Coherence and disconnects in agricultural and conservation policies in sub-Saharan Africa

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Acknowledgements

The following research was undertaken as part of the Sentinel (Social and Environmental Trade-offs in African Agriculture) project (2017-2022), funded by UK Research and Innovation through the Global Challenges Research Fund and the IKEA Foundation. The Sentinel project, an interdisciplinary research project, sought to address the challenge of achieving ‘zero hunger’ in sub-Saharan Africa, while at the same time reducing inequalities and conserving ecosystems. See www.sentinel-gcrf.org/ for details.

The authors are grateful for comments and suggestions received from Steve Bass, IIED. Infographics (Figures 2-4) by Kate Lines, https://www.katelines.co/
Executive summary

Policy coherence: What it means and why it matters
Managing competing objectives of sustainable development at local, national, and global levels is a major challenge for governments. Achieving policy coherence is critical at a time when many countries are experiencing high rates of inflation, increasing levels of national debt and low levels of economic growth, meaning fewer resources are available. At the same time, global competition for natural resources is increasing, as is pressure to meet international commitments, for instance, to tackle climate change, conserve biodiversity and pursue sustainable development. Now, more than ever, we need coherence in policy and governance to balance the competing demands of conserving critical natural habitats and other forms of land use.

This report summarises an analysis of national agriculture, land use, climate change, biodiversity conservation and forest policy coherence in three African countries: Ethiopia, Ghana, and Zambia. The aim of the study was to understand the general nature of coherence, both horizontally and vertically, as well as the underlying objectives of each country’s national policies; to identify synergies and disconnects between objectives; and to increase knowledge of how these synergies and disconnects may affect policy development and implementation in the short, medium and longer term.

Horizontal policy coherence
Policy coherence may be difficult to achieve when ministries or sectors, at local, national, regional or international level, operate in siloes. Siloes have long been criticised for being inward-looking and self-contained, with little regard to the goals and processes of other sectors. While siloes can be effective for vertical coordination, since they have strong mandates and clear lines of accountability, the challenges facing local communities, countries and the world are often interlinked, complex and require a systems-thinking, holistic approach. Horizontal networks and improved incentives for cooperation are suggested as ways to increase coordination between siloes. Underlying these practical suggestions is the importance of a policy culture that values organisational integration, coherence and a willingness to create partnerships. Despite guidance to identify horizontal disconnects, trade-offs between sectoral objectives will require difficult political decisions to be made.

Vertical coherence: diverging priorities and agendas at local, national and global levels
Mismatches can occur between policy objectives at the international, national and local level, particularly when goals set at higher levels of governance do not reflect the needs, priorities and context at lower levels. The post-2015 development agenda emphasised the need to improve the links between international policy and national sectoral policies, particularly relating to cross-cutting challenges like climate change and conservation, where global and local priorities may diverge. When governance is top down, however, countries may feel pressure to draft new policies to reflect an international agenda quickly to secure funding and maintain international standing. This may result in a lack of consultation, a lack of a broader systemic view of challenges – including the identification of trade-offs and synergies – and a fragmented policy environment that doesn’t consider local needs.
Vertical coherence: the policy implementation gap

Policy coherence may be lacking when the objectives of a national policy are not reflected in the practical application, resulting in a gap between design and implementation. Poor communication between national, district and local levels can mean problems are not well understood, policy instruments developed are ineffective, and the technical and financial capacities of implementation agents are not considered. A lack of shared vision and ownership may result when local actors – those involved in the implementation – are not involved in the policy formulation stage. In addition, politicians can interfere with implementation plans by pursuing their own projects, and policy is all too often formulated to win elections rather than address long-term challenges.

Policy coherence and disconnects in Ethiopia, Ghana, and Zambia

Policy disconnects are universal, occurring both across and within policies. Emerging from the analysis are areas of disconnect common to all three countries.

Area 1: Reducing or promoting the expansion of farmland – or both?

In all three countries, national environmental and agricultural policies conflict as to whether the expansion of farmland is to be curbed to preserve natural habitats or encouraged to increase smallholder and commercial agricultural production. Policies acknowledge the need to intensify farming and reduce the conversion of natural habitats to farmland, in accordance with international commitments. However, policies are also promoting the expansion of agriculture in certain sectors, leading to confusion. Reducing deforestation and land conversion are issues largely considered in environmental sector policy, to be tackled partly by increasing productivity on existing land. Under certain conditions, however, agricultural intensification could incentivise further deforestation, a trade-off not currently being considered at the national policy level.

Driving the need to intensify farming are national objectives to achieve or maintain self-sufficiency in staple crops. This goal has become more of a priority in politics since the 2007/08 global recession, and will likely continue to be high on the political agenda due to disruptions in supply brought about by the COVID-19 pandemic, the war in Ukraine, and rising food and fertiliser prices. While self-sufficiency may be important – for shielding a country from international supply issues or where infrastructure to store and distribute food is lacking – pursuing this objective at all costs may lead to large areas of natural ecosystems being cleared for farming, a risk that worsens under climate change and with food demand in sub-Saharan Africa set to triple between 2010 and 2050. Further agricultural expansion is almost a certainty, but the lack of strategies for how necessary expansion can occur with the least impact on the remaining natural ecosystems is of great concern.

Area 2: Multiple demands on the land

Policy indicates there are more activities planned for the land than there is land available. Such activities include increasing forest cover, establishing forest plantations, expanding farming operations, increasing the area under protection, infrastructure development and mining, to name a few. What results is a set of uncoordinated targets without an overarching strategy. Since demand for land outstrips supply, trade-offs between competing demands for land need to be considered, notably through developing and effectively implementing land use plans.
Area 3: Agricultural intensification pathways
In all three countries, agricultural intensification through interventions such as input subsidies, mechanisation and irrigation, occurs alongside efforts to make farming more sustainable, with little consideration of the trade-offs between these two approaches. Policies promoting climate smart agriculture (CSA), agroecology or other forms of sustainable agriculture are seen in commitments to reverse land degradation, pursue green economic growth and protect forests. However, deliberate de-intensification that reduces crop production per hectare in the name of sustainability may, in the short term, drive further deforestation.

In agricultural policy, an emphasis on increasing the use of external inputs leads to a disconnect between policy objectives to raise agricultural production in an external input-dependent manner versus policy objectives aiming to move away from farming practices that are extractive, contribute to greenhouse gas (GHG) emissions and harm natural resources. Despite reliance on increasing inorganic fertiliser use as a strategy to increase staple crop production being widely criticised, fertiliser subsidies continue to comprise a substantial proportion of these governments’ budgets. There is a risk that the commitment to increasing production here and now will continue to override longer-term environmental concerns.

Area 4: Reducing greenhouse gas emissions
Each of the three countries has a goal to reduce overall GHG emissions and is developing policies to achieve this. However, each country is also pursuing policies which could undermine efforts to reduce emissions. Higher fertiliser use, more intensive farming, expansion of commercial agriculture and increases in livestock herd sizes and area, for example, could undermine both climate change adaptation and mitigation goals. Overall, a commitment to reducing GHG emissions is lacking in policies of sectors with high emissions, notably agriculture. Pressure to conform to the values of donors who provide important resources, and who may prioritise climate change mitigation, is then at odds with the need for national economic development (and climate change adaptation). Climate change mitigation may be side-lined if it endangers economic growth, which given the low emissions of these three countries, may well be justified.

Area 5: The role of diversification
The gap between policy objectives and reality on the ground is particularly stark when looking at objectives to diversify agricultural production. On the one hand, agricultural and nutrition policy acknowledges the importance of diversifying agricultural production and diets, while on the other, it pursues production increases in staple crops through input subsidies and guaranteed prices, and in all three countries it is the production of staple foods that is the primary driver of deforestation. The central role of staple foods in agricultural policy reflects their importance for food security, but it is also said to be hindering efforts to develop a diversified agricultural system and preventing households from accessing nutritious and diverse diets. Missing in policy, in all three countries, is an assessment of the relationship between staple crop production and diversification, including the impacts on land, diets and overall production.

Conclusions
Policies developed in different ministries with different objectives influenced by different actors are resulting in incoherent national policy objectives, some of which are in direct contradiction...
with each other. This analysis reveals policy incoherence/disconnects in all three countries that, unless rectified, make it highly unlikely that these countries will meet their commitments to feed a growing population, maintain levels of forest cover, achieve targets under the new Global Biodiversity Framework, and meet Nationally Determined Contributions (NDCs) to GHG emissions reductions under the Paris Climate Agreement. Identifying these disconnects is only a first step, however. Policy coherence does not make the underlying trade-offs disappear and, where objectives cannot be achieved in concert with others, difficult decisions will need to be made. Commonly, and across the world, environmental objectives are sacrificed at the expense of economic development objectives. The danger of not resolving the disconnects is that the hard choices will only become harder with time, with the range of options available generally declining, and with many of the major negative social and environmental impacts largely irreversible.
1. Introduction

1.1 Objectives and context of this study

This study was carried out as part of a wider research project on land use trade-offs in sub-Saharan Africa between 2017 and 2022. The Sentinel project (Social and Environmental Trade-Offs in African Agriculture) brought together research organisations from Africa and the United Kingdom to analyse the drivers and impacts of agricultural expansion into natural habitats in Africa, and the trade-offs between agriculture, food security and rural livelihoods on the one hand, and biodiversity conservation and other ecosystem services provided by natural habitats, in particular forests, on the other. Understanding the policy context in each country was an essential part of this research, as it ultimately shapes the decisions of actors on the ground through interventions such as subsidies or sanctions. In investigating the policy context, several questions arose. Firstly, are competing objectives on the ground partly linked to disconnects in policies and programmes at higher levels of governance? Second, at the policy level, what are the assumptions made by decision makers about food security and forests, and are they valid? One of these assumptions is that by increasing agricultural production on existing land, expansion of farmland into forest could be minimised. In reviewing policies, it became clear that objectives to increase food production and forest area are not consistent with activities on the ground and other national objectives, such as food self-sufficiency, and that these inconsistencies often occurred between agricultural and environmental sectors.

