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Europe's land import dependency

New research reveals extent of land imports from outside the EU

Friends of the Earth Europe asbl Rue d'Edimbourg 26 | 1050 Brussels | Belgium
Tel. +32 2 893 10 00 | **Fax** +32 2 893 10 35 | info@foeeurope.org | **www.foeeurope.org**

October 2011

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New research reveals extent of land imports from outside the EU

New research commissioned by Friends of the Earth Europe from Sustainable Europe Research Institute shows the scale of flows of 'virtual land' around the world – this is all the land that has been used to produce traded products. The European Commission's 'Roadmap to a Resource Efficient Europe' has recently called for Europe to measure and manage its global consumption of land [1].

The report calculates the global land footprint due to agriculture and forestry products for all EU countries, and for other countries including the US, Australia, India and Brazil. The findings demonstrates the value of land footprint as an indicator of resource use and provide evidence of the scale of Europe's land consumption and its dependency on land from other parts of the world. The research shows that:

- **Europe is the continent most dependent on imported land**
- **Nearly 60% of the land used to meet Europe's demand for agricultural and forestry products comes from outside the continent.**
- **Six of the top 10 land importing countries/regions are European – Germany, UK, Italy, France, the Netherlands and Spain. Germany and the UK each import almost 80 million hectares a year.**
- **The EU average land consumption is 1.3 hectares per capita, while countries such as China and India use less than 0.4 hectares per capita.**

It can be assumed that the EU's demand for land has increased since 2004 – the year when the most recent data is available. It can also be assumed that it will continue to increase, especially if Europe starts to use more bio-based energy sources such as biofuels and biomass.

1. Introduction

Europe imports massive amounts of food and other goods from the rest of the world every year. We can calculate how many tonnes we import, but what does this mean in terms of the land needed to grow these crops and other products?

This briefing is a summary of the EU-relevant parts of a new major study of the land footprint due to agriculture and forestry products of countries around the world. Land footprint is made up of the land within a country that is used for domestic consumption, plus that which is imported within products such as food and clothing, and minus the land which is used in exports.

The European Commission's "*Roadmap to a Resource Efficient Europe*" [1] has called for Europe's global land consumption to be part of the dashboard of indicators that monitor Europe's resource use. Friends of the Earth Europe and Sustainable Europe Research Institute have been calling for Europe to measure its Land, Water, Carbon and Material Footprints [2].

This study shows that Europe's high consumption levels, and its insatiable appetite for products that require large areas of land for production, such as meat, dairy, timber and

other forestry products, leads to Europe's land footprint being one of the highest in the world.

The export of products produced from a country's land can have beneficial effects on national economies, but it can also lead to land grabbing, biodiversity loss and destruction of people's livelihoods and their control over natural resources. In addition, global inequalities in land use lead directly to inequalities in health and quality of life. These inequalities cannot be reduced without addressing overconsumption, otherwise the world's land will be under more pressure than ever.

Land footprint is a method of examining global land demand, and can be used to identify how Europe – or other affluent regions – can reduce their global land demand. Reducing land demand is the only way to get to a more equitable, but still biodiverse, world in the future.

This is a summary of the EU-relevant results of the full report – see the full report for worldwide results:

https://www.foeeurope.org/sites/default/files/publications/Europe_Global_Land_Demand_Oct11%5B1%5D.pdf

