatic changes.

NAME AND ORGANISATION

REVIEW INPUTS

Gisele Illescas Palma,
Vida Café AC

- Rural multi-activity, i.e. the various activities that rural household members undertake to sustain their livelihoods, must be recognized.

- Linkages between food systems and health: healthy soils, healthy workers (thanks to no chemical inputs) and healthy diets (clean from chemicals, diverse, fresh).

- Historical landscape approach and local food culture should be considered.

German CSO

- **Message 2.1:** Agroecological approaches, including mixed crop-livestock and agroforestry systems, make agricultural production more resilient to droughts, erratic rainfall patterns, and increasing temperatures by enhancing soil fertility and improving water conservation and biodiversity.

- **Message 2.2:** Diversified farming systems reduce the risk of crop failures and livestock losses in case of extreme climatic events or pest outbreaks while also supporting economic diversification and independence as an effective risk-reducing strategy, especially for smallholder farmers.

- **Message 2.3:** By reducing external farming inputs, agroecology cuts down upfront investments reducing farmers economic vulnerability in case of harvest loss.

- **Message 2.4:** Agroecology contributes to healthier and more balanced diets where fresh food products otherwise are unavailable and increases farmers' incomes since less food has to be bought on markets.

- **Message 2.5:** Agroecology maintains and advances agrobiodiversity and seed sovereignty as foundational elements of resilient, equitable, diverse and healthy food systems through local farmer-led seed systems, free exchange of seeds, community seed banks and participatory plant breeding.

Vincent Gitz, FTA

- In key message 2, add after “events” the word “variability”; add a coma after “changes”.
- In the background:
 - after “crops” add the words “(species and varieties)”.
 - Replace “at plot and household level” by “at plot, household, and landscape level”.
 - After “events” add “variability”.
 - After “systems”, add “improve the use of natural resources, reduce the vulnerability of the farming system to biophysical risks and”.

Barbara Gemmill-Herren, Consultant

- Would add at the end of message 2.1: taken as a whole, agroecological practices build the regenerative capacity of the natural resource base by nurturing soil health, enhancing recycling, promoting ecosystem services and stimulating interactions between different species.
- Would rephrase message 2.5: Agroecology can contribute to healthier and more balanced diets for both producers and consumers, both through encouraging production diversification and respect for cultural and food traditions.

Bruce Campbell, GCA

- It's a mixture of farm level production and some connection to income stability. But resilience to climate change is much broader than that (as agroecology recognises): dependent on household and landscape assets, social security etc etc. Thus if I am interested in whether households have resilience, it is not enough to have “production less vulnerable” and “stable farm incomes”. Low stable incomes will, for 100s of millions of farmers, keep them in poverty; and poverty is very connected to vulnerability to climate change. I think the message is not forward looking enough.

Jutta Werner, ZUG

- Miss the co-benefits of mitigation.
- Add references to agrobiodiversity.

Martin Herren, Biovision

- Add agro-biodiversity and soil-biodiversity as parts of diversified systems which are essential to ecosystem resilience (result of FAO-Biovision meta-review).

Charito Medina, MASIPAG

- Message 2.5: Agroecology contributes to healthier and more balanced diets coming from diverse nutrients from diverse food sources (crops and livestock).
- Concern on the term “fresh”, this could also be contextual.

Judith Hitchman, Urgenci

- Add in background: Nutritional value of peasants' seeds used to grow agroecological food is naturally higher. Biodiverse, essentially plant-based diets of agroecologically grown food have been proven to reduce NCDs, especially diabetes and cancer (Lancet and French studies).
- Add a message. Message 2.5.1: Agroecology using solidarity economy ensures access to healthy diets for many vulnerable groups in different countries while ensuring decent pay for farm workers and improved income for producers. Small local processing as well as grouped local public procurement for school meals are essential parts of the agroecological food system logic that supports social, economic and environmental change.

Philip Seufert, FIAN International

- The document rightly highlights high levels of diversity as a main element of agroecology. However, it should also mention intra-crop variety (i.e. diversity of varieties of a same crop) in addition to the variety of crops. In addition to diversity, the text could also highlight complexity as a component of agroecology.
- The text mentions some specific agroecological practices (such as agroforestry and mixed crop-livestock systems), but leaves out others, which are important. It would be good to mention that agroecology comprises specific ecosystem management practices, such as enhancing soil fertility. The document should also specifically refer to the importance of agrological seed management within peasant seed systems.
- Message 2.3: this message could be re-formulated in a positive way, e.g. by emphasizing the increased resilience achieved through increased agency by farming communities.
- Additional considerations: the document rightly emphasizes that the scaling up of agroecology requires interventions that go beyond the farm/field/plot level.