This study analyses national policies for agriculture, food security, land use, climate change adaptation and mitigation, biodiversity conservation and forests in three African countries: Ethiopia, Ghana, and Zambia. The aims of this analysis are: (a) to understand the underlying objectives of these policies, and how they contribute to national agricultural and development goals; (b) identify both synergies and disconnects between these objectives and their associated policies; and (c) to stimulate discussions, at national and global levels, on these synergies and disconnects, and how they may affect policy implementation. While the research points to areas where disconnects commonly occur (Section 3), it is beyond the scope of this research to suggest pathways to achieving coherence and investigating the varying forms coherence can take. A next step would be to investigate how these common areas of disconnect, and the trade-offs they pose, can be resolved or mitigated.

The first part summarises current research on where and how policy disconnects occur. The second part applies this framework to national policies in Ethiopia, Ghana, and Zambia, using these countries as case studies to explore areas common to all three, whereby achieving policy coherence remains a challenge.

1.2 Methods

This study was largely carried out via a desk review of policy documents. National government policy documents on agricultural production, natural resource management, environmental protection and climate change were collected for the three focal countries – Ethiopia, Ghana, and Zambia – using Internet searches and directly contacting stakeholders in the three countries.
final list of policies for analysis was checked by Sentinel project partners in each country (see Table 1). These documents were then systematically analysed to ascertain: i) the pathways through which national agricultural production increases are being pursued; ii) whether these pathways pose a synergy or trade-off with other policy objectives in the agricultural, environmental, land and natural resource sectors; and iii) whether policies overall are consistent and coherent. In addition, key informants in each country working in the agricultural and environmental sectors were interviewed to clarify policy approaches and gain insight into the perception of policy coherence and disconnects in each country.

Table 1. Summary of national policies reviewed by country and sector

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<th>Sector</th>
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<td>Ghana REDD+ Strategy (2016-2035)</td>
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COHERENCE AND DISCONNECTS IN AGRICULTURAL AND CONSERVATION POLICIES IN SUB-SAHARAN AFRICA

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<th>Sector</th>
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<td>National Policy on Climate Change (2016)</td>
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The outcome of the national-level analysis was published by IIED in the form of three policy briefings. Inevitably, this analysis is only a snapshot in time. New policies are being drafted all the time, and some of those analysed in this document will be superseded by new policies in the near future. However, many of the underlying tensions between sectoral, spatial and temporal objectives outlined here are likely to persist.
2. Policy coherence: what it means and why it matters

Managing competing development objectives at local, national, and global level has been a major challenge for governments for centuries. As global competition for natural resources increases, environmental policy and governance to balance the competing demands of conservation of critical habitats and other forms of land use become ever more important. National government policies are essential to implement development objectives and address issues of resource constraints, but they cannot be effective if they lack coherence, are in conflict, or lack a shared vision. The OECD defines policy coherence as “the systematic promotion of mutually reinforcing policy actions across government departments and agencies creating synergies towards achieving the agreed objectives”. Achieving such coherence requires a high degree of joined-up thinking across government, facilitated by strong incentives to do so – something that is rarely happening. Therefore, policy disconnects occur in all countries and regions in the world, resulting in ‘mixed messages’ when implementing policies.

The main macroeconomic argument for policy coherence is efficiency and effectiveness – this is more important at a time when many countries are experiencing high rates of inflation, increasing levels of national debt and low levels of economic growth, which can mean that fewer resources are available for policy development, implementation and monitoring. Agencies need to ensure that their limited resources are used effectively, whilst sustainable development requires the integration of economic, environmental and social concerns. But there are also political arguments for coherence, as joined-up thinking at the policy development stage reduces competition and even conflict between ministries and sectors during implementation.

BOX 1: POLICY COHERENCE AND DISCONNECTS

Policy disconnects are the results of objectives and actions that, whilst being valid within a particular sector or sub-sector, impact negatively on policy objectives in another sector. For example, the objective of increasing food production through mechanisation and adoption of inorganic fertiliser at scale could be incompatible with the objective of reducing GHG emissions and dependency on external inputs. On the other hand, policy synergies occur where objectives and actions from one sector also support objectives and action from another sector. For example, training women farmers in growing vegetables could contribute to an economic policy objective of improving food and nutrition security, whilst also contributing to a social policy objective of increasing women’s empowerment and resilience. Policy coherence happens when policies are synergistic (supporting policy goals across several sectors), or at least neutral (not impacting negatively on policy goals of other sectors). Achieving this requires aligning the different policy objectives, activities and outcomes, addressing trade-offs between them.
If governments are to tackle poverty, food insecurity, climate change, biodiversity loss and energy crises, now more than ever policies must be in harmony. And yet disconnects between policy objectives are very common. Policies to drive commercial growth and economic returns routinely fail to consider the wider social and environmental impacts (Box 2). The subject of this report – disconnects between environment, food, and agriculture policies – may be less visible and widely reported, but they are a serious constraint to sustainable development – not just from a national perspective, but also in terms of a country’s contribution to global environmental goals.

**BOX 2: ENVIRONMENTAL AND SOCIAL CONSEQUENCES OF AGRO-INDUSTRIALISATION IN UGANDA**

Profit-maximising activities can have negative consequences. In Uganda, agro-based industries have been linked to deforestation and the loss of natural vegetation, where large areas of land are cleared; changes to the local climate; and environmental pollution due to intensive use of chemicals and poor waste management. These negative consequences are most often felt by people in the area. The World Health Organisation (WHO) estimates that 23% of all deaths in Africa are the result of avoidable environmental hazards, hazards which disproportionately impact the poor and vulnerable in society. Despite these impacts, Ugandan policy prioritises agro-industrialisation as a way of combatting hunger and poverty, plans that have been criticised for their “worrying lack of policy co-ordination”. Nucleus farms play a large role in the government’s plans for agro-industrialisation, whereby smallholders or outgrowers, surrounding the core estate and processing works, produce raw material be it sugarcane, oil palm or tea. Most of Uganda’s sugar producers use a nucleus model. For example, outgrowers provided some 42% of total cane production between 1996 and 2008 for Kinyara Sugar Works Ltd. Despite appearing to benefit smallholder outgrowers by providing a stable and reliable market for their output, it seems few farmers benefit from the arrangement. The experience in Busoga, an area that has 11 sugar manufacturers, has been one of increasing poverty and food insecurity for sugarcane farmers, many of whom have converted all of their land to sugarcane and who spend the majority of the annual lump sum of money they receive within several months. Despite having a National Sugar Policy (2010), the industry remains poorly regulated and the responsibilities of sugar manufacturers with regards to environmental conservation and food security are lacking. A disconnect between policy level and farmers on the ground has led to inadequate regulation and enforcement, and the environmental and livelihood costs from soil erosion, water runoff, and erratic and unpredictable rains have been devastating. And these impacts go beyond the production areas. In Mabira, the largest rainforest in Uganda, water streams are polluted with untreated sugar processing residues discharged directly into the river. Despite broad understanding of social and environmental impacts of agro-industrialisation across African countries and beyond, policy disconnects between global and national commitments to human wellbeing and environmental health are not translated into effective policy, regulation and implementation.
The following section investigates the nature of policy coherence, dividing disconnects into their direction of operation within the policy structure (Figure 1). Disconnects can operate horizontally, between sectors and development actors, as well as vertically between international, national, regional and local policy formulation and implementation. This framing is used to analyse where disconnects originate and how they can be managed to achieve greater policy coherence.

### 2.1 Horizontal policy coherence

Policy coherence may be difficult to achieve when ministries or sectors operate in siloes. In public administration, a silo can be described as “a hierarchical organisation which seeks to maximise vertical coordination at the expense of horizontal coordination”. Siloes may be concerned with only their own narrow goals and processes and pay little attention to those of other sectors. They can be inward-looking and self-contained with concern only for their own sector-specific goals. There are various criticisms levelled at siloes from reluctance to share information, resolve disputes, coordinate and commit to broader objectives. Decentralisation in developing countries, for example, thought to discourage siloes since lower levels of governance experience interconnecting issues across sectors, is hampered by major donors and aid agencies, which continue to operate through sector support programmes. Siloes are largely criticised for single-mindedly pursuing their purpose with tunnel vision to the bigger picture and impacts they may have beyond their sphere of interest (externalities). Siloes have been linked to historical working relationships and organisational culture. They can form at different scales / organisational levels; for example, within a ministry of agriculture or a ministry of environment there may well be different sub-silos that work on specific objectives, without necessarily coordinating with other parts of the same organisation. In West Africa, for instance, there is a gap between publicly funded agricultural research, agricultural sectoral policy objectives and the needs of farmers. This is linked to the way research is funded, relying heavily on external sources, with communication barriers between researchers and users, and a lack of participation by research users in setting the
research agenda. And the result is a significant proportion of the research budget going into creating improved hybrid staple crops that require high levels of chemical inputs, which are thought to put the use of traditional crops and maintenance of genetic diversity at risk.20

Siloes are not all bad though, they are argued to be effective for vertical coordination, and, if interpreted to mean departments with certain specialisms, then they are necessary and perhaps inevitable for organising and operating in complexity, which policy usually does.21 Siloes often have strong mandates and clear lines of accountability, which are important in government. It is argued that, where siloes are broached and integrated, much weaker policy is created, either because difficult political decisions around trade-offs are avoided or because, in trying to meet all objectives, a much more diluted outcome results for all parties. An example is that of the EU Emissions Trading System, which aimed to integrate energy and environmental policy, and resulted in companies being awarded generous allowances permitting them to pollute without a reduction in emissions.22

Divisions into specialisms can come at a cost, however. Challenges facing local communities, countries and the world are often interlinked, complex and require a systems-thinking, holistic approach.23 Working in siloes can lead to laborious and long decision-making processes, with several departments or organisations working on the same issues, causing a duplication of resources, an inability to collaborate on cross-cutting problems, and factors beyond the scope of the silo, hampering the attainment of sectoral goals.24 In response, different actors have called for siloes to be broken down in a variety of ways.25 The breaking down of siloes has equally been criticised for potentially leading to “institutional instability and service disruption”.26

