Agriculture and conservation

Key Takeaways and Priority Recommendations for Stakeholders

LIVING NATURE IN A GLOBALISED WORLD
IUCN Flagship Report no.2

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IUCN Flagship Report - Agriculture and Conservation: Key Takeaways

The IUCN Flagship Report "Agriculture and Conservation" presents comprehensive and wide ranging recommendations for navigating what the IUCN Director General Dr. Grethel Aguilar describes as "this paradox of threat and dependence" between agriculture and biodiversity.

Those with a particular specialism or focus will want to identify the specific actions which are most applicable to their field of work. To aid this endeavour, this briefing document sets out key takeaways and priority messages for the key stakeholder groups identified in Table 6.1 on page 101 and 102 of the report.

Reconcile agriculture and conservation

Insight

Sustainability of agriculture requires reconciling conflicts with living nature, and strategically protecting and restoring it without undermining food security, economic, or climate goals.

Actions

We must recognise sustainability of agriculture as a critical need for living nature, to safeguard ecosystems and species which cannot persist with agriculture, and harness opportunities to protect and restore nature and climate strategically. Shifting to sustainable agricultural systems could reduce the current global extinction threat by 45%. Places and species that cannot persist alongside agriculture must be protected, while Nature-based Solutions offer significant biodiversity gains.

No easy wins or one-size-fits-all

Insight

Successful solutions will take systems approaches and vary by location, scale, and production system. Few one-size-fits-all blanket prescriptions will reconcile agricultural production with biodiversity conservation.

Actions

Custom-built systems solutions are needed. No form of agriculture is inherently sustainable or unsustainable: the production system is crucial. Maintaining ecosystem services is not only crucial for society as a whole, it is also vitally important for agriculture. Sustainably managing nature at the landscape scale is key to agroecosystems, mainstreaming nature in production systems in some areas and increasing production in some areas to spare nature in others.

Manage trade-offs

Insight

Transitioning towards sustainable agriculture involves recognising and managing ecological, economic, environmental, and social trade-offs.

Actions

Trade-offs exist at all geographic scales and across society. Transitioning policies are needed and conservation must be included in strategic plans across different government agencies. Economic sectors and scaleable metrics, indicators and monitoring frameworks must be harnessed to identify what works. Finance will be needed to ease the transition for farmers.

Align agriculture, economy and nature-related policies

Insight

Aligning agricultural and economic policies with conservation of living nature offers key opportunities to advance sustainability.

Actions

Money matters. Agricultural support that harms biodiversity must be reformed, and the full benefits and costs of agricultural production must be accounted for. Trade agreements must also build in the cost of sustainable production to shield from harmful international effects. One-third of species extinction risk comes from international trade. Sustainability benefits tend to be long term whilst the costs of sustainability are felt in the short term. Assessing the full cost of agricultural production and making agricultural support nature positive is essential for the future.

Food policy matters

Insight

Reforming food policy can greatly advance conservation.

Actions

The balance between local food systems and imports is central to food security. Incentivising dietary change towards reduced meat consumption, while respecting local food culture, can have multiple positive outcomes. Reducing food loss and waste – from farm to fork – is a policy that all would support. Diet is highly culturally-specific but food change on health and sustainability grounds is feasible. Localised production that builds on local biodiversity, has many advantages for a specific country and taking a holistic, global view will determine whether the right choices are being made.

Priority for uptake of key messages across stakeholder groups

The IUCN Flagship Report "Agriculture and Conservation" not only presents the 5 key takeaways above but also 15 key messages underneath them, listed below.

Clearly, different actors operating at different spatial scales have different roles to play in operationalising these key messages. Some of this variation is across scales, with the possible and necessary roles of local actors often quite different from those of national or regional institutions, and these in turn different to those of international and global ones. Much variation is also evident in terms of implications for different sectors of society, for example between Indigenous Peoples and local communities, non-governmental conservation organisations, farmers' and extension organisations, agribusiness, retail companies, financial services, local and national governments, and international organisations and agreements.

Table 1 highlights those key messages of greatest importance for each of these different actors, and each of the 15 key messages is mapped through their icons to the stakeholders they are most relevant to.