How the land footprint is calculated

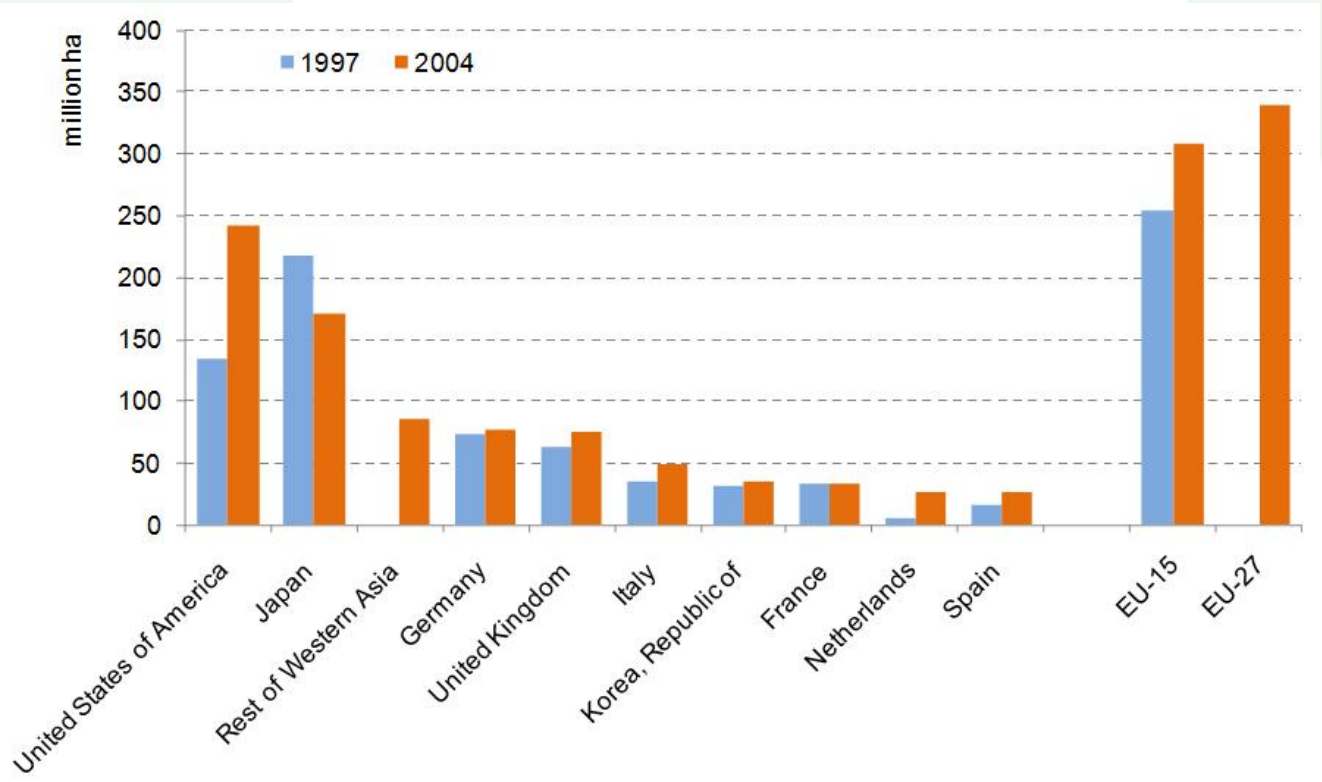
The methodology for calculating national land footprints in this study uses a combination of land use data from the Food and Agriculture Organisation and data on trade in goods from the Global Trade Analysis Project (GTAP). It only looks at agriculture and forestry products, so land used e.g. for mining or factories is not covered.

This methodology allocates the amount of land used for the production of goods to the country where the products are finally consumed. It takes into account the embedded land needed for products (such as the amount of land needed for animal feed, destined for meat consumption) as well as the amount of land within each country and imported from elsewhere. This means that the system can account for shifts of production to other parts of the world.

Calculations have been carried out for the years 1997 and 2004, as GTAP does not currently have more recent data.

Note that land footprint can also be calculated for individual products, but this would use a different methodology, looking at the real land used to produce the product.

Figure 1: Top 10 importers of land, plus EU 15 & 27



2. Results of the research

Full results for EU countries are given in Table 1. Global results are available in the main report.

Here are some key features of the results:

2.1. Europe's high overall land demand

Europe is the region with the second highest overall land demand levels in the world. The USA consumes the most with 900 million hectares (MHa), followed by Europe with 640 MHa. This means the EU is using 1.5 times its own size in land. Well behind the EU come China (500 MHa), and Russia and the former Soviet countries (330 MHa).

2.2. Europe's dependency on imported land

As can be seen in Figure 1, the European countries that are dependent on the largest areas of imported land are Germany and the UK. Each imports approximately 80 million hectares, of which 10 million are from other EU countries and 70 million hectares of which are from outside the EU, This is equal to more than three times the size of the UK and almost two and a half times the size of Germany. In both cases, this import is characterised by a large consumption of land for animal feed for meat production.

Europe is the continent most dependent on imported land to satisfy its high consumption levels. In 2004, of the EU-27's total land demand of 640 million hectares, 375 million were imported from outside Europe. In other words, 58% of land consumed is from outside Europe – mainly China, the Russian Federation, Brazil and Argentina (see Fig. 2).

2.3. Global inequality of land use

On a per capita basis, the EU average land consumption is 1.3 hectares per capita, while countries such as China and India use less than 0.4 hectares per capita. The average EU citizen consumes six times more land than the average Bangladeshi.