At present, siloes can operate without depending on other departments, meaning there is little incentive to cooperate. Shared objectives and initiatives have been relied on, to some extent, to overcome siloes – but they are unlikely to fix all the problems, if sectoral targets are prioritised above collectively agreed goals, or if initiatives fail to find ways to move from agreements to practical action.27 In practice, even with political commitments and sufficient resources, consensuses between siloes are usually for a short time, influenced by relatively short political terms and contests for power.28

Broad initiatives and cross-sectoral platforms have been established in many sub-Saharan African countries, but reliance on donor funding, over which members have little control, has been linked to impeding their effective functioning.29 Examples of such platforms include southern Africa, where inter-ministerial climate change committees and task forces in countries such as Malawi, Zambia and Zimbabwe have been established in order to build cross-sector coordination, but remain hampered by a lack of communication and information sharing.30 In Kenya, management of mangrove forests presents both challenges for coherence as well as opportunity (Box 3).
BOX 3: MANAGING NATURAL RESOURCES: GOVERNANCE OF COASTAL ECOSYSTEMS IN KENYA

Natural resources, by nature, require cross-sectoral policy and governance. They are used in different ways, by different groups of users, which have different priorities. They may occur across geographic boundaries, are linked closely to livelihoods and are impacted by policies from different sectors. Achieving policy coherence is, as such, difficult. Kenya aims to overcome this difficulty in managing its coastal ecosystems. Gazi Bay mangrove forests in southern Kenya, despite falling under the remit of the Forestry sector, are affected by fisheries, land management and coastal policies. The differing mandates of stakeholders and governance actors in different sectors has led to competition and conflict. In the pursuit of greater coherence, several actions have been taken. Analysis of the types and levels of stakeholders and policymakers, their vertical and horizontal interactions, and the current performance of governance, including such things as accountability and transparency, have identified ways to achieve coherence in policy and action. The development of the National Mangrove Management Action Plan has been effective in bringing stakeholders together while Integrated Coastal Zone Policy has specifically sought “an integrated, coherent approach to the governance of coastal resources”32, including providing opportunities for community-level actors to participate in higher-level government decision making.

In situations where there is a clear policy commitment paired with coordination mechanisms at the implementation level, cross-sectoral working can be effective. Underlying the practical suggestions for improving the effectiveness of siloes in policy is the importance of a culture that values organisational integration, coherence, and a willingness to create partnerships.33

One area where this has been happening is in climate change policy, whereby new and existing policies are being viewed through a climate or green lens. The reframing of social and environmental challenges in terms of financial costs has also aided economic sectors in considering broader impacts.34

Incompatible political interests are also shaping international development objectives, and failure to overcome these inconsistencies has been linked to the responsibility for addressing inconsistencies falling on technical experts rather than politicians.35 Policy Coherence for Sustainable Development (PCSD), promoted by the OECD during the development of the Sustainable Development Goals, is a way of identifying both the impacts of other policies on development policies and any incoherencies between policies in order to make all policies better aligned with development aims.36 The process starts with the identification of synergies and trade-offs, which once acknowledged can be utilised, managed or solved using frameworks such as the Inclusive Growth Framework and the Framework for Sound Public Governance.37 This assumes, however, that trade-offs are apolitical and that once identified, they can be rationally assessed, discussed, and through better coordination, holistic approaches and sound evidence, be eliminated or minimised, leading to more integrated policy.38 The PCSD process does not prescribe ways in which incompatible goals should be politically prioritised.39
2.2 Vertical coherence: diverging priorities and agendas at local, national and global levels

Mismatches between policy objectives can also happen vertically, between international, national and local objectives, when goals set at higher levels of governance do not reflect the needs, priorities and context at lower levels. Since many strategies to challenges, such as climate change and deforestation, come from outside of government, for example the World Bank or the UN REDD+ mechanism, policy and practice can become fragmented if national and international priorities do not align. Better integration of national priorities and policies developed in conjunction with donors as well as better understanding of the practical requirements and feasibility of implementing policies driven by an international agenda is needed.

The importance of policy coherence is recognised at an international level, being included in overarching objectives, such as the Sustainable Development Goals, and agreements, such as the Paris Agreement on Climate Change. The post-2015 development agenda also emphasised the need to improve the links between international policy and national sectoral policies, particularly relating to cross-cutting challenges like climate change and conservation, where global and local priorities may diverge. As an example, the conservation of the rainforests in the Amazon and the Congo basin may be a global priority as they contribute to climate regulation and stability but, in the countries concerned, such measures may prevent economic growth, employment and livelihood objectives being met.

A top-down system, whereby objectives set within the international community influence national and local policy, can in turn impact policy coherence in several ways. Existing policy documents may be re-written to reflect international policies rather than developing new statements or strategies, potentially due to a lack of the resources and time needed to conduct full consultations and policy development. International objectives influencing national policy often involve a deadline and agreed milestones, which may introduce pressure to deliver policy documents before a broader systemic view of the challenge can be conducted (including a reality check on the ground via local level consultations), resulting in siloed thinking and nominal commitment to priorities that diverge from local needs. Financial and technical support from developed countries or multilateral institutions can impact the coherence of national policy where external actors shape one area of policy without consideration of the broader policy space or of national needs and capabilities. In addition, countries may feel pressure to conform to international agendas, both to secure aid but also to maintain a reputation of internationality and cooperativeness. In Malawi, Tanzania and Zambia, a reliance on external consultants to develop policy documents relating to international climate change adaptation objectives was found to limit interaction with government ministries, while the long draft stages meant that policies were outdated when finalised. Donor and NGO interventions in Zambian agriculture have been described as “confused, contradictory, driving elite capture, and supporting corruption”, and this lack of coordination of large-scale foreign investment with national policy is said to be preventing agricultural development objectives from being achieved. When policies and investments are developed in accordance with international objectives but in isolation from the national policy environment, connections and synergies are missed, while trade-offs and unintended consequences go overlooked.
2.3 Vertical coherence: the policy implementation gap

Policy coherence may be lacking when the objectives of a national policy are not reflected in the practical application, leading to a gap between design and implementation. This can occur for a number of reasons linked to the policy process. Within a country, policies are typically developed by central government agencies with input from external actors, such as consultants or donors; meanwhile, other stakeholders, particularly local communities and those involved in implementation, may be excluded. This can lead to a lack of shared vision and ownership. Poor communication between national, district and local levels can mean problems are not well understood, policy instruments developed are ineffective, and the technical and financial capacities of implementation agents are not considered. In addition, politicians can interfere with implementation plans by pursing their own projects, for example maintaining economic activities in a local area despite their regulation being prescribed in policy as a way of maintaining local support (Box 4). Policy implementation is still a political process, with policy often formulated to win elections rather than address long-term challenges. In general, ongoing failures to implement policy in Africa and elsewhere have been linked to several factors:

- Failing to consider implementation during the policy design stage
- Setting unattainable and overly optimistic targets
- Underestimating the time, cost and risks to delivery
- Lengthy time lags between implementation and outcomes
- Lack of collaboration in drafting policy
- Credit for legislation being passed surpassing credit for implementation
- Implementation failures not informing future policies
- Lack of continuity in government
- Lack of material and financial resources for implementation
- Lack of ownership of the policy and process, and
- Lack of capacity, information and skills.

Many of these factors are outside the range of policy design, relate to the local context, and/or are related to the policymaking cycle itself. They have been grouped into: i) those that relate to a lack of a critical component necessary for implementation – be it information, resources, or motivation; ii) a lack of processes or systems, such as communication channels to facilitate policy implementation; iii) human factors, such as how policies are perceived and understood; iv) extraneous factors outside of the control of policymakers or implementers; and v) a lack of systems thinking.
BOX 4: DISCONNECTS BETWEEN LOCAL, NATIONAL AND INTERNATIONAL GOALS: THE CASE OF WHITEHAVEN COAL MINE IN THE UK AND SMALL-SCALE ARTISANAL GOLD PANNING IN ZIMBABWE

In the UK, a new deep coal mine, the first in 30 years, was granted planning permission by Cumbria County Council in 2019. The mine, heavily invested in by EMR Capital, an Australian company, is expected to have a 50-year life expectancy. It is supported by many politicians, including those local to the mine, for its potential to create jobs in a deprived area. But it is also heavily criticised by other MPs, scientists and activists for its environmental impact and inconsistency with national commitments to reduce carbon emissions and reach net zero GHG emissions by 2050. Coal extracted from the mine would, it is estimated, emit 8.4 million tonnes of carbon dioxide per year – total UK carbon emissions in 2019 were 354 million tonnes. At the time of publishing, the mine was being re-reviewed, with a decision on whether it will go ahead or not expected in late 2022. In this case, an intervention has been allowed to go ahead, until there was mass protestation, despite not conforming to national policy objectives. This indicates disconnect between national and local decision making or issues within the policy process itself that allow for external investors and/or local actors to pursue activities they perceive to be beneficial without wider consensus.

In Zimbabwe, environmental policies fail to be enforced due to limited inclusion of law enforcement, the courts of law, community institutions, environmental groups and other government departments in the policy formulation and implementation phase. In Mutasa district, for example, artisanal small-scale mining of alluvial and riverbed gold deposits and stream bank agriculture contributes to chemical pollution of waterways, deforestation, landscape and topographical change, and soil erosion. Operations are small in scale and so lack the capacity and knowledge to mitigate adverse environmental impacts. The National Environmental Policy contains provisions to use taxes and levies to mitigate negative environmental impacts, to enforce by-laws pertaining to the issuing of licences and permits to alluvial miners; and the use of technology development and extension services for small-scale miners. And yet, gold panning is effectively allowed to continue partly through weak enforcement and also due to politicians fearing that stopping it may cost them votes.
3. Policy coherence in Ethiopia, Ghana, and Zambia: common disconnects between agriculture and natural resource management

Policy coherence requires cooperation and coordination at different levels of governance, in different directions, involving a multitude of factors. To understand more about where policy disconnects are coming from and their impacts on tackling environmental and agricultural challenges, this section summarises national level disconnects across agricultural, environmental, and land use policy for three countries. Policy disconnects are evident in all three countries, both across and within policies.