Key:

- Local and national governments
- Farmers' and extension organisations
- Indigenous Peoples & local communities
- Conservation non-governmental organisations
- Agribusiness
- Retail companies
- Finance
- International organisations and agreements

Key messages

1. Sustainability of agriculture requires reconciling conflicts with living nature, and strategically protecting and restoring it without undermining food security, economic, or climate goals.

1a: Recognise sustainability of agriculture as a critical need for living nature. More than 45% of the global need and opportunity to reduce species extinction risk rests with how agriculture is implemented (Figure 2.8), and it is similarly important for the future of biodiversity at the levels of genetic diversity and ecosystems. Thus, nearly half of the delivery of Goal A of the Kunming-Montreal Global Biodiversity Framework will be determined by the degree to which food for humanity can be produced in ways consistent with safeguarding nature. As such, transition towards sustainability of agriculture offers a huge opportunity for living nature.

1b: Safeguard places and species which cannot persist with agriculture. While co-existence of agriculture and living nature serves as a general objective, there are also places and species which cannot persist with agriculture. Thus, it is essential that local conservation effort be selective, for example, in focusing strategically on safeguarding those places and species which cannot persist with agriculture (Section 2.3, Figure 2.13).

1c: Harness opportunities to protect and restore nature and climate strategically without undermining food security or economic output. Considerable gains in conservation and restoration of biodiversity can be achieved across the globe, with commensurate co-benefits for climate change mitigation, without undermining food security

or economic output, including through Nature-based Solutions (Chapter 4, Box 6, Box 8).

2. Few one-size-fits-all blanket prescriptions will reconcile agricultural production with biodiversity conservation; rather, successful solutions will take systems approaches and vary by location, scale, and production system.

2a: Avoid blanket prescriptions. The importance of spatial flexibility in reconciling agricultural production with biodiversity conservation (Section 2.3) means that one-size-fits-all policies, such as targets for the percentage of land to be covered by protected areas or restoration, can drive net negative outcomes for nature. The same is true for agricultural practices including sustainable intensification (Section 5.1.4) and organic production (Section 5.1.5) that may not be advantageous overall despite local biodiversity gains. Similarly, no agricultural products are inherently sustainable or unsustainable: the production system in which they are embedded is a crucial consideration (Box 12). Nuanced policies to safeguard irreplaceable sites (Section 5.3.2) while enabling financial flows to ensure that the benefits of conservation are shared between as well as within countries (Section 5.1.3) are much more likely to deliver global goals.

2b: Maintain ecosystem services for agriculture. Nature supports many dimensions of local agricultural production (Section 3.2), so retaining, restoring and sustainably managing nature at the landscape scale is vitally important to agroecosystem functionality. The socio-economic value of maintaining the natural state of climate, soil, water, pollination, and pest control services that agriculture needs is typically cheaper and more effective than the provision of such benefits by people (Chapter 3).

2c: Avoid Jevons Paradox. In situations where land sparing approaches appear better able to yield simultaneous environmental and socio-economic sustainability, these can be undermined if increases in production per unit area in turn drive increases in area in production (Jevons Paradox). Strengthening policy interventions are essential to mitigate this challenge, including land use planning (as mandated, for example under Target 1 of the Kunming-Montreal Global Biodiversity Framework) and certification.

3. Transition towards sustainable agriculture involves ecological, economic, environmental, and social trade-offs that must be recognised and managed.

3a: Be alert to trade-offs. It is tempting to gravitate towards what appear to be local win-win solutions for agriculture and conservation, typically through land sharing approaches, such as agroecology, organic production, regenerative farming, and reduced tillage (Box 1). While in some places and cases these may indeed offer the best pathways towards sustainability (Section 2.3), if they drive increases in imports or accelerated conversion of natural ecosystems elsewhere to compensate for reduced local production, such approaches may in fact result in net negative impacts for both biodiversity and people.

