

Policy pointers

The role of agriculture as a driver of deforestation needs to be understood and addressed in the unique development context of sub-Saharan Africa.

Recognising the existence of trade-offs in SSA between the goals of ending hunger — which will require clearing forest for agriculture — and halting deforestation is a crucial first step.

Smallholders dominate the agriculture sector in SSA, and engaging with them is essential for meeting future food demand and minimising forest loss.

Approaches such as cross-sectoral multistakeholder dialogues and spatial mapping will be important in understanding conflicts between food and forest policies.

Food vs forests in sub-Saharan Africa: a challenge for the SDGs

Domestic food supply in sub-Saharan Africa (SSA) will need to triple in the next 35 years. But SSA countries have also committed to reducing or halting deforestation. The tripling of food supply cannot be achieved solely through imports, waste reduction and yield increases — in certain circumstances, yield increases could even drive deforestation. Agriculture will therefore continue to expand in SSA, at the likely expense of forests, and trade-offs between the Sustainable Development Goals (SDGs) of ending hunger and conserving forests need to be recognised. Efforts to manage these trade-offs will require an understanding of the unique characteristics of SSA and their implications for food and forest policies.

SDGs, food and forests in sub-Saharan Africa

The UN General Assembly adopted the 2030 Agenda for Sustainable Development, with its 17 SDGs, in September 2015. In so doing, it sets an ambitious development agenda, pledging that “no one will be left behind”. In SSA, with its fast-growing population, even faster-growing food demand and increasing pressure on almost all ecosystems (including forests), achieving both SDG 2 (on ending hunger, among other things) and SDG 15 (on forest conservation, among other things) will be especially challenging.¹

Domestic food demand to triple by 2050.

The population of SSA is set to more than double in the next 35 years, from 937 million people in 2014 to 2.1 billion in 2050,² a much higher rate of growth than in any other region. The combination of a growing population and forecast continued economic growth is expected to increase domestic food demand at least threefold between 2014 and 2050.³

This brief uses cereal demand to illustrate the issues posed by increasing domestic food demand

in SSA. In Africa, cereals provide, on average, about 50 per cent of per capita calorific intake, and are also used as feed for livestock.⁴

Cereal consumption in Africa is growing by 2 per cent per year,⁵ and this is likely to increase as the SSA population becomes more affluent over time and consumes more meat, the production of which will increasingly use cereals as feed. According to the International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT), total cereal demand will increase to 393.6 million metric tonnes by 2050, 2.4 times the demand today.⁶ This projection may even be conservative because it assumes a population of 1.7 billion people in 2050, 0.4 billion fewer than projected by the UN.²

Increasing pressure on forests and biodiversity. Africa is home to 25 per cent of the world's remaining rainforests⁷ and 17 per cent of all forests,⁸ and these provide habitat for much of the region's biodiversity. But the continent lost an estimated 15.6 million hectares of forest between 2010 and 2015,⁹ driven largely by agricultural expansion.

Rising food demand in SSA means expansion of agricultural land will continue, at the likely expense of forests

The role of agriculture as a driver of deforestation needs to be understood and addressed in the unique context of SSA. Unlike in Amazonia and Southeast Asia, most agricultural expansion in

SSA is in the smallholder sector, and smallholders often lack the means to increase productivity on existing land. Smallholder farms of 2 hectares or less represent 80 per cent of all farms in the region and, in some countries, contribute

up to 90 per cent of production.¹⁰ Moreover, most agricultural production is consumed domestically. The land share allocated to export-oriented cash crops in SSA declined from 16.5 per cent in the 1960s to 12 per cent in the 2000s.¹¹

Rhetoric and realities

Many countries in SSA have made ambitious commitments to reduce deforestation and forest degradation. For example, seven countries in SSA, as well as Nigeria's Cross River State, endorsed the New York Declaration on Forests, which aims to halve the loss of natural forests by 2020 and to end deforestation by 2030.

Eighteen countries in SSA are participants in REDD+ programmes, requiring a commitment to reduce deforestation and forest degradation and improve forest management.¹² What implications do such commitments have for food security? Can SSA countries simultaneously deliver on SDGs 2 and 15?

Four main supply-side measures can be taken to meet the expected tripling of food demand in SSA in the next 35 years: increase imports; reduce losses along the value chain; increase production per unit area (yield); and expand the agricultural area.