There are a number of examples of very clear policy disconnects, and emerging from the analysis, disconnects common to the countries where policy coherence can be improved. In all three countries, environmental and agricultural national policies conflict as to whether the expansion of farmland is to be curbed in order to preserve natural habitats, or encouraged, in order to increase smallholder and commercial agricultural production. A large and seemingly common source of disconnect was identified around there being more activities planned for the land, such as increasing forest cover, establishing forest plantations, expanding farming operations, increasing the area under protection, and infrastructure development, than there is land available. Increasing agricultural production is a priority for all three countries but pathways identified for achieving increases, such as external input-dependent intensification and sustainable farming, can contradict each other within and between national policies. Each country has commitments for reducing GHG emissions, and each country is taking steps and revising or creating policy to achieve this. Each country is also pursuing policies that could undermine efforts to reduce GHG emissions, a clear indication that greater coherence is needed between national policies and international objectives. Gaps between policy objectives and practice are also evident in the case of agricultural and dietary diversity, both being priorities in national policy, and yet in practice a narrow range of staple crops are being promoted. Table 2 summarises these five areas of disconnect, and indicates the mode of operation, and why resolving these disconnects is important. Further analysis of each area of disconnect for each country is provided in the Appendix.
Table 2. Areas of policy disconnect common to Ethiopia, Ghana and Zambia and the direction of disconnect (horizontal, vertical or implementation gap)

<table>
<thead>
<tr>
<th>Area of disconnect</th>
<th>Nature of disconnect</th>
<th>Direction of disconnect</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing or promoting the expansion of farmland</td>
<td>Promotion of intensive farming as a way of curbing farmland expansion and reducing the conversion of natural habitats is at odds with objectives to increase the area under cultivation in specific sectors, eg cocoa, livestock and smallholder farming, or on certain land use types, eg grassland.</td>
<td>Horizontal disconnects between and within agricultural and land use policy.</td>
<td>Without coordination between efforts to increase agricultural productivity and use land efficiently, goals to both protect natural habitats and increase overall production may be hindered.</td>
</tr>
<tr>
<td></td>
<td>Large-scale land investments for commercial farming have not been realised due to practical barriers on the ground.</td>
<td>Vertical disconnect: policy implementation gap.</td>
<td>National plans to increase production and manage land use are unlikely to be successful without a realistic understanding of the resources and capabilities on the ground.</td>
</tr>
<tr>
<td></td>
<td>Strategies to reduce farmland expansion lack specificity and understanding of how increases in productivity may impact farmers' motivations to expand.</td>
<td>Vertical disconnect: policy implementation gap.</td>
<td>If increasing smallholder agricultural productivity motivates farmers to expand their farm, as opposed to maintain or reduce their existing land, then intensification strategies may lead to increased levels of deforestation.</td>
</tr>
<tr>
<td></td>
<td>Self-sufficiency is a political priority for all three countries, but the trade-offs its pursuit poses with protecting natural habitats, dietary diversity and other national objectives are not being fully considered.</td>
<td>Horizontal disconnects between agricultural and other sectors.</td>
<td>The pursuit of self-sufficiency at all costs may lead to higher rates of land conversion and deforestation in order to produce enough food, with the associated environmental impacts of farming on a larger scale.</td>
</tr>
<tr>
<td>Area of disconnect</td>
<td>Nature of disconnect</td>
<td>Direction of disconnect</td>
<td>Importance</td>
</tr>
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<tr>
<td><strong>Multiple demands on the land</strong></td>
<td>Land uses, such as forest plantations, protected areas, infrastructure and agriculture, are not coordinated across sectors and policies, leading to competition for land with the preservation of natural habitats at risk of losing out to more productive and profitable uses.</td>
<td>Horizontal disconnects between a variety of sectors that engage in activities on the land.</td>
<td>If competing demands are not balanced, important habitats and resources may be lost.</td>
</tr>
<tr>
<td><strong>Agricultural intensification pathways</strong></td>
<td>Policies to increase external input-dependent production and a narrow range of crops are at odds with the promotion of sustainable intensification. More immediate gains in production may be favoured over longer-term environmental sustainability goals.</td>
<td>Horizontal disconnect between agricultural and environmental sectors as well as vertical disconnects between an international environmental agenda compared to national priorities.</td>
<td>If natural resources are not protected over the long term, agricultural productivity will likely decline.</td>
</tr>
<tr>
<td><strong>Reducing greenhouse gas emissions</strong></td>
<td>All three countries have targets to reduce GHG emissions as well as economic and agricultural policies that will likely increase emissions. Countries likely prioritise economic and food production activities over climate change mitigation, which may be of more urgency to donor countries.</td>
<td>Horizontal disconnect between economic, agricultural and environmental sectors alongside vertical disconnects between donors and recipients.</td>
<td>Failure to reduce GHG emissions and meet international targets could lead to dangerous climate change impacts, however preventing economic growth could contribute to high levels of poverty and food insecurity.</td>
</tr>
<tr>
<td><strong>The role of diversification</strong></td>
<td>Diversification is a policy goal across the agricultural, food security and nutrition sectors, but programmes supporting the production of staple crops undermine efforts to diversify production and diets.</td>
<td>Horizontal disconnect between sectors and/or ministries</td>
<td>Dietary diversity is critical for long-term human health and productivity while agricultural diversity is necessary to help sustain productivity under climate change.</td>
</tr>
</tbody>
</table>
4. Mapping policy disconnects and synergies

As an exercise in visualising the trade-offs and synergies between national development policies, Figures 2 to 4 (below) map a range of national policy objectives for each country, highlighting the ways in which objectives are in synergy with each other, each contributing to the same end goal, or pose a potential trade-off where the full attainment of both objectives is unlikely. This mapping exercise captures a moment in time, given that policies are continually evolving, and is based on the assumption that all claims on land may potentially be at odds with one another if land is scarce and land use is not planned. Less likely to pose trade-offs with environmental objectives are crop production objectives related to irrigation, increasing soil fertility and reducing post-harvest losses. More likely to create trade-offs are objectives relating to the expansion or intensification of farming with the protection or creation of forests and other natural habitats.
Figure 2 – Trade-offs and synergies between policy objectives in Ethiopia
Figure 3 – Trade-offs and synergies between policy objectives in Ghana
Figure 4 – Trade-offs and synergies between policy objectives in Zambia
Some key disconnects identified from the mapping exercise, as summarised in Table 3 below, show the similarity between the three countries in terms of policy objectives across the agricultural, environment, land, natural resources and climate change sectors.

### Table 3. Key policy disconnects in Ethiopia, Ghana and Zambia

<table>
<thead>
<tr>
<th>Ethiopia</th>
<th>Ghana</th>
<th>Zambia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives to develop land for commercial livestock farming and horticultural production seem to be at odds with objectives to halve habitat conversion due to agricultural expansion.</td>
<td>Objectives to increase cropland area may be at odds with objectives to intensify agriculture to reduce the need to expand farmland and make space for afforestation.</td>
<td>Objectives to intensify agricultural production to prevent the conversion of natural habitat to agriculture, as well as objectives to halve the rate of natural habitat conversion, seem to be at odds with objectives to allow the increase in area of land under crop cultivation (by 900,000 hectares by 2030).</td>
</tr>
<tr>
<td>Objectives to increase inorganic fertiliser use seem to be at odds with objectives to reduce the demand for fertiliser in order to reduce pollution and emissions.</td>
<td>Objectives to increase fertiliser use through subsidies may be at odds with objectives to phase out subsidies for inputs harmful to biodiversity.</td>
<td>Objectives to promote the Farmer Input Support Programme (FISP), including fertiliser subsidies, to create and/or maintain a maize surplus seem to be at odds with objectives to reform the FISP, and promote dietary and crop diversification.</td>
</tr>
<tr>
<td>Objectives to reduce greenhouse gas emissions from crop production and animal husbandry seem to be at odds with objectives to increase land under farming and input use.</td>
<td>Objectives to remove some 324 million trees by 2027 may be at odds with objectives to plant trees, increase tree cover and reduce the loss of forest.</td>
<td>Objectives to increase the livestock population are at odds with objectives to reduce greenhouse gas emissions.</td>
</tr>
</tbody>
</table>
5. Conclusions

Policies developed in different ministries with different objectives influenced by different actors can result in an incoherent set of national objectives, some of which are in direct contradiction with each other. Analysis of the three countries’ environmental, agricultural and development policies reveals common areas of disconnect; around ways to increase agricultural production, how land is to be used, the role of sustainability in agricultural intensification and development, the importance given to reducing GHG emissions, and agricultural diversification versus specialisation. The analysis shows instances of an international agenda being distinct from national priorities (vertical disconnect, eg sustainable farming versus external input-reliant forms of intensification); of ministerial siloes creating trade-offs (horizontal disconnects, eg competing demands for land for forest restoration versus farming); and gaps between policy and practice (policy implementation gap, eg diversification in policy versus maize subsidies in reality).

Focusing on food production, natural habitat protection and biodiversity conservation in particular, the analysis reveals policy incoherence/disconnects in all three countries that, unless rectified, make it highly unlikely that these countries will meet their commitments to feed a growing population, maintain levels of forest cover, achieve targets under the new Global Biodiversity Framework, and meet NDCs to GHG emissions reductions under the Paris Climate Agreement. It seems likely that other countries in the region may face a similar prospect for similar reasons.

Alongside the host of reasons given for policy disconnects in the literature, discrepancies between objectives can also be attributed to policy targets occurring on different time and geographic scales. On the one hand, environmental objectives aim to preserve natural habitats and resources over the long term, while on the other, food production-related objectives respond to the immediate needs of the people and voters. A growing understanding that the exploitation of natural resources may bring short-term poverty alleviation, but long-term costs for agricultural production, climate change, biodiversity and habitat protection, will hopefully drive greater consideration in policymaking of both short-term and long-term gains. In addition, current policies, in focusing on the near future, do not spell out how a growing food demand in the medium to longer term will be met, and what the implications might be for forests, GHG emissions and biodiversity.