3b: Recognise the need for transitioning policies and incorporating conservation into strategic plans across different government agencies and economic sectors. Notwithstanding opportunities for simultaneously meeting goals related to safeguarding living nature, while also meeting food security, economic, and climate objectives, trade-offs also exist at all geographic scales. Land use planning and sectoral support should recognise these trade-offs, which requires a cross sectoral approach to policy formulation. Participatory and inclusive processes will help better understand and manage the trade-offs and facilitate necessary transitions. Adoption of many sustainable practices may not yield immediate financial returns to farmers. This calls for transitional finance as interim support from governments to incentivise the adoption of sustainable practices and ease the transition for farmers.

3c: Ensure scaleable metrics, indicators, and monitoring frameworks. With clear targets for agricultural sustainability established (e.g. Kunming Montreal Global Biodiversity

Framework Target 10, SDG Target 2.4), it becomes essential to measure progress towards these in a robust and consistent way. Given that agricultural sustainability varies across products and food systems, between sectors, and over spatial and temporal scales (Section 1.2), it is important that metrics, indicators, and monitoring frameworks for evaluation of sustainability are similarly scaleable, comparable across dimensions, and able to incorporate remote or telecoupled impacts (Section 2.1.10). Finally, they should be applicable across different sectors and institutional contexts, supporting cross-sectoral dialogue, by providing a level playing field for assessment of positive and negative impacts. The Species Threat Abatement and Restoration metric (Figure 1.6) meets these criteria.

4. Align agricultural and economic policies with conservation of living nature offers key opportunities to advancing sustainability.

4a: Reform agricultural support harmful to biodiversity. Agricultural support policies have played a key role in the continued growth of agricultural production over the last several decades, but they have also led to considerable negative environmental outcomes on nature and climate (Box 10). Globally, agricultural support amounts to more than US$ 650 billion, and less than 5% of them are 'green subsidies' (Section 5.1.1). Agricultural support reform is essential to supporting transition to sustainable agriculture, as agreed in the Kunming Montreal Global Biodiversity Framework and its Target 18 calling for identifying and eliminating or repurposing US$ 500 billion of annual support by 2030 (Section 5.1.3). While most countries positively support agriculture, policy reforms need to consider that some countries have measures that involve negative support (Section 5.1.2).

4b: Assess and internalise the full cost of agricultural production, including externalities. Currently, many of the costs of agricultural production are externalities poorly understood and unaccounted for (e.g. impacts on biodiversity; Chapter 2), or else hidden in opaque support programmes (e.g. for pesticides, fertilisers, and fossil fuels; Section 5.1.1). Conversely, many of the benefits provided to production, via ecosystem services, remain invisible on balance sheets (Chapter 3), as are the short-term local costs and risks of transition to sustainability (Section 5.1). With so little transparency as to how the true costs and benefits are apportioned, it is little wonder that so much agricultural production is unsustainable. Factoring full costs and benefits into accounting at all scales – individual farms, companies, national budgets – is a precondition for reform of agricultural support and provision of positive incentives. The Ecosystem Accounting framework developed under the UN System of Environmental-Economic Accounts provides a powerful starting point.

4c: Integrate agricultural sustainability into trade and other international agreements. Fully a third of extinction risk (and equivalent proportions of other environmental impacts) are embodied in international trade. This is because the drivers of threat come from different countries (often in the Global North) to those which hold most biodiversity (often in the global Agriculture and conservation: Living nature in a globalised world 99 Chapter 6 Key mesages and south). Building the cost of sustainable production – designed to mitigate such impacts – into trade agreements and other international agreements would not only address a substantial portion of the crisis of biodiversity loss, but also help close some of the financing gap for conservation (as required by Kunming Montreal Global Biodiversity Framework Target 19 and Sustainable Development Goal 15.a).

5. Reform food policy can greatly advance conservation.

5a: Reduce food loss and waste. Few unambiguous policies emerge as 'win-wins' for both agriculture and conservation. An important exception is the reduction of food waste (Section 5.2.3). Food waste – at the level of the farm, the supermarket, or the consumer – simultaneously harms environment, economy, and society. While the likely impacts of policies to reduce food waste are diverse and hard to model (with this in turn therefore being an important research priority), reducing food waste is a 'no regrets' policy for all levels of leadership.