However, it should be emphasized that effective and human rights-based upscaling requires putting small-scale food producers' communities center stage. Scaling up should not be done through top-down approaches.

Abram Bicksler,
FAO

- AE can also increase niche creation and value addition in addition to or as in form of market diversification.
- See FAO TAPE tool to assess AE performances in a holistic manner.

Key Message 3: Systemic adaptation responses to climate change require an enabling environment that strengthens the adaptive capacity of rural livelihoods at and beyond field level. The principles and elements of agroecology offer entry points to that end.

NAME AND ORGANISATION

REVIEW INPUTS

Gisele Illescas Palma,
Vida Café AC

- Importance of women in food production, seeds preservation, and family feeding must be recognized.
- Gender gap in terms of access to land must be reduced.
- Youth inclusion should be integrated in transition strategies.

Abram Bicksler, FAO

- This enabling environment should also be supported by policy makers. Short value chains, institutional procurement, subsidies are examples of how government policies can enhance AE.

Vincent Gitz, VTA

- In key message 3.1:
 - replace “to climate change adaptation” by “for climateadaptation”.
 - After “adaptation”, add “builds adaptive capacity and”.
- In key message 3.2, replace “creates positive incentives” by “is essential”.
- In 3.4 need to at least mention “ecosystem-based adaptation” and shortly explain how agroecology can contribute to it.

Barbara Gem-
mill-Herren, Con-
sultant

- Suggest rewriting the “additional considerations” part: The principles and elements of agroecology are fairly unique in embracing a number of social principles, such as governance and equity, as inseparable from biophysical aspects of sustainable food systems. The messages above are some expressions of these principles but are not exhaustive. Other measures to enhance the adaptive capacity of rural livelihoods could equally be related to these principles or might even be better expressions of them. The value of enabling environments, such as security of land tenure, is documented in a range of literature. This literature also includes approaches that are similar to agroecology but that do not necessarily self-identify as agroecology or pursue all principles of agroecology. We believe this approach is justified, as principles such as participation or responsible land and natural resource governance are also the focus of other rural development programs that have important lessons to share for their impacts on climate change adaptation (for further clarification of our approach, please see the annexed methodological note). When comparing agroecology to other alternative approaches it is important to consider that agroecology aims to strengthen these principles that – in turn – have already proven to be pivotal for successful climate change adaptation, but to do so in a holistic manner. In other words, and building on the above, it makes a difference whether measures to enhance the adaptive capacity of rural livelihoods are designed and implemented from a systemic perspective or from the point of view of adapting single elements of the food system.

Charito Medina,
MASIPAG

- Insist more on the fact that transformation should happen at all levels. Not only landscape.
- Elevate as key message: Farmers should have access and control to land, in addition to other production resources such as technology, seeds and associated knowledge.
- Message 3.3: Farmers organizations and network should be institutionalized to promote cooperation and local governance.

Bruce Campbell,
GCA

- Instead of referring to agro-ecology in the overall message, I would have stated the key principles. That will get better buy in to a message than to say “agro-ecology”. For example: “Key elements include co-creation of knowledge, connectivity, land and natural resource governance, and participation”.

Philip Seufert,
FIAN International

- FIAN considers it of utmost importance that this section underlines that the effective protection of rights of communities and people is a key element of promoting agroecology and tapping its full potential as a response to climate change. The current draft mentions knowledge, participation and natural resource governance, but it does not spell out that these are rights, which are enshrined in a number of international, regional and national legal frameworks. We also recommend to add a specific mentioning of the rights over seeds and the protection of traditional knowledge, practices and innovations, which are recognized by the CBD, the ITPGRFA as well as UNDRIP and UNDROP). This could be done in an additional message.
- This message should also specifically refer to the protection of women’s rights (see overarching comments and key message 1).
- Message 3.2: FIAN recommends to frame this message more broadly, in line with the Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests, and to include the effective protection of tenure systems, including customary and collective tenure. It should further emphasize the equitable distribution of land and other natural resources as a key component of agroecology and adaptation to climate change.