Disconnects may also arise through the development of policies that sound effective and impactful but that have little chance of being adopted or implemented, perhaps because human capacity or resources are not available. In Zambia, policies around reducing deforestation are found to rarely be put into effect due to the legal, financial and governance-related barriers to implementation.\(^{76}\)

The above analysis found that policies, particularly around GHG emissions reduction targets, are based on resources the government hopes to acquire, such as donor funding, rather than the resources and capabilities available at present.\(^{77}\)

A systematic analysis of policies, with the aim of identifying where policy disconnects are originating from and around which topics, can help governments address them. That there are commonalities in terms of the source of disconnects and the issues they are trying to tackle means it is likely many countries are struggling with the same trade-offs and challenges.
But there are also synergies between different policies. Reducing emissions, increasing productivity and increasing soil cover and fertility may complement one another, for example. Without identification, however, there is the risk that these trade-offs and synergies go unaddressed and unutilised, and that production, economic and self-sufficiency goals dominate at the expense of environmental and sustainability goals. The identification of trade-offs does not automatically lead to their acknowledgement and minimisation, however. A better understanding is required of how and why they have arisen, and what technical, management and cultural changes need to occur to prevent future trade-offs. And there are multiple interventions designed to manage trade-offs, but the demands on land are numerous, and agricultural and environmental objectives are often in competition with one another.

Countries are taking steps to better integrate policies through cross-sectoral organisational arrangements and the development of coherent land-use policies and planning. Ethiopia, for example, is in the early stages of a programme to support land use planning at local to national levels and, at the end of 2021, the country adopted a law establishing a National Dialogue Commission, aimed at finding agreement between leaders and society around fundamental national issues. Ghana introduced a law (the Land Use and Spatial Planning Act, 2016) that requires district governments to have land-use plans, while Zambia has recently established a new Ministry of the Green Economy and Environment. The desire to avoid disjointed policy thinking and pursue an integrated, multi-sectoral approach is evident in national planning documents, and REDD+ strategies in all three countries make the case for a holistic and effective national land-use plan.

Focusing on land, land tenure security, addressing land degradation and instituting a clear system of land-use planning, appear to be promising approaches to supporting efforts to increase production and productivity and protect the forest. Forward thinking land-use planning could identify areas for agricultural intensification, sustainable climate smart farming, forest protection and restoration alongside other uses. Indeed, some of the apparent contradictions in policies may stem from a lack of geographic specificity, outlining where intensive versus more sustainable forms of agriculture can occur. This could then support local level customary authorities to similarly plan for high and low intensity farming, as well as ecosystem restoration and protection of vulnerable habitats. In addition to the many practical ways of overcoming disconnects, there are ways of influencing the underlying cultures that foster collaboration, bottom-up and systems thinking, and a commitment to broader sustainable development. Various strategies have been proposed as a way of navigating and improving policy coherence, with the acknowledgement that there is no universal process. In general, understanding and debating political trade-offs, investigating how goals conflict over the longer term, leading to policy decision-making dilemmas in the future, and including all governance actors in the design and development of policy will be necessary. Table 4 summarises some of the suggested actions and strategies.
<table>
<thead>
<tr>
<th>Direction of policy disconnect</th>
<th>Options for achieving coherence</th>
</tr>
</thead>
</table>
| Horizontal                    | - Horizontal networks, such as national planning commissions, ministerial offices mandated to pursue policy coherence, knowledge and stakeholder platforms, and open data\(^{82}\)  
- Hiring individuals who can operate across sectors, understand policymaking, be effective communicators in different disciplines and work with people from distinct sectors\(^{83}\)  
- Creating knowledge-sharing platforms so that both problems and solutions can be co-developed; ensuring that all policies created take social impacts into account, such as health and welfare  
- Ensuring integrated policies lead to benefits across all sectors\(^{44}\)  
- Internalising thinking about the consequences of policy implementation on other sectors  
- Safeguards to help align policies and programmes in one sector with goals in another sector, such as those under the REDD+ process used to mitigate the negative direct and indirect impacts of REDD+ actions on communities and ecosystems.\(^{85}\) |
| Vertical: international to national | - Ensuring political commitment and leadership to provide the will and focus on long-term international objectives  
- An integrated, cross-sectoral approach to implementation  
- Long-term decision making across decades  
- A concerted effort to assess the impacts of policies, based on evidence and including trade-offs at various scales  
- The creation of mechanisms to resolve conflicts and disconnects  
- Inclusion of actors and stakeholders from local to global level  
- Adaptive management and clear lines of accountability  
- Effective communication and capacity building  
- Regular reviews of policies  
- Institutional platforms to enable coordination  
- Transparent financial data  
- Joint methodologies and data sharing  
- Mapping of institutions, coordination mechanisms, legal frameworks, policies, strategies, M&E frameworks and partner initiatives to identify synergies, overlaps and gaps.\(^{86}\) |
| Vertical: policy implementation gap | - Inclusion of stakeholders and sectors in a participatory policymaking process to ‘ground truth’ policies  
- Policies to be informed by research on local needs and constraints  
- The use of multi-stakeholder platforms for vertical and horizontal communication  
- Improved technical capacities at both formulation and implementation stages  
- The establishment of institutions at the local level to aid implementation  
- Building capacity for bottom-up development planning  
- Ensuring situational analysis has a central role in local policy design and implementation.\(^{87}\) |
Despite actions that can be taken to minimise disconnects, policy integration does not make trade-offs disappear and there are objectives that cannot be achieved in concert with others. Success in one arena will come at the expense of another, and these are difficult, inherently political, choices linked to the wellbeing of the country’s citizens and the wellbeing of the planet. Complex natural resource, food security and growth challenges will likely not be solved by achieving policy coherence alone, although without greater integration between sectors, interlinked problems will be hard to tackle particularly with declining resources to do so. Commonly, and across the world, environmental objectives are sacrificed at the expense of economic activities, an occurrence policy incoherence contributes to. The danger of not making these hard choices is that they will only become harder with time, with the range of options available generally declining. The less action taken to preserve natural habitats and resources now, the less we will be able to do to preserve and use them in the future.
Appendix: Country analysis

Reducing or promoting the expansion of farmland – or both?

Commitments versus reality

Historically, agricultural production increases in Ethiopia, Ghana and Zambia have been mainly the result of expansion in the area under cultivation. In Ghana, yields have seen only moderate growth since 1991, while crop output growth in Ethiopia has only recently, since 2005, been linked to land-saving technological change (as opposed to expansion of farmland). In all three countries, environmental and agricultural national policies conflict as to whether the expansion of farmland is to be curbed, in order to preserve natural habitats, or encouraged, in order to increase smallholder and commercial agricultural production. The degree to which agricultural expansion is promoted varies between policies. Expansion of agricultural land is either seen as a positive (in Zambia, the large area of the country and relatively low population density appears to enable expansion), or as unavoidable due to population growth and associated growth in the demand for food (in Ghana and Ethiopia), and persistent low agricultural productivity.

Policies in Ghana largely promote intensive farming, acknowledging both a lack of available land in the country and the negative impacts of expansion. Land scarcity, land degradation and commitments to climate change mitigation, agreed at UNFCCC COP26 in November 2021, require the conversion of natural forests and grasslands to be much reduced. Agricultural expansion, however, is being supported in national policy. Policies outline objectives to increase the area under cocoa, transform grasslands to farming and expand smallholder farms.

Plans for expansion include the African Development Bank-funded project, Technologies for African Agricultural Transformation in the Savannah (TAAT-S), which has the direct aim of bringing 16 million of Africa’s 400 million hectares of the savannah into agricultural production, 100,000 hectares of which will be in Ghana. The National Spatial Development Framework (2015-2035) states that 65% of Ghana’s land is suitable for agriculture and that large areas of grassland in the country (34% of land area) could be converted to agriculture. Additionally, since cropland is largely organised into small units, separated by grassland, the Ghana Zero Hunger Strategic Review states that larger and more productive farms could be created by converting these in-between areas.

Similarly, Zambia seeks to curb expansion in one policy, but accepts it as inevitable in another. The 2007 National Policy on Environment has the objective of sustainably intensifying land use, without converting any additional land area into agricultural land. However, Zambia’s Vision 2030 policy (2006) outlines the country’s goals to increase agricultural productivity and land under cultivation by 2030, although by no more than 0.9 million hectares. Zambia’s seventh National Development Plan (2017-2021) aims to increase agricultural production through mechanisation, expansion of agricultural land, and increasing the number of farmers.

Land-based agricultural investments

In Ethiopia, the Climate Resilient Green Economy Strategy (CRGE) (2011) has the objectives of reducing the need for new agricultural land by increasing yield and value of crops, and shifting
new agricultural land from forests to degraded land that is brought into production with irrigation and the use of natural fertiliser. This is echoed to some degree in the country’s Agricultural Sector Policy and Investment Framework (2010-2020), which expects intensification to be the main route through which smallholders increase their production. A significant objective of the Livestock Master Plan, however, is to increase land area (and access to land) for forage seed and forage production, and for establishing and building dairy agribusinesses. This is to be achieved by making it more attractive for private entrepreneurs to lease land by providing tax incentives, subsidising the leasing rates, allocating irrigated land for forage production to investors, and setting the leasing rates at below market level rates to encourage private investment. In addition it is expected that expansion will be the way in which commercial agriculture grows, particularly in the mid-altitude and lowland areas, where large land areas require mechanisation and capital investment in order to cultivate.

In Zambia and Ethiopia, land is required for commercial and industrial agricultural expansion. In Ethiopia, the Agricultural Sector Policy and Investment Framework (2010-2020) policy stated that approximately 3.3 million hectares of land would be developed for commercial agriculture. These land deals have not occurred to any great degree, however, due to poor land productivity, lack of infrastructure and labour, and corruption. USAID reports that large concessions in Ethiopia are being granted to some of the best agricultural land in the country, but that few projects are operational, and much of the investment is domestic (USAID, 2016). These are examples of vertical disconnects and implementation gaps, where national ambitions have not necessarily taken into account the realities and capacities on the ground.

The Zambian government has, since 2002, been conducting the Farm Block Development Programme (FBDP), whereby up to 10,000 hectares would be set aside in each province for agricultural land and rural development in order to encourage private sector investment. The 1995 Land Act has enabled the government to set aside land for farm blocks, but the programme has not attracted significant investment for several reasons relating to implementation, including low labour productivity, poor infrastructure development, and producers being unable to participate in the programme due to a lack of access to finance linked to insecure land tenure.

The question of how much land is available for various uses, including agricultural expansion, is a contentious one. In Ethiopia, degradation, tenure insecurity and fragmentation make land a precious resource, with 38% of households having less than 0.5 hectares of land. On the other hand, there are thought to be large areas of unused land suitable for farming. Similarly, in Zambia, national policy states that Zambia has significant potential to increase agricultural production due to the country’s “favourable climate, fertile land and vast water resources”. Although there are estimates of how much land is suitable for different types of agriculture, it is less clear how much land is actually available given that it may be under various forms of protection, used by pastoralists or occurring on steep slopes, for example. Estimates also vary by policy, are perhaps being exaggerated in extent, and, as stated, may fail to consider existing claims on the land or barriers to farming.
Strategies to reduce farmland expansion

Policies that contain explicit objectives to reduce deforestation and land conversion due to agriculture include the National Biodiversity Strategy and Action Plan (NBSAP) and REDD+ strategies. In Zambia, a reduction in the deforestation rate, which over the last 20 years has averaged at just under 100,000 hectares per year, is to be pursued through the promotion of sustainable agricultural practices. In Ghana, the only tool mentioned to prevent the expansion of farmland into natural habitat is the use of Payment for Ecosystem Services, but it is unclear how and where this is to be used. In Ethiopia, the National Biodiversity Strategy and Action Plan (2015-2020) outlined the goal of halving the rate of habitat conversion due to agricultural expansion (from the then-rate of 10% per year). Interventions to meet this target centre around technologies to increase the productivity of smallholder farmers, increasing alternative energy sources, use of energy-efficient technologies, and creating alternative jobs for local communities – but without specifics as to how to achieve this. As such it is uncertain how policies will be translated into implementation. The NBSAP and REDD+ strategies, in all three countries, are largely influenced by actors outside of government ministries and may not be well integrated with national policies developed in-house. Policy authors may also lack an understanding of the technical and practical capacities or available resources needed to translate policy into action leading to vertical disconnect and an implementation gap.

In all three countries, productivity increases are seen as a way to curb agricultural expansion. The assumption is that, if farmers produce more on the land they already cultivate, they will not need to clear new land for farming. In Zambia, the Climate Smart Agriculture Investment Plan (CSAIP) (2019) predicts that climate smart agriculture practices can reduce the need for land conversion to farming due to higher yields, but only marginally, given the rate at which demand for food is increasing. Agricultural intensification is listed in Ghana’s REDD+ strategy document (2016-2036) as a way of avoiding deforestation, while Ethiopia’s NBSAP (2015-2020) states that increasing the productivity of smallholders will help to increase both yields and the value of crops per unit input, resulting in a decrease in the need for new agricultural lands. In Ethiopia’s CRGE, yield increasing techniques are expected to limit cropland growth to only 1.7% (by 2025). There is a risk, however, that making farming more productive, efficient and profitable could motivate farmers to expand their farming enterprises rather than discouraging them from further expansion. This effect is known as Jevon’s paradox, which is already occurring in some regions of Latin America. Under certain conditions (in particular lack of off-farm livelihood opportunities and high / increasing demand and prices), agricultural intensification could incentivise further deforestation. Research into whether agricultural intensification will lead farmers to be less inclined to convert forest to farming indicates that the relationship is not so clear.

Meeting future food demand

Partly driving the need for increased crop production are population growth, low productivity and the pursuit or maintenance of national self-sufficiency in staple foods. The goal of self-sufficiency in staple crops has become more of a priority in politics since the 2007/08 global recession and associated spikes in food commodity prices, and will likely continue to be high on the political agenda due to disruptions in supply brought about by the COVID-19 pandemic, the war in Ukraine,
and rising food and fertiliser prices. Food self-sufficiency is important for low-income developing countries since adequate foreign exchange may be lacking to purchase imports, as may the infrastructure to store and distribute food. Self-sufficiency may also be justified to shield a country from international supply issues, building national pride and growing the agricultural sector – but mainstream economists consider it to be inefficient and potentially distort markets, and negatively impact food security. Food insecurity, in one study in Ethiopia, was found to decrease when food prices were tracking world food prices, although this is not without its risks. Africa as a continent is currently a net importer of food, despite many imports able to be produced domestically. This is largely attributed to poor storage and processing facilities, poor infrastructure resulting in high transport costs, and the boost that international food production gets from government subsidies and economies of scale.

For Ghana, self-sufficiency is a policy priority. According to its agricultural policy, the country was self-sufficient in 2017 in all major staple crops except rice and millet, and surpluses of maize and soybean are thought to be a direct result of the Planting for Food and Jobs campaign. This strategy subsidised inorganic fertiliser, agricultural mechanisation and other technologies that enabled an increase in productivity. However, cereal productivity declined from 2017 to 2019, although now rising again, and FAO data indicate the country is not self-sufficient in grains. In addition, demand for cereals is rising rapidly due both to population growth and rising demand for livestock feed. Maize, sorghum and cassava are also expected to experience reductions in total production since the area of land suitable for growing cereals is predicted to decline under two different climate scenarios.

Self-sufficiency in staple crops has been a key objective for Ethiopian national development and was a central goal of the Growth and Transformation Plan I (GTP I). It is absent, however, from more recent national and agricultural development policies – with ongoing production increases the country is believed to have achieved self-sufficiency. A recent project indicates this may not be the case for all crops, such as wheat. Very little is written in Zambian policy regarding national level food self-sufficiency – perhaps because Zambia maintains an agricultural trade surplus (the value of exports is greater than the value of imports) and is a net exporter of cereals. In 2015/16, the country recorded a surplus of maize, and maize supply is considered synonymous with food security. The National Food and Nutrition Policy (NFNP, 2020), however, states that “during much of the last two decades, trend data on food production indicate that the production of maize, the main staple crop, has been below national requirements” and that more maize is being imported. In addition, the Second National Agricultural Policy states that, to date, increases in agricultural production have “not been sufficient enough to meet the growing domestic and foreign demand for Zambian agricultural commodities”.

Across all three countries, it is unclear how objectives to reach or maintain self-sufficiency will be achieved in the medium to longer term. The demand for cereals by 2050, as a proportion of demand in 2010, is expected to reach between 237% (Ethiopia) and 519% (Zambia), with Ghana in between at 372%. The pursuit of self-sufficiency – in staple crops, livestock and wood products – may hinder other national goals, such as reducing food insecurity, if this is defined as accessing a diverse range of nutritious foods as opposed to just cereals, and farm expansion-driven habitat loss. If the effects of achieving or maintaining self-sufficiency on other national objectives can be
considered across ministries, then trade-offs may be avoided, mitigated or managed depending on how national objectives are politically prioritised. But if self-sufficiency is pursued at all costs, it is likely to lead to significant loss of natural habitat. In sub-Saharan Africa, rapid loss of forests is largely linked to smallholder farms expanding the area under food crop production. Given the scale of projected demand growth and the impacts of climate change on yields, forest loss is likely to continue, if not increase.\textsuperscript{132}

Under these conditions, achieving national food self-sufficiency for all three countries, whilst also meeting commitments with regards to protection of natural habitats, may be unrealistic, particularly when disconnected policies do not make provisions to protect the most important habitats against agricultural conversion. Since further agricultural expansion is almost a certainty, the lack of strategies for how expansion can occur with the least impact on the remaining forest is concerning. And food production and habitat conservation are only two types of land use – but there are more.

**Multiple demands on the land**

From objectives listed in each country’s policies, it would appear that there are more activities planned for the land than there is land available. Activities include increasing forest cover, establishing forest plantations, expanding farming operations, increasing the area under protection, infrastructure development, and mining, to name a few. In Zambia, under REDD+ (2015), the establishment of tree plantations is encouraged to meet rising wood demand and reduce pressure on existing indigenous forest.\textsuperscript{133} In Ghana, several policies have reforestation objectives, including plantation and woodlot development, and there does not appear to be an overarching strategy but rather a series of uncoordinated targets. For example, there are:

- Goals to reforest/afforest 20,000 hectares of degraded lands each year under the NDCs (2015)
- A commitment, made in 2015, to restore two million hectares of forest under the Ghana Strategic Investment Framework for Sustainable Land Management
- A REDD+ project, Reforestation of Degraded Forest Reserves in Africa, which has the aim of reforesting 15,000 hectares by 2048
- 625,000 hectares of forest plantations are planned to be established under the Forestry Development Master Plan (2016-2036) with 3.1 million hectares of planted forests to be established by 2036, and
- Some 168,000 hectares of energy (biomass/fuelwood) plantations and 475,000 hectares of plantations for industrial, environmental or other uses are to be established under the Forest Plantation Strategy (2016-2040).

Some of these plantations are expected to be established on farm fallows and grassland, creating direct competition with land for crop and livestock production.\textsuperscript{134}

In Ethiopia, the government is prioritising reversing deforestation and forest degradation as part of its strategy to achieve sustainable economic growth and reduce emissions, and has committed to restoring 15 million hectares of forest landscapes by 2030, as well as afforesting/reforesting seven million hectares of forest and woodlands, and developing 310,000 hectares of commercial
forest plantation. The CRGE (2011) states that two million hectares of forest will be afforested by 2030, one million hectares reforested, while the recently updated NDC states that three million hectares will be reforested by 2030 and nine million hectares of land restored by 2050. Ethiopia, stated to have the second-largest afforestation and reforestation programme in the world, has also committed to planting 16.1 million hectares of new forest by 2030. The country’s many goals to increase forest cover are partly in order to meet national industrial wood product demand, which is expected to grow by over 600% by 2040.

