

Internalisation & biodiversity

Is internalising agricultural production feasible and viability in relation to policy goals to protect biodiversity?

Overview

The EU has set ambitious goals to halt biodiversity loss and degradation of ecosystem services in the EU. Although some progress has been made, the 2015 mid-term review of the Biodiversity Strategy has shown that biodiversity loss and the degradation of ecosystem services have continued. Also at the global level, the EU wants to step up to reduce biodiversity loss and has committed to the Aichi Biodiversity Targets.

At the same time, the EU has ambitions in terms of food production and trade. In 2017, the EU's agri-food trade reached a new record with a total trade value of 255 billion euro [2]. The EU is thereby globally the largest exporter and importer of agri-food products. The global trade in crop and livestock products, however, is shifting production and the associated environmental impacts to other regions. Given the problem of environmental burden shifting, should the EU continue to strive for increasing trade or should it consider to internalise the production of crops that are currently imported from elsewhere? What would be the impact of internalisation on other policy goals such as biodiversity?

In MAGIC, we explore options for internalisation of agricultural production and its impact on biodiversity. This policy brief gives an overview of the options and complexity related to internalisation at the EU level.

What would internalisation entail?

To get an impression of the land needed to internalise what is currently imported and produce these products in the EU, the FAOSTAT database of trade in crop and livestock products was consulted. When we look at the trade of agricultural products in the EU in 2016, the four most consumed products (i.e. import-export) include soybean cake, soybeans, maize and palm oil [3]. These four products account for 42% of the total import in tonnes and 17% of the import value. Because producing palm oil in the EU is not feasible, substitution would be needed and could include rapeseed, soybeans or sunflower seed. **In total, 19 to 26 million hectares would be needed to produce the four main consumed products that are currently imported from outside the EU** (Table 1).

EU BIODIVERSITY STRATEGY GOALS [1]

BY 2020:

- Halt the loss of biodiversity and the degradation of ecosystem services
- Stepping up the EU contribution to averting global biodiversity loss

BY 2050:

- Biodiversity and the ecosystem services it provides — its natural capital — are protected, valued and appropriately restored

ROLE OF AGRICULTURE:

- Increase the contribution of agriculture to maintaining and enhancing biodiversity



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Table 1. EU 28 trade of crop and livestock products and the four most consumed (import-export) products in the EU with the area required to produce these crops.

Product	Consumed (t)	Input/output ratio	Yield (t/ha)	Area required (million ha)
Cake, soybeans	18,277,460	1.20	2.93	7.5
Soybeans	14,336,395		2.93	4.9
Maize	9,679,289		7.11	1.4
Oil, palm	6,374,117		-	5.2 – 12.1 ¹
Total				19 - 26

¹ Area required to substitute palm oil using rapeseed, soybeans or sunflower seed

Land use & biodiversity

Currently the EU28 has a total land cover of 437 million hectares. Internalising the above earlier mentioned main imports would require **4-6% of the EU land cover**. This land, cropland, would be needed in addition to already existing cropland, and would require a conversion from other types of land uses. Converting forest and natural area or grasslands into cropland is, however, associated with substantial loss in species abundance [4]. Alternatively, increasing productivity on existing land could be an option to internalize. Agricultural intensification is, however, considered as one of the key threats to biodiversity and habitat loss as also recognized in the Biodiversity Strategy Mid-term Review.

Replacing exports

When we take another look at the trade balance (import-export), we also find products that are net exported. The four main products are wheat, barley, beer of barley and malt. These products represent 44% of the gross weight of EU exports and 9% of the total export value. Based on average crop yields of the EU, producing these four crops currently requires 7.4 million hectare. Substituting the currently net exported products could contribute 28 – 39% to the internalisation of the four main consumed products. This would, however, have economic implications for international trade.

Key messages

Current imports of crop products to the EU requires a substantial amount of land in other parts of the world. Producing these products within the EU (i.e. internalisation) would involve substantial land use changes associated with biodiversity loss. **Internalisation would jeopardize commitments made to reduce biodiversity loss in the EU.** Global trade currently shifts environmental burdens, including impacts on biodiversity, but also has social and economic consequences. In addition, environmental burden shifting could limit other regions to meet their environmental goals.

This analysis has focused on the main imports and exports, which are based on current consumption and production patterns. **Changes in the production and consumption (e.g. animal sourced food) can have a large impact on the demand for crop products for food and feed.**

References

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