Judith Hitchman,
Urgenci

- Add a message: Message 3.3.1: Networks such as regional, national and international Community Supported Agriculture can play a major role in the creation of new and support existing producer-consumer relationships. Urgenci has created many tools, including on financial viability for farms. The network aspect is a key factor in the creation of social capital.
- Message 3.4: In most cases, land use, social inclusion and public procurement have been delegated to Local Government and participatory processes such as participatory budgeting can be helpful in approaching awareness raising on the importance of supporting agroecological food systems.

Jutta Werner, ZUG

- Add the gender aspect: importance of integrating women in decision making, give them access to information etc.
- Secure land tenure doesn’t necessarily mean property: collective property can be an entry-point.

German CSO

- Message 3.1: Co-creation of knowledge and the true participation of farmers, especially woman, in the design, implementation and evaluation of innovations to climate change adaptation increases local relevance, accessibility and dissemination.
- Message 3.2: Equal access to and control over productive resources such as land, water and seeds contributes to women’s economic empowerment and creates positive incentives for investments in ecosystem-based adaptation measures incl. at landscape level.
- Message 3.3: Cooperation between producers and households, promoting short distribution networks and local food systems (principles of proximity and connectivity) increases social, human, and financial capital in support of farmers’ buffer capacities to withstand adverse climatic impacts and reduces CO2 emissions.
- Message 3.4: Establish appropriate public policy frameworks like public procurement policies – for example to promote school feeding, community catering, develop local market infrastructure and support local and regional diversification.
- Message 3.5: Establish and strengthen food reserves as a safety net to be used during emergencies facilitating institutional purchases of local stocks of agricultural products held by producer organizations.

Key Message 4: Integrated measurement approaches, such as true cost accounting, are necessary to capture all the factors that contribute to climate-resilient food systems.

NAME AND ORGANISATION

REVIEW INPUTS

Jeremy Ferguson,
Kfw

- The term “multi-purpose-metrics” might appear somewhat abstract to the readers we are aiming at (although it is explained in the background- paragraph). My urgent proposition would anyhow be to integrate the term of **true (or full) cost accounting** (with which I very much associate TMG!) into key message 4, see my suggested amendments in green below:
- Suggestion: Key Message 4: Multi-purpose metrics and true cost accounting are needed to measure the capacity of rural livelihoods to adapt to climate change, of actions intended to increase this capacity or of the long-term sustainability of food systems.
- **Message 4.1:** Measuring the performance of agriculture in terms of the productivity of specific agricultural production systems only, and not measuring the negative externalities (due to which certain production systems only remain profitable), has led to the current situation in which agriculture is often undermining the basis of its very own resilience.
- **Message 4.2:** Response options to climate change must be assessed against the systemic nature of the challenges posed by climate change and take into account the positive and negative externalities between an adaptation option and other parts of the system.
- **Message 4.3:** There are established frameworks available to value the diverse impacts of systemic approaches to climate change adaptation, such as The Economics of Ecosystems and Biodiversity (TEEB) Agriculture and Food. Its use can be extended to assess and compare different response options available to adapt to climate change.

Barbara Gem-
mill-Herren, Con-
sultant

- Additional considerations: Successful climate change adaptation for food security and rural livelihoods means sustainably enhancing the productivity of the whole food system. The application of systemic valuation frameworks can build on long-standing experiences in implementing these approaches at business level and at the level of the whole economy.
- Additional considerations: add “True cost accounting does not mean, “higher food prices” – it means placing greater value on building regenerative and resilient food systems. It encompasses such measures as investment and greater employment in green economies for agriculture and food.”

Vincent Gitz, FTA

- Section 4 would deserve to be strengthened. It currently does not refer to metrics of adaptation and mixes different types of metrics, on results and on means. The paragraph needs to be clarified. It should clearly mention indicators of adaptation, currently a major area of work in UNFCCC as part of the Koronivia Joint Work of SBI and SBSTA on agriculture (KJWA) (see <https://unfccc.int/event/methods-and-approaches-for-assessing-adaptation-adaptation-co-benefits-and-resilience>).
- The critic of productivity as a metric is too schematic, particularly in the context of climate change. Yield can be an efficient metric of result, particularly if it is not looked only in level but also in stability. Better metrics of success can be income and its stability. Moreover, productivity can be looked from very different perspectives that allow in fact a range of metrics, many of which are of considerable interest for adaptation.
- There are examples of such a diversity of objectives that can be measured by productivity related indicators with the water foot print.