5b: Incentivise positive dietary change. Diets are notoriously conservative within individual cultures (Diamond, 2011). However, the enormous variation in diets between cultures around the world indicates that diets can change, and thus moving towards dietary change is a feasible component of food systems sustainability. All else being equal, animal production typically has a lower impact per unit area than does crop production, but the much larger area required for the former, combined with its greater impacts on water and climate, mean that the overall biodiversity footprint of meat is higher than that of crops (Section 2.1.10). Moreover, there are serious considerations of equity, with only a small share of humanity accounting for much of the global meat consumption, as well as of the health benefits of reduced meat consumption. These costs need to be balanced with the fundamental cultural significance of meat in many societies, including with many Indigenous Peoples. Nonetheless, incentivising dietary change towards reduced meat (Section 5.2.1) is another policy with few overall downsides as a pathway towards sustainability.

5c: Balance local food systems with judicious imports. Focusing on the production and consumption of plants and animals in each region or country (Section 5.1.6) typically stands to reduce greenhouse gas emissions from transport (Section 2.1.9), reduce risks from invasive alien species (Section 2.1.5), support conservation of agrobiodiversity (Section 1.3, Section 2.1.1.) and facilitate adaptation in the face of climate change (Section 3.1.2). However, it has downsides, for example if it requires more agricultural land than do cosmopolitan crops with high productivity per unit area (e.g. Box 12), thereby compromising national food security. These costs need to be mitigated by judicious trade policies (Section 4.1.3.1).

Conclusion

There are few easy solutions for sustainability in agriculture and biodiversity. The world's governments have set extremely ambitious goals for both, and while there are reasonable prospects for addressing them in theory, finding realistic policies is much more challenging in practice. The best policies will likely vary both within and between countries – unsurprising, given the massive spatial variation in biodiversity, in agriculture, and in their interactions. A few 'no regrets' policies do emerge as beneficial environmentally, socially, and economically; the most obvious involve reduction of food waste. More generally, though, policy for sustainability in agriculture and biodiversity will be best guided not by prescriptions but by considerations of likely policy impacts across multiple dimensions: local, national, and international; short-, medium-, and long-term; environmental and socio-economic.

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Table 1: Indicative importance of key messages for different institutional actors

	Local and national governments	Farmers' and extension organisations	Indigenous Peoples & local communities	Conservation non-governmental organisations	Agribusiness	Retail companies	Finance	International organisations and agreements
1. Sustainability of agriculture requires reconciling conflicts with living nature, strategically protecting and restoring nature and climate without undermining food security or economic output.								
a. Recognise sustainability of agriculture as a critical need for living nature.	X	X	X	X	X	X	X	X
b. Safeguard places and species which cannot persist with agriculture.	X	x	X	X	x		X	x
c. Harness opportunities to protect and restore nature and climate strategically without undermining food security or economic output	X	X	x	x	X			X
2. Few one-size-fits-all blanket prescriptions will reconcile agricultural production with biodiversity conservation; rather, successful solutions will take systems approaches and vary by location, scale, and production system.								
a. Avoid blanket prescriptions	X	X	x	X	X	x	X	X
b. Maintain ecosystem services for agriculture	X	X	X	x	X	x	X	X
c. Avoid Jevons Paradox	X				x	x	x	x
3. Transition towards sustainable agriculture involves ecological, economic, environmental, and social trade-offs and challenges that must be recognised and managed.								
a. Be alert to trade-offs	X	X	x	X	X	x	X	x
b. Recognise the need for transitioning policies and incorporating conservation into strategic plans across different government agencies and economic sectors	X	X		X			x	x
c. Ensure scaleable metrics, indicators, and monitoring frameworks	X		x	X	x	x	X	X
4. Align agricultural and economic policies with conservation of living nature offers key opportunities to advancing sustainability.								
a. Reform agricultural support that are harmful to biodiversity	X	X	x	x	X		x	X
b. Internalise the full cost of agricultural production, including externalities	X	x			X	X	X	x
c. Integrate agricultural sustainability into trade and other agreements	X	x			X	X	X	X
5. Reform food policy can greatly advance conservation.								
a. Reduce food loss and waste	x	X			X	X		
b. Incentivise positive dietary change	X				x	X		x
c. Balance local food with judicious imports	X	x			x	X		x

X = high importance x = moderate importance.

Source: Compiled by authors.