For both Ghana and Ethiopia, the multiple restoration, afforestation and reforestation goals make it difficult to know which targets the country is using and whether they are additive or overlap.

There is also increasing pressure from the international conservation community to increase global and national protected area networks. In the case of Zambia, protected area coverage is to increase in order to achieve representativeness and ecological connectivity at landscape level. This is despite a significant reduction in the area under Protected Forest Areas (PFAs) taking place by government decree; more than 280,000 hectares of forest reserve have been degazetted or excised over the past decade. In Ghana, the Forest and Wildlife Policy (2012) aims to create biological corridors and establish a broader network of protected areas. In Ethiopia, the NFSDP proposes the establishment of ten new protected areas and four more biosphere reserves, aiming to increase the extent of protected area from 14% to 20% by establishing new ecologically representative areas. A drive to expand protected areas further is expected with the international objective of protecting at least 30% of land and inland waters by 2030 under the UN Convention on Biological Diversity. The percentage of terrestrial area protected in Ghana as of 2018 was only 15.6% and 17% for Ethiopia in 2021 while in Zambia, as of 2020, it is estimated at 41.3%.

The many demands on land for agriculture, forestry and livestock require national level land use planning to optimise production, forest cover and biodiversity protection goals. REDD+ investment plans and strategies in Ethiopia and Zambia both detail land use planning approaches to minimise policy conflicts and unintentional consequences of land planning decisions. The policies detail how mapping can be used to help base investment opportunities on both human influence and cropland potential, provide early warning of potential conflicts among sectors, and reconcile agricultural and commercial activities with natural resource management. Where conversion of land to farming is inevitable, land use planning can define areas of natural habitat to be maintained or converted, and outline the tenure, rights, beneficiaries, and management responsibilities for specific areas. In addition, land use planning may help direct the expansion of farming onto degraded land, presented as an option alongside productivity increases to reduce pressure on forests in Ethiopia’s CRGE. Despite this potential, there are at present no central land use planning approaches in any of the countries, but the Ethiopian government plans to make national land use planning a key activity under the Third Growth and Transformation Plan. Land use planning can also be used to delineate areas for intensive farming and areas for low-input farming – two agricultural development pathways which can also be a source of disconnect in policy. However, with any top-down land use planning process there is a serious risk of overlooking (or sometimes deliberately neglecting) the interests and rights of more vulnerable people who tend to have little influence over such processes.
Agricultural intensification pathways

Sustainable versus external input dependent intensification

In all three countries, crop intensification (an increase in agricultural production per unit of inputs) is being pursued through interventions such as input subsidies, mechanisation and irrigation, alongside efforts to make farming more sustainable. Sustainable intensification that also increases output per unit input (primarily unit of land, but also unit of water or fertiliser), but with greater consideration of the long-term social and environmental impacts, includes strategies such as regenerative agriculture, conservation farming, agroecology and climate smart agriculture (CSA), but also an increase in the use of improved crop varieties and fertiliser. Where the emphasis is on the use of external inputs, it can lead to a disconnect between policy objectives to raise agricultural production in an external input dependent manner versus policy objectives aiming to move away from farming practices that are extractive, contribute to GHG emissions, and harm natural resources.

In Zambia, there are distinct differences between the first National Agricultural Policy dated 2011 and the Second National Agricultural Policy dated 2016. The former details the need for “environmentally friendly farming systems such as conservation farming, afforestation, and the use of organic manure to ensure long-term productivity and viability” and includes major reforms and the eventual phasing out of the Farmer Input Support Programme (FISP), which includes a fertiliser subsidy. The latter, and more recent policy, favours external input-dependent intensification and supports the ongoing operations and expansion of the FISP. While the FISP, and Food Security Pack, which distributes free hybrid maize seed to vulnerable households, have increased the number of farmers using fertiliser and hybrid seed, and have in general contributed to increased maize production, they may have limited the adoption of sustainable agriculture by focusing on a small number of crops, promoting only the use of inorganic inputs to boost soil fertility in the short term, and ignoring broader soil quality. Further to this, Zambia’s maize-fertiliser subsidy programme is found to have dis-incentivised sustainable intensification practices such as growing a diverse range of crops, and incentivised practices that in the long term lead to soil degradation, such as continuous cropping without fallow. That is not to say input subsidies are necessarily bad – they have also been found to lower carbon emissions by promoting intensification over land expansion, at least in the short term, particularly in sub-Saharan Africa, where increases in organic and chemical fertiliser use have been insufficient to maintain soil fertility. Input subsidy programmes continue to be popular politically and spending on agricultural subsidies has been seen to rise ahead of general elections.

Other policies in Zambia that support sustainable agricultural intensification include:

- The seventh National Development Plan, which promotes the adoption of agricultural environment-friendly practices and a reduction in the use of chemical fertilisers
- The 2019 Climate Smart Agriculture Investment Plan from the World Bank, which found CSA practices to have a generally positive effect on Zambian household welfare and production
- The Land Degradation Neutrality Policy (2019), which has the target of, by 2030, ensuring 50% of agricultural land is under sustainable agricultural practices compared to 2015
- The national REDD+ Strategy (2015) supports the provision of performance-based incentives for adopting climate smart agricultural practices, and
• The National Biodiversity Strategy and Action Plan (NBSAP, 2015-2025) has the objective of, by 2025, ensuring areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity. These targets lack a baseline or specific implementation plans. The NBSAP also has plans to phase out subsidies for inputs harmful to biodiversity, a goal not discussed in agricultural policy.

These objectives seem to contradict the aims of the Second National Agricultural Plan (2016) and state-led farmer support programmes, which promote external input-heavy intensification of mainly maize. Finding ways to bring together external-input dependent farming of cereals with more sustainable forms of intensification is needed to address this disconnect within the agricultural sector.

In Ghana, agricultural modernisation through the increased use of inputs and mechanisation and the pursuit of a new green revolution is the dominant development discourse relating to agriculture. Similar to Zambia, the reliance on increasing fertiliser use as the main strategy to increase staple crop production has been criticised widely for largely benefitting better-off and “politically well-connected” farming households, for failing to address underlying issues limiting access to fertiliser such as high costs, and for failing to have an exit strategy. Despite the government’s fertiliser subsidy comprising a substantial proportion of the government’s budget, yields have not increased hugely and any gains are likely to be unsustainable over time, with ongoing soil fertility loss and climate change, if not paired with integrated soil fertility management practices. Alongside intensification plans are policies promoting CSA, agroecology or other forms of sustainable agriculture, and yields are expected to increase with the adoption of good agricultural practices. The Forestry Development Master Plan (2016-2036), Nationally Determined Contributions (2015) and Ghana’s National Climate Change Policy (2013) all support CSA as a way of increasing yields and building climate resilience. The national agricultural policy (2018-2021) discusses promoting green agriculture in order to rebuild natural capital, restore and maintain soil fertility, reduce soil erosion and inorganic agrochemical pollution, and protect soils. According to the African Union, however, only 0.04% of agricultural land in Ghana is under sustainable land management (SLM) practices. Although the National Climate Smart Agriculture and Food Security Action Plan of the Ministry of Food and Agriculture (MoFA) lays out the country’s objective to adopt CSA as a way of securing food supplies under climate change, the MoFA also states in the national agricultural policy that sustainable land management is not their responsibility, falling under the responsibility of the Ministry of Lands and Natural Resources. As with Zambia, there are inconsistencies between what is said in different policies on the one hand, and between policy and practice on the other.

In Ethiopia, agricultural intensification carried out sustainably is the dominant pathway outlined in national policy for increasing production overall. Methods to increase production that are both productive and sustainable are a priority across a number of policies and papers. Land degradation is a serious problem in Ethiopia and is one of the causes of low agricultural productivity, food insecurity and rural poverty. It is thought unlikely that extreme poverty can be eradicated without addressing land degradation, and productivity gains will be reversed unless long-term deterioration in soil fertility and soil erosion are tackled. The government’s commitment to reversing land degradation can be seen through the CRGE and the ambitious land degradation neutrality targets it has set, to be reached by 2040. In addition, the Nationally
Determined Contributions (2015), REDD+ strategy (2016-2030) and National Forestry Sector Development Programme (2018-2027) promote sustainable agriculture. Although there appears to be less confusion between the pathways of conventional versus sustainable intensification in Ethiopia, the Ministry of Agriculture is said to be not doing enough to tackle land degradation and the government’s fertiliser policy envisages a tripling in fertiliser use. In practice, farming relies heavily on inorganic fertiliser, high dosages of agrochemicals and very limited use of crop rotations, pointing to a gap between policy and implementation.

**Risks and benefits from low external input, low productivity agriculture**

In all three countries and across agricultural policies, there is both the commitment to increase fertiliser use and to implement sustainable agriculture, with little consideration of the trade-offs between these two approaches. There is also little discussion as to how sustainable agriculture, agroforestry or CSA will increase food production, although studies have found CSA in Ghana to be beneficial, having a positive and significant impact on the livelihoods, production and incomes of farmers. There is a risk, however, that, where high intensity farming is replaced with low intensity regenerative practices, and at large scale, national food production will reduce because of the overall lower levels of productivity. In Ethiopia, it is acknowledged that CSA is only beneficial if it takes place on degraded landscapes, not when displacing forests. Promoting sustainable agricultural practices may also fail to address the economic needs of subsistence farmers, who may have to mine their soils and overall natural resource base to satisfy the family’s immediate food and income needs.

Overall, it is a concern that policies and state-supported programmes, such as input subsidies, price guarantees and the development of large commercial farming areas, may continue to promote external input-heavy agricultural systems for short-term economic gains, and that the sustainable agriculture agenda, which emphasises long-term benefits and requires initial investments of resources and skills, will remain a secondary strategy. In other words, there is a risk that the commitment to increasing production here and now will continue to override longer-term environmental concerns. In Zambia, for example, adoption of green economic and industrial growth is being driven by international donors, but policy commitments to CSA and sustainable intensification have not yet fully translated into practice and implementation.
Reducing greenhouse gas emissions

Each country has a goal to reduce overall GHG emissions (see Table 5).

Table 5. Nationally Determined Contributions for each country

<table>
<thead>
<tr>
<th>Percentage reduction in GHG emissions as per NDC</th>
<th>Ethiopia</th>
<th>Ghana</th>
<th>Zambia</th>
</tr>
</thead>
<tbody>
<tr>
<td>68.8%</td>
<td></td>
<td>45% (to 87% with international support)</td>
<td>25% (to 47% with international support)</td>
</tr>
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</table>

In Zambia, the target is to reduce GHG emissions by 25% with limited international support, or 47% conditional on the receipt of US$35 billion of international assistance, against a baseline year of 2010. Ethiopia’s NDC aims to reduce projected Business As Usual (BAU) emissions by 68.8%, cutting carbon emissions by 255 million tons CO2e per year by 2030. Ghana’s NDC policy intends to generate absolute GHG emission reductions of 33.1 MtCO2e (or 45% of BAU emissions to 2030) or 64 MtCO2e, dependent on receiving financial support.

Each country is taking steps to achieve this, developing policies and mainstreaming climate change mitigation across existing policies, programmes and projects. In Zambia, the National Policy on Climate Change (2016) promotes the adoption of CSA technologies and landscape-based livelihoods diversification in order to reduce GHG emissions. Sustainable forest management, sustainable agriculture and renewable energy and energy efficiency are the three pillars comprising the plan, which is to be implemented in Zambia’s six major watersheds (Tanganyika, Luapula, Chambeshi, Luangwa, Kafue and Zambezi). Ghana’s National Climate Change Policy (2013) and Ghana’s REDD+ strategy (2016-2036) aim to increase carbon sinks and increase tree cover through plantation development, afforestation, reforestation and forest restoration, as well as conserving trees on farms. Under Ethiopia’s CRGE are plans to intensify farming to reduce demand for additional land, create new agricultural land on degraded areas and introduce lower-emissions agricultural techniques such as carbon- and nitrogen-efficient crop cultivars and organic fertilisers in order to limit soil-based emissions from farming and reduce the pressure that expansion of farmland places on forests.

However, each country is also pursuing policies that could undermine efforts to reduce GHG emissions, perhaps because mainstreaming climate change has not come into effect. A policy disconnect between reducing and increasing GHG emissions may also be due to ministerial siloes, preventing a broader view of trade-offs between sectors, or perhaps because climate change mitigation, an international agenda, loses out to national priorities such as economic and industrial development. In Ghana, climate change is notably missing from national agricultural policy. In Zambia, climate change is only briefly mentioned in the second National Agricultural Policy, and the focus is on raising awareness and monitoring the impacts of climate change. In Zambia, plans to significantly increase livestock herds and convert land to farming would mean Zambia is unlikely to meet GHG reduction targets. There appears to be a significant trade-off in policy objectives between targets to increase agricultural and livestock production and targets to reduce
GHG emissions. Higher fertiliser use, more intensive farming, expansion of commercial agriculture and increases in livestock herd sizes and area could undermine both climate change adaptation and mitigation goals. Livestock emissions, for example, are estimated to account for over 40% of Ethiopia’s total emissions, and given that the cattle population is expected to increase, livestock emissions in 2030 are also expected to almost double (from 65 Mt CO2e in 2010 to almost 125 Mt in 2030). These potential conflicts are acknowledged to some degree, but solutions to mediate the trade-offs are either lacking or unrealistic, ie a switch to chicken consumption over red meat in the short term. Overall, a commitment to reducing GHG emissions is lacking in sectoral policies that are driving climate change as well as impacted by its effects. Pressure to conform to the values of donors who provide important resources, and who may prioritise climate change mitigation, is then at odds with the need for national economic development (and climate change adaptation). Climate change mitigation may well be side-lined if it endangers economic growth, which given the relatively low emissions of these three countries may be justified. The three pillars of CSA (increasing agricultural productivity, adapting to climate change and reducing emissions) are acknowledged to cause synergies and trade-offs and need to be balanced according to context, which will require consistent policies across the agricultural, food security and climate change sectors.

The role of diversification

The gap between policy objectives and reality on the ground is particularly stark when looking at objectives to diversify agricultural production. In the case of Zambia, policies including the seventh National Development Plan (2017), Second National Agricultural Plan (2016) and Climate Smart Agriculture Investment Plan (2019) reflect an intention to diversify agriculture both in terms of the crops grown and those consumed. Yet, in practice, maize production accounts for 57-70% of the country’s cropland, and an estimated 70% of smallholder farmers grow just three crops, with 20% of these growing only one crop. The central role of maize in agricultural policy reflects its importance for food security, but it is also said to be preventing efforts to develop a diversified agricultural system from emerging. Although agricultural policies indicate the importance of agricultural diversification, the continuation of input subsidies for maize and government purchase of maize at guaranteed prices through the Food Reserve Agency creates political and financial incentives for farmers to keep producing maize with inorganic inputs.

Similarly, in Ethiopia, dietary diversity is a key component of plans to improve the nutritional status of the population, as stated in the Nutrition Sensitive Agriculture Strategy (2017-2021). According to the National Food and Nutrition Policy (2018), however, 50% of households receive their calorie needs from starch staples, and cereals account for about 70% of agricultural GDP. To date diversification has not been pursued to any great degree and agriculture’s role in nutrition security is thought to have been inadequate. There are calls in policy to make it a requirement...
of agricultural development programmes to demonstrate how they are also contributing to diversification.\textsuperscript{180}

In Ghana, diversification is discussed in terms of diversified land use practices in the National Climate Smart Agriculture and Food Security Action Plan (2016-2020), and in terms of dietary diversity as an important component of food security in the medium-term National Development Policy (An Agenda for Jobs, 2017-2024). Unlike Zambia and Ethiopia, these objectives are reflected in the presidential Planting for Food and Jobs campaign, which targets 12 crops, including a variety of vegetable and root crops, and provides fertiliser and seed subsidies, marketing and extension support and job creation.\textsuperscript{181} Whether purely a policy objective or operating in practice, pursuing crop diversification may impact the land footprint of agriculture, as many of these crops require larger areas of land to produce the same amount of calories as starchy staples. Missing in policy, in all three countries, is an assessment of the links between diversification, land, diets and overall production.
Notes and References


https://symposium.havens.city.ac.uk/_data/assets/pdf_file/0018/7643_Brief-5_Policy_coherence_in_food_systems_2021_SP_AW.pdf


76 Kalaba, FK (2016) Barriers to policy implementation and implications for Zambia’s forest ecosystems. Forest Policy and Economics. 69: 40-44.
100 “Whilst there has been an expansion in the cropped area in recent years, and the intensively settled areas of the highlands are virtually 100 per cent cultivated, Ethiopia still has large areas of arable land that are not used for crop production, but could be developed for largescale commercial farming...On the basis of projections included in the FYGTP most of the incremental production from the smallholder sub-sector is expected to come from yield improvements, whilst in the commercial sector area, expansion will be the main source of growth.” (Federal Democratic Republic of Ethiopia. Ministry of Agriculture and Rural Development (2010) *Agricultural Sector Policy and Investment Framework (PIF)* (2010-2020)., p.17).
Zambian farm blocks: A vehicle for increased private sector investments. 

Open Agriculture. 5(1).


https://doi.org/10.1016/j.foodpol.2016.05.006; Middleberg, SL, van der Zwan, P and Oberholster, C (2020) Zambian farm blocks: A vehicle for increased private sector investments. Open Agriculture. 5 (1).


For further details on this risk, see for example Adolph, B, Franks, P and Dereje, K (2022) More agricultural intensification, more deforestation? Recognising the risk of profitability-driven expansion of cropland in the Ethiopian highlands. London: IIED. 


In the recent past, annual wood demand from plantations has been rising as a result of increased activities in the mining and construction sectors. The rising wood demand has not been matched by a proportionate increment in areas planted. This has led to wood deficit from forest plantations thus exerting a lot of pressure on indigenous forests. While plantations are not encouraged under REDD+, for Zambia these are considered important in reducing pressure on indigenous forests that REDD+ would be predicated on.” (Republic of Zambia (2015) National REDD+ Strategy, p.11).


176 “The major focus of the agriculture sector remains national food security through staple food production, normally equated in political rhetoric with maize self-sufficiency. While the Second National Agriculture Policy may address this, agricultural production in Zambia has been heading away from making diverse and healthy diets available; available calories from legumes, fish, eggs, and milk reduced from already low levels between 1971 and 2011; there is no change in the very low availability of calories from fruit and vegetables or meat; and the availability of fats, oils and starchy foods has doubled” (Mwanamwenge and Harris, 2017, p.3) – Mwanamwenge, M and Harris, J (2017) Agriculture, food systems, diets and nutrition in Zambia. Sustainable Diets for All: Hivos and International Institute for Environment and Development.
179 “Though diversification was part of the Ethiopian investment policy framework 2010/11-2019/20, the agricultural and livestock and fishery sector focused primarily on increasing productivity, market-oriented production of cash crops with minimum consideration of expansion of diverse food availability and overall nutrition security. Agriculture and livestock contribution to nutrition so far has been limited as the dietary diversity of the population is very low (Federal Democratic Republic of Ethiopia. 2016. National Food and Nutrition Policy, p.4); Goshu, D, Kassa, B and Ketema, M (2013) Measuring diet quantity and quality dimensions of food security in rural Ethiopia. Journal of Development and Agricultural Economics.
Managing competing objectives of sustainable development at local, national, and global levels is a major challenge for governments. Achieving policy coherence is critical to balance the competing demands of conserving critical natural habitats and other forms of land use.

This report summarises an analysis of national agriculture, land use, climate change, biodiversity conservation and forest policy coherence in three African countries: Ethiopia, Ghana, and Zambia. The aim of the study was to understand the general nature of coherence, as well as the underlying objectives of each country’s national policies; to identify synergies and disconnects between objectives; and to increase knowledge of how these synergies and disconnects may affect policy development and implementation.

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