Charito Medina,
MASIPAG

- Multi-purpose metrics - vague and subject to interpretation and biases, please specify the metrics - they should be based on principles of sustainability, equity and practice of agroecology as adaptation to climate change.

- | | |
|---------------------------------------|--|
| German CSO | <ul style="list-style-type: none"> ■ Develop sub-key message about co-creation of knowledge/participatory approaches leading to farmer empowerment. ■ Message 4.1: Rephrase to: The fixation to productivity in the dominant practice of modern agricultural system undermined resilience. ■ Add the question of assessment: how should it be carried? ■ Message 4.3: There are established frameworks available to value the diverse impacts of systemic approaches to climate change adaptation, such as TEEB Agriculture and Food or the concept of an ecological footprint as suggested by the HLPE 14 report. Its use can be extended to assess and compare different response options available to adapt to climate change. ■ Message 4.4.: Collect gender disaggregated data on land ownership, access to water resources, seeds, extension services and markets, on the accessibility of drinking water and on the level of participation at household, community and policy level. |
| Philip Seufert,
FIAN International | <ul style="list-style-type: none"> ■ FIAN considers that this section should highlight the importance of participatory processes to measure, assess and monitor agroecology's contribution to addressing climate change. This should include participatory processes to develop appropriate indicators. ■ We recommend that this section emphasizes more strongly the interlinkages between adaptability and diversity/complexity. As said above, diversity and complexity are key elements of agroecology and should therefore be given due attention in the development of indicators and metrics (inter and intra crop variety). |
| Abram Bicksler, FAO | <ul style="list-style-type: none"> ■ Add : Multi metrics and multi dimensional. |

Key Message 5: Successful systemic adaptation for food security and rural livelihoods needs transformed food systems.

NAME AND ORGANISATION

REVIEW INPUTS

- | | |
|---------------------------------------|---|
| Bruce Campbell, GCA | <ul style="list-style-type: none"> ■ Message 5 is very confusing. The overall message is fine, but its sub-text and sub-messages are very confusing. And it really overlaps a lot with message 3 – enabling environment is crucial. This overall message is supposed to about transformation, but the text under it is all about enabling environment. And the sub-messages are about scaling up, which is not necessarily transformation. I don't understand this one. |
| Vincent Gitz, FTA | <ul style="list-style-type: none"> ■ More attention should be given to value chains and to the role they can play in facilitating or hindering diversification for instance both to provide inputs and to commercialize a diverse production. |
| Barbara Gemmill-Herren,
Consultant | <ul style="list-style-type: none"> ■ Background: cash crops are not only intended for export (see pro maize policies in Africa). ■ Message 5.2: Given the range of factors involved in making up scaling a success, up-scaling is a process, not a singular act. It often depends upon multiple and diverse actors and initiatives intersecting to create momentum for change. |
| Charito Medina, MASI-PAG | <ul style="list-style-type: none"> ■ We propose “up scaling and mainstreaming”. ■ Approaches mentioned are too technological, no mention of farmers initiatives and role in climate change adaptation. Change “explored” to recognize, institutionalize, mainstream. |
| Philip Seufert, FIAN International | <ul style="list-style-type: none"> ■ FIAN fully supports the need for a transformation of food systems towards agroecology and agrees that this requires broader transformation of policies and funding structures. We suggest that this section could also point to the urgent need to stop and disincentivize harmful practices, which drive global warming. Scaling up agroecology will not work, nor produce the expected results if destructive, GHG- producing production models continue. |

- This section should point out to the important contribution of a reorientation of public research will play in supporting food systems transition.
- Message 5.2: FIAN recommends that the text makes clear that there are important differences between different actors. Special attention needs to be given to small-scale food producers as rights holders, ensuring their agency.
- Message 5.3: FIAN agrees that scaling up agroecology and transforming food systems will require policy and institutional changes at different levels. However, we would like to point out the importance of the process under which such revisions will take place. The document should highlight the need to effective participation of small-scale food producers and their organizations.
- Additional considerations: as stated above, FIAN recommends to distinguish the role of different actors, in order to ensure equitable and human rights- compliant outcomes. Treating different actors at the same level will lead to perpetuating existing power imbalances and inequalities.
- Additional considerations: FIAN recommends to take out the specific reference to nature-based solutions. This concept is being promoted by some actors, but is not an agreed concept. It further is a broad term that can comprise a range of approaches, which would have to be carefully assessed regarding their contribution to climate change adaptation and human rights impact.
- Add in background: This concept is therefore better replaced by that of scaling out and networking that therefore relies on the interconnection of many small initiatives. Agroecology is fundamentally anchored in small-scale agrobiodiverse farms. Therefore the interconnectedness at territorial, national and international level is essential. The joint involvement of producers' consumers' and government actors at all levels is an essential aspect of scaling out.
- Replace "scaling up" by "scaling out".