1. Increase imports: expensive and risky.

About 40 per cent of the SSA population lives in landlocked countries, compared with 7.5 per cent in all other developing countries combined. Exports and imports in landlocked countries are expensive, with transportation costs constituting as much as 77 per cent of the total value of exports from landlocked countries in SSA.¹³

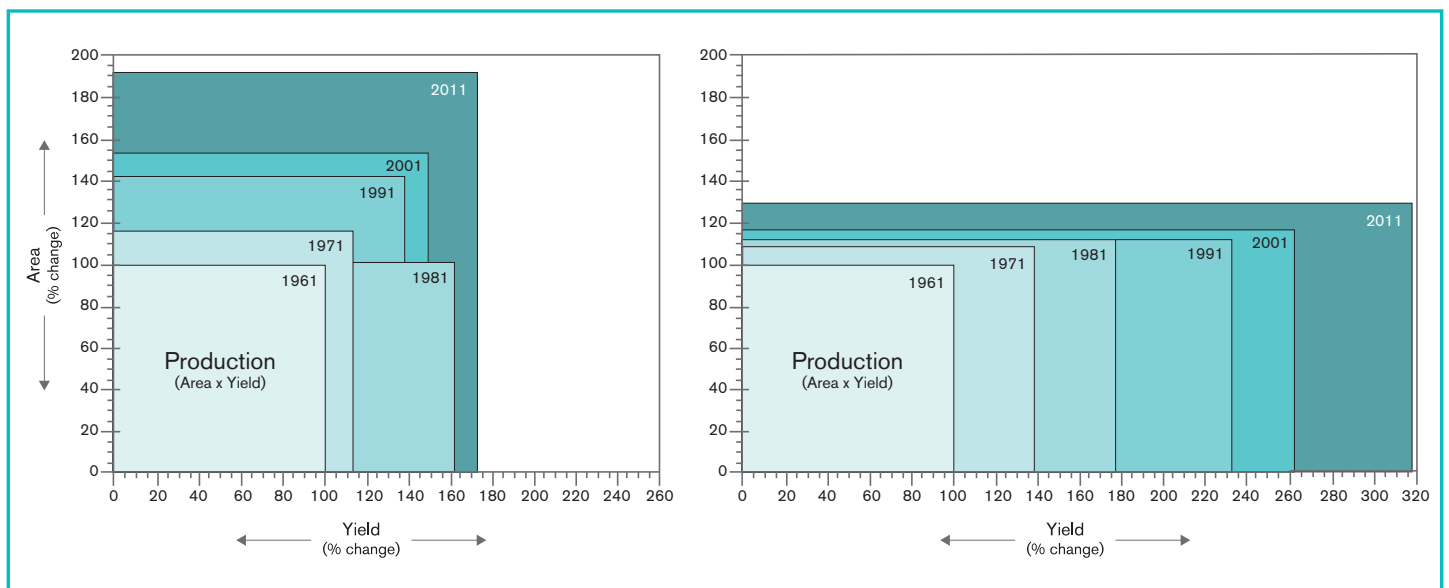
SSA has a growing trade deficit in agriculture. Most imported agricultural commodities are staples (predominantly wheat and rice) and, on average, 20 per cent of the subregion's cereal requirements are imported.¹¹ SSA has considerable potential to increase the production of cereals (with the exception of wheat, for which only about 1 per cent of the land is suitable), thereby replacing imports.¹⁴

Households in SSA spend, on average, about one quarter of their incomes on cereals.⁴ People with a high dependency on staple food imports are vulnerable to fluctuations in global food prices and foreign exchange. For example, several SSA countries experienced social unrest when rice and wheat prices reached record highs in 2007–08.¹¹ In times of tight food supply, poorer countries may not be able to compete with richer nations — such as China — that are also increasing their food imports. A greater reliance on imports in SSA to meet demand would threaten food security and risk missing out on rural development opportunities.

2. Reduce losses in value chain: important but limited. Post-harvest food losses are high in SSA: 15–20 per cent of cereal production is lost post-harvest, and the proportion is even higher for perishable products.¹⁵ There is considerable scope, therefore, to reduce post-harvest losses. Nevertheless, the volume of food lost in the overall value chain in SSA is the lowest in the

Figure 1: Change in cereal production in sub-Saharan Africa (left) and Asia (right) due to changes in area and yield (1961 = 100)

Source: FAO



world: for example, 40 per cent of food waste in developed countries occurs during distribution and consumption, but little food is wasted in these phases in SSA. As the SSA population shifts increasingly to urban environments and as retailing and consumption patterns change accordingly, the level of waste at the retail and consumer levels is likely to increase, potentially offsetting gains in post-harvest waste reduction.

3. Increase yields: no magic bullet. Policies on REDD+ and agriculture in SSA countries emphasise the need to increase crop yields as a way of boosting production and thereby reducing agricultural expansion at the expense (for example) of forests. However, average cereal yields have increased at a much slower pace in SSA than in Asia (Figure 1) and Latin America. In a business-as-usual scenario, yield is expected to continue increasing only slowly in SSA: massive investment is needed in rural infrastructure, institutions, technology transfer and climate change adaptation to increase and maintain yields, and this is likely to be forthcoming only gradually.¹⁶ In any case, increases in yield may not reduce pressure on forests: recent studies have shown that increased profitability as a result of increased yield can act as an incentive to expand cropland. In forest frontiers, where governance is often weak, yield increases are more likely to increase rather than decrease agricultural expansion and deforestation.^{17, 18}

4. Food and forest policies: on a collision course? Given the limited scope for meeting rising food demand in SSA by increasing food imports, reducing food waste and increasing yields, the expansion of agricultural land is likely to continue. Does this mean that food security and forest conservation are in conflict in SSA?

There are indications that they are. The Netherlands Environmental Assessment Agency's IMAGE model projects a 29 per cent reduction in forest cover in SSA by 2030 as a result of agricultural expansion. The World Wide Fund for Nature identifies the Congo Basin and East Africa as two of 11 deforestation fronts globally and agricultural production as a key driver of deforestation there; it projects losses of 12 million hectares in both East Africa and the Congo Basin by 2030. These projections of agricultural expansion appear to conflict with ambitions to deliver on REDD+ and, in some countries, with commitments to halt deforestation by 2030.¹⁹

But such conflict is not addressed in policies on forests and agriculture in SSA. National REDD+ strategies consistently list agricultural expansion as a key driver of deforestation, but they do not address the potential for REDD+ to reduce the capacity of countries to meet domestic food

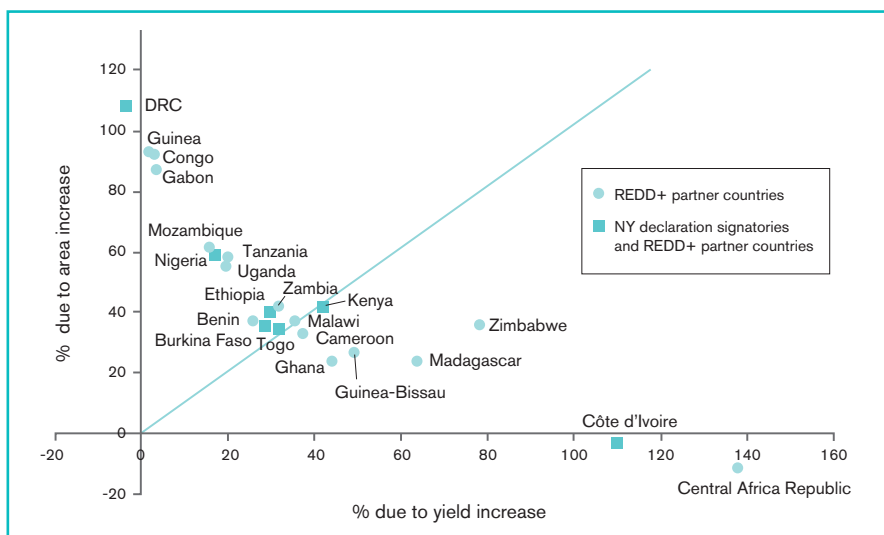


Figure 2: Changes in cereal production due to changes in yield and area, 1980–2013

Note: Liberia is excluded because both total production and area of production declined significantly over the period. Source: FAO and PBL

demand. On the other hand, national agricultural policies recognise the need to produce more staple foods but do not consider the impact this might have on forests.

The cause of these policy conflicts needs further investigation. Is it a lack of communication between the forest and agriculture sectors? Is it the unrealistic expectation that increasing crop yields can alone solve the problem and thereby avoid serious trade-offs? Has the global narrative on the role of export commodities as a deforestation driver overshadowed the importance of staple food production in SSA? Or is it a combination of these and other factors?

The extent of agricultural expansion and its potential conflict with forest conservation varies hugely among SSA countries according to political, economic, demographic and ecological factors. Nevertheless, most countries with ambitions to conserve their forests have, to date, increased agricultural production more through expanding agricultural land than through gains in yield (Figure 2). There is an urgent need to understand the potential trade-offs between food production and forest conservation and for greater coherence among the land-use sectors in policy, planning and implementation.

Towards “win more, lose less” scenarios

SSA presents a unique context for sustainable development (Box 1). Understanding the potential trade-offs between the SDGs in SSA, and negotiating those trade-offs, can help in developing an inclusive and sustainable development path. Some relevant approaches are discussed below.

Cross-sectoral multistakeholder dialogues.

In most SSA countries, a major cause of policy incoherence is a disconnection between the

Box 1: The unique development context of SSA

- High population growth
- Low rural population density but high dependency on agriculture for livelihoods
- Dominated by small-scale farming
- High poverty despite strong economic growth in the last decade
- 40% of population in landlocked countries
- Relatively low production of agricultural exports

planning processes of different ministries within government, and also between government and other key stakeholders. There is a strong need, therefore, to make self-sustaining connections among land-use sectors and to “mainstream” environmental issues in government policies. A potentially powerful way to start this is through cross-sectoral multistakeholder dialogues, which can be brought together around common national development agendas. Among other things, such dialogues can increase understanding of the specific causes of conflicts between food and forest policies and shape collaborative actions towards coherent land-use policies that explicitly address trade-offs.

Spatial mapping. The implications for food security, and the actors that must be engaged, differ depending on whether staple foods or export commodities are produced. Differing supply-chain approaches — for example, to certification, procurement policies and the role of multinational corporations — are therefore required. The spatial mapping of agricultural commodities and forests can help in understanding the nuanced roles of those commodities as drivers of deforestation, identifying where yield increases may drive further deforestation, and planning approaches for ensuring sustainable practices in supply chains.

Engaging domestic markets. An increasing number of multinational corporations have committed to reducing or eliminating deforestation in their supply chains. But engaging with such corporations is insufficient. Smallholder farms are the predominant means of production in SSA and provide 84 per cent of the total average annual investment in agriculture (when all forms of capital — human, natural, social and

financial — are taken into account).⁸ Engaging with the private sector in domestic food markets, especially small and medium-sized enterprises and smallholder representative organisations, will be crucial for meeting food demand and minimising the negative impacts on forests.

Leave no one behind

The competition between food production and forests can be addressed in various ways, the effectiveness of which will vary in delivering food security, social equity and environmental benefits. For example, large-scale capital and input-intensive agriculture can increase yields but is less effective in addressing equity and ensuring food security for the rural poor. Investment in export commodities can create jobs and diversify the agriculture sector but can compete with staple food production and forest conservation.

The nature of the pathway taken to agricultural development has enormous socioeconomic implications. A rural economy built on goods and services produced by smallholders can deliver broad-based development, but questions remain on how best to achieve both food security and forest conservation. Inclusive sustainable development pathways must address potentially conflicting objectives in ways that support equitable growth. The first steps are to understand the unique situation in SSA and the diversity among SSA countries, acknowledge the inevitability of trade-offs among the SDGs, and put equitable growth at the centre of land-use planning.

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Notes

¹ www.un.org/sustainabledevelopment/sustainable-development-goals. / ² United Nations Department of Economic and Social Affairs, Population Division (2015) World population prospects: The 2015 revision. / ³ Hilderink H et al. (2012) Food security in sub-Saharan Africa: An explorative study. PBL Netherlands Environmental Assessment Agency. / ⁴ Rakotoarisoa MA et al. (2011) Why has Africa become a net food importer? Explaining Africa agriculture and food trade deficits. FAO. / ⁵ Chauvin ND et al. (2012) Food production and consumption trends in sub-Saharan Africa: Prospects for the transformation of the agriculture sector. UNDP Regional Bureau for Africa. / ⁶ Rosegrant MW et al. (2012) International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT): Model description. International Food Policy Research Institute. / ⁷ PROFOR (2012) Forests, trees and woodlands in Africa: An action plan for World Bank engagement. / ⁸ ICRAF (2009) Making Sub-Saharan African forests work for people and nature: Policy approaches in a changing global environment. / ⁹ FAO (2015) Global forest resources assessment: How are the world's forests changing? / ¹⁰ Wiggins S (2009) Can the smallholder model deliver poverty reduction and food security for a rapidly growing population in Africa? Paper for the Expert Meeting on How to feed the World in 2050, Rome. / ¹¹ Schaffnit-Chatterjee C (2014) Agricultural value chains in sub-Saharan Africa: From a development challenge to a business opportunity. Deutsche Bank. / ¹² Reducing emissions from deforestation and forest degradation (REDD) is an effort to create a financial value for the carbon stored in forests. “REDD+” also includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. See: www.un-redd.org/aboutredd. / ¹³ FAO (2009) How to feed the world in 2050: The special challenge for sub-Saharan Africa. / ¹⁴ Livingston G et al. (2011) Sub-Saharan Africa: The state of smallholders in agriculture. International Fund for Agricultural Development. / ¹⁵ FAO (2011) Global food losses and food waste: Extent, causes and prevention. / ¹⁶ Fischer RA et al. (2009) Can technology deliver on the yield challenge to 2050? FAO. / ¹⁷ Byerlee D et al. (2014) Does intensification slow crop land expansion or encourage deforestation? Elsevier. / ¹⁸ CABI and CIFOR (2001) Agricultural technologies and tropical deforestation. / ¹⁹ WWF (2015) Saving forests at risk. *WWF living forests report*.