

Policy pointers

African governments and their partners face two competing commitments under the Sustainable Development Goals: rapidly boosting domestic food production to achieve and maintain food security, and halting deforestation.

Agriculture policymakers should ensure that targets for increasing crop yields through agricultural intensification are realistic, taking into account sustainability considerations and climate risk, and spatial variability.

Forest policymakers should put greater emphasis on mitigating the negative impacts of inevitable deforestation in the coming years, through land use planning informed by spatial analysis of key trade-offs.

Policy responses need to be better coordinated across sectors and integrated with national development plans, and take governance and political economy constraints more into account.

Managing trade-offs between growing food and conserving forests in sub-Saharan Africa

Governments in sub-Saharan Africa face a dilemma: how to reconcile pledges to feed fast-growing populations with forest conservation? Under Sustainable Development Goal 2 (end hunger, achieve food security etc), African countries aim to fully meet domestic food demand by 2030 — projected to be 70 per cent higher than in 2010. At the same time, under Sustainable Development Goal 15 (sustainable use of terrestrial ecosystems etc), countries aim to reduce and then halt deforestation, which, in sub-Saharan Africa, is mainly driven by the need to grow more food. Since imports, waste reduction and yield increases are rarely sufficient to meet future food demand, agriculture will continue to expand at the expense of forests.¹ Based on research in Ethiopia, Ghana and Tanzania, this briefing provides pointers towards better managing the inevitable trade-offs, emphasising the importance of addressing governance and political economy issues alongside technical aspects.

Competing demands: food vs forest

With fast growing populations and steadily growing economies, Ethiopia, Ghana and Tanzania, like many other sub-Saharan African countries, will see a near tripling of food demand by 2050 (with reference to 2010) (Table 1).¹ Historically, these countries have met growing food demand primarily by expanding the area under cultivation, rather than increasing yields. In all three countries, staple food crops, and in particular cereal crops, have driven this expansion. In Ethiopia, the increase in area of cereals over the period 2001–12 was seven times that of the main export crops (coffee and sesame).² In Tanzania, the area under cereal cultivation increased 11 times more than that of

the main export crops (tea, cashew, coffee and tobacco). Even in Ghana, where there has been rapid expansion of the country's primary export crop cocoa, cereals have expanded by an additional five per cent over the same period.³ This agricultural growth has largely been at the expense of forests. In Ethiopia, 80 per cent of new agricultural land came from the conversion of forests in the period 2000–8.⁴ In Ghana, agricultural expansion accounted for 50 per cent of total deforestation in the same period.⁵ Comparable figures are not available for Tanzania but agricultural expansion is considered the primary driver of deforestation.⁶

All three countries have achieved steady yield increases for cereals in recent years, but the rate of increase is not sufficient to meet increasing

The inevitable consequence will be further major losses in forest area and associated forest ecosystem services

food demand. The inevitable consequence will be further major losses in forest area and associated forest ecosystem services, which will in turn adversely affect agriculture and other sectors.

However, the scale and impact of these forest losses — and the associated trade-offs — will vary greatly depending on where they take place, which is why spatial analysis is so important. There is also an important social dimension

to this picture, since the loss of forests can have major negative impacts on communities, particularly where the beneficiaries of forest conversion are not the people who were benefiting from forest ecosystem services, eg when land is acquired for large-scale commercial agriculture.

Food and forest policies on a collision course?

All three countries aim to reduce reliance on food imports and increase food exports in the agriculture sector. The default policy response has often been to increase crop yields in order to reduce the need to expand land under cultivation.

For example, the government of Ethiopia plans to meet growing food demand by increasing cereal yields by 47 per cent over the period 2016–20. This may be possible, but such a growth rate cannot be sustained. It therefore seems inevitable that there will be further expansion in the cropped area through forest conversion as the government, quite rightly, keeps the right to food at the top of their development agenda. Increasing yields per hectare (ha) can also serve as an incentive for further area expansion where intensification increases profits per ha.⁷

In the forest sector, all three countries are implementing programmes to reduce deforestation and forest degradation (REDD+), but these pay relatively little attention to staple food crops as a driver of deforestation. Furthermore, all three countries have set ambitious goals for tree planting: Ethiopia aims to increase forest cover by 5.4 million ha (4.5 per cent of total land area) between 2015–2020;⁸ Tanzania aims to plant 3.1 million ha of trees (4.2 per cent of total land area) between 2016–2035;⁹ Ghana aims to plant 0.6 million ha (2.5 per cent of total land area) of forest plantations between 2016–2040, and the priority area for forest plantation is also the main region for maize production.¹⁰

Table 1. Food and forest — key facts

		Ethiopia	Ghana	Tanzania
Economic growth	(% GDP growth 2014)	11%	7%	7%
Population	Population (million, 2015)	99.4	27.4	53.5
	Population density (person/ha)	0.89	1.14	0.60
	Projected population change between 2015–2050	189%	182%	156%
	Population in urban area (2015)	19.4%	54%	31.6%
Domestic food demand	Key staple food crop	Cereals (teff, wheat, maize, sorghum and barley)	Cereals, roots and tubers. The main cereal crop is maize	Maize followed by rice, beans, cassava, sorghum and wheat
	Projected domestic cereal demand increase between 2010–2050	162% (2.62x)	171% (2.71x)	150% (2.5x)
Land use	Total land area (million ha)	112	24	89
	Agriculture land (% of total)	15.2%	32.8%	11.4%
	Cereal (% of total)	9.3%	6.8%	7.2%
	Forest land (% of total)	15.5%	37%	53.9%

A bleak future for forest biodiversity

Policies in both the forest and agriculture sectors prioritise economic development. Trees on farm will increase carbon stocks and may improve crop yields, but do not have the same value in terms of biodiversity and other ecosystem services. Where biodiversity is promoted, the potential to generate income through eco-tourism and other direct income-generating opportunities is generally the priority. The intrinsic value of biodiversity and associated ecosystem services is often not emphasised in policies, and the government agencies who champion biodiversity often have limited political influence and funding.

Small-holder farmers should not be blamed

Despite the rapid expansion of large-scale commercial agriculture, it is a fact that small-holder farmers are responsible for much of the conversion of forests as they seek the soil nutrients to produce the crops they need to realise their right to food and other basic human rights. Technological alternatives exist, including both the use of external inputs and agroecological practices with zero external inputs, but small-holders in many parts of sub-Saharan Africa have no access to these due to poor extension services, poor infrastructure, and market failures and/or little incentive to invest in them due to insecure land tenure. The power and duty to resolve these problems lies primarily with national governments, although the international community also has a key role to play, particularly in relation to climate change mitigation and adaptation.

Beyond technology

While there is no shortage of technologies that might assist in reconciling the competing demands of food production and forest conservation, seemingly promising approaches have in many cases failed to live up to expectations. To understand why, we have to look beyond technology into organisational arrangements, governance and issues of political economy (see Box 1).

Siloed sectoral planning with competing objectives and little accountability. While governments may aspire to draft coherent cross-sectoral policies, in practice the process may amount to little more than the collation of various sectoral targets. Different ministries promote their mandates with few opportunities to consider how they might align with other sectors, leading to a plethora of priorities and, at times, incompatible targets in all three countries. At the implementation stage, political pressures have often triumphed

over evidence-based advice. In addition, mechanisms to hold government agencies to account over agreed targets are often weak. High turnover of staff in government agencies due to low salaries leaves gaps in institutional memory that can further limit accountability.

Lack of funding for implementation. Even when sound policies are in place, many African countries face serious budgetary constraints in implementation. In Ethiopia, for example, the Climate Resilient Green Economy (CRGE) strategy is the only cross-sectoral policy that acknowledges the necessary trade-offs between the forest and agriculture sectors, and identifies strategic cross-sectoral actions for sustainable economic development. Fully implementing the CRGE will require US\$150 billion over 20 years, but between its inception in 2011 and 2016, only US\$50 million had been mobilised. Given limited budgets, it is vital to adopt strategic and coherent policy priorities to avoid the risk that resources may be spread too thinly across large numbers of initiatives that may never be adequately implemented. In Ghana and Tanzania as well as Ethiopia, local governments often bear responsibility for implementing land use policies, and they will need adequate budgetary support from the centre to do so.

Information barriers. Limited public information on land ownership by private sector investors (domestic and foreign) and how the land is used hinders efforts to monitor and manage the environmental and social impacts of agricultural production. This is largely due to a lack of transparency (especially for foreign investment) and a lack of monitoring capacity. Despite the progress made under REDD+, there is still a lack of reliable information on deforestation rates and spatial information on the areas where deforestation and threats to biodiversity are most severe. This is due to a combination of: the limitations of remote sensing technology; lack of capacity to collect field data; and, in some cases, transparency issues. Reliable, spatially disaggregated information on biodiversity, and forest ecosystem services and deforestation patterns is vital for prioritising conservation efforts and better managing agroenvironmental trade-offs.¹¹ Although some public information is available on land ownership and land use priorities, it is often ambiguous or unclear. In Ghana, for example, the concept of ecological zones is frequently used in policymaking and research. However, different sectors and different stakeholders within the same sector often classify ecological zones differently, making it difficult to align policy targets or arrive at a nuanced understanding of the agricultural drivers of deforestation.

Box 1. What is Political Economy?

Political economy is the study of both politics and economics, and specifically the interactions between them. It focuses on power and resources, how they are distributed and contested in different country and sector contexts, and the resulting implications for development outcomes.

World Bank, 2011, How-to Notes: Political Economy Assessments at Sector and Project Levels.

Land use planning: a starting point for managing trade-offs

For African governments seeking to mitigate the impact of forest conversion, land use planning informed by spatial analysis of key agroenvironmental trade-offs will be an essential tool. A participatory and cross-sectoral land use planning process at national level can help facilitate discussions on necessary trade-offs between agricultural production and conservation, and lead to shared national priorities that can guide regional and local land use planning and decision making. There are emerging opportunities in all three case study countries.

Ethiopia is currently embarking on a major new land use programme that will support integrated planning processes from national to village level. Ghana has introduced a new land use law that requires all district governments to have land use plans, while the REDD+ strategy calls for a holistic and effective land use plan at national level.¹² Tanzania has rich experiences in village-level land use planning that a national process could build on. However, this approach will only work if it can be rolled out across entire agricultural/forest landscapes, and processes are designed to reconcile any differences in national and local priorities. Land use planning and associated spatial analysis must also address the negative social impacts of forest conversion as part of any strategy to minimise and effectively mitigate these impacts.

The importance of political economy

Our research has shed light on some of the incentives and constraints faced by key state actors, for example: recent institutional changes have led to unclear mandates and weak collaboration between the ministries responsible for agriculture and forests in Ethiopia; no

government agency has the mandate and incentives to protect the 17.3 million ha of forests in Tanzania that lie outside of parks and reserves; and in Ghana, export commodities such as cocoa, shea nut and coffee are managed by the Ministry of Finance and enjoy better research and extension services than staple food crops.

In Ghana and Tanzania, another key factor is a strong perception that there is plentiful unutilised land for future agriculture expansion. In Ghana, 58.8 per cent of land is classified as agricultural land and only 55.8 per cent of this is cultivated.¹³ In Tanzania, 49.4 per cent of land is considered arable land but only 24 per cent is cultivated.¹⁴ However, it is very unclear how much of this land overlaps with forests or is degraded, and much of the supposedly 'unutilised' land may have contested ownership or may be used by other key stakeholders on a seasonal basis (eg by pastoralists).

In all three countries, the question arises of how to get the buy-in of key actors who may have little reason to worry about deforestation and loss of biodiversity. For example, local governments may have little interest in national and global priorities, while politicians know that voters tend to judge them mainly on short-term development outcomes rather than longer-term sustainability issues. Like the narrative of unutilised lands, these are issues of political economy that our research has only touched upon. These issues are well beyond the scope of technological fixes, and even most organisational development and governance initiatives, yet they will prove fundamental to success in managing the trade-offs between food production and forest conservation in sub-Saharan Africa.

Phil Franks and Xiaoting Hou-Jones

Phil Franks is a senior researcher in IIED's Natural Resources Group. Xiaoting Hou-Jones is a researcher in IIED's Natural Resources Group.



Knowledge Products

The International Institute for Environment and Development (IIED) promotes sustainable development, linking local priorities to global challenges. We support some of the world's most vulnerable people to strengthen their voice in decision making.

Contact

Phil Franks
phil.franks@iied.org

80–86 Gray's Inn Road
London, WC1X 8NH
United Kingdom

Tel: +44 (0)20 3463 7399
Fax: +44 (0)20 3514 9055
www.iied.org

IIED welcomes feedback via: @IIED and
www.facebook.com/theiied

This briefing was funded by UK aid from the UK Government. The Ethiopia component of the research was funded by The David and Lucile Packard Foundation. However, the views expressed do not necessarily reflect the views of the UK Government or Packard Foundation.



The authors would like to acknowledge the contribution of our research partners — Elijah Danso (Ghana), Charles Meshack (Tanzania), and Daniel Fikreyesus, Messay Sintayehu and Simret Mamuye (Ethiopia) — in collecting the information on which this briefing is based.

Notes

¹ Hou-Jones, X and Franks, P (2015) Food vs Forests in sub-Saharan Africa: a challenge for the SDGs. IIED, London. <http://pubs.iied.org/17322IIED> / ² Ethiopia Country Statistics (2016) www.countrystat.org / ³ Food and Agriculture Organisation (2016) FAO statistics www.fao.org/faostat/en / ⁴ Ethiopia REDD+ Readiness Preparation Proposal (2011) www.forestcarbonpartnership.org/ethiopia / ⁵ Ghana REDD+ Readiness Preparation Proposal (2010) www.forestcarbonpartnership.org/ghana / ⁶ Kweka D, et al. (2015) The context of REDD+ in Tanzania: Drivers, agents and institutions. Occasional Paper 133. CIFOR, Bogor, Indonesia. / ⁷ Byerlee, D et al. (2014) Does intensification slow crop land expansion or encourage deforestation? Elsevier, Philadelphia. www.sciencedirect.com/science/article/pii/S221191241400011X / ⁸ Ministry of Environment, Forest and Climate Change, Ethiopia (2016) Briefing on the Milestones of the National Tree-based Landscape Restoration Potential Mapping. / ⁹ Ghana Forestry Commission (2013) Draft Ghana Forest Plantation Strategy: 2015-2040. / ¹⁰ United Republic of Tanzania (2016) National Tree Planting and Management Strategy 2016-2021 (draft). / ¹¹ Bower, S et al. (2016) Understanding agricultural drivers of deforestation through remote sensing: opportunities and limitation in sub-Saharan Africa. IIED, London. / ¹² Ghana Forestry Commission (2015) National REDD+ Strategy. / ¹³ Ghana Ministry of Food and Agriculture (2015) Agriculture in Ghana: Facts and Figures 2013. / ¹⁴ United Republic of Tanzania (2014) State of Environment Report.