Juditch Hitchman,
Urgenci

German CSO

- Message 5.3: For up-scaling of systemic approaches to climate change adaptation for food security and rural livelihoods to happen, an ecosystem approach has to be followed and the institutional and policy landscape for rural development in most countries needs to change. The status quo will not get us there.
- Message 5.4.: All up-scaling efforts should follow a human rights based approach and be preceded by an inclusive consultation process. Marginalized groups and communities should be at the centre of any initiative.
- Message 5.4: Up-scaling agroecology can only be achieved along with gender equality. It involves women's freedom from violence, their equal control over productive resources, equal access to education and agroecological advice, and equal say in households, organizations and political processes.
- Message: 5.5: Sustainable up-scaling needs an inter-generational approach while ensuring that also young people have a say in the development, implementation and monitoring of activities.

3. Review inputs mentioning aspects missing or not covered

NAME AND ORGANISATION

MISSING ELEMENTS

Vincent Gitz, FTA

- There would also be value in recognizing that climate change, because it introduces multiples changes in the way systems function, challenges the traditional knowledge about them, calling for good monitoring systems to detect and observe changes (not only in the climate but in the ecosystems) as well as means to transfer knowledge, including traditional knowledge, in space, along with the modifications of climatic conditions. This reinforces the need for efficient collaboration between research and traditional knowledge.

- More explicit reference to some of the mechanisms and discussions in the climate change community, in particular, at the national level the preparation and implementation of the National Adaptation Plans (NAPs) and, in the UNFCCC, the on going discussions under the KJWA (see <https://unfccc.int/resource/docs/2016/sbsta/eng/inf06.pdf>).

Martin Herren, Biovision

Suggestions for additional key messages:

- While robust evidence on the adaptation potential of AE is available, there is still substantial need for more Agroecology related research. Country specific research and context specific agroecological solutions are usually required by national decision makers before they can meaningfully engage in the topic. Therefore also investment in AE research needs to be scaled up (key message).
- Investments in socio-economically viable (business) innovations that build on Agroecology principles will be key to overcome upfront barriers and transaction costs and thus to actually scale-up the approach. If helpful, please also find annexed a table with complementing aspects of socio-economic co-benefits for adaptation (and mitigation) from AE.

Aspects not covered yet:

- While the document underlines that the landscape level (rather than plot level) is key, there is less emphasis on the important AE element of synergies (use and foster existing synergies among e.g. resources, technologies (e.g. energy- water-soil nexus), or among social, technological and policy dimensions). This could be underscored more in the text.

Barbara Gemmill-Herren, Consultant

- Among the key messages what seems missing is the statement that agroecological practices serve to protect the regenerative capacity of the natural resource base. While it is entirely correct to focus on the social elements, the capacity to keep agroecosystems healthy and stable is also important. It is touched on to some extent in message 2.1, but I suggest wording to convey more the ecological value of a holistic approach.

- I suggest that Key Message 4 might be the place to bring in investment and economic/employment development in green economies for food and agriculture.

- Key Message 5 does not mention transformative change...to me this would be more compelling than "successful upscaling". But perhaps this is a deliberate choice, I did not try to suggest changes.

Charito Medina, MASIPAG

Additional points to consider:

- Include key message on agrobiodiversity conservation and utilization as important foundation and inextricably linked to climate change adaptation. Analysis of situation do not capture the root cause of climate change. It is difficult to propose long lasting solutions to climate change if we do not recognize the root causes of climate change, in the first place.
- Adaptation is only up to a certain level, beyond the threshold, there is no amount of adaptation possible. Status quo is preventing farmers adaption of agroecological practices. Farmers adaptation of agroecology must be recognized and supported through appropriate government policy, research and funding.
- Indigenous knowledge/Local knowledge should be recognized, supported and promoted as adaptation to climate change because they had been validated pragmatically and found to be effective in specific conditions.
- There is a need to enhance investment on research, technology, and practice of agroecology as adaptation to climate change.

Methodological Notes October 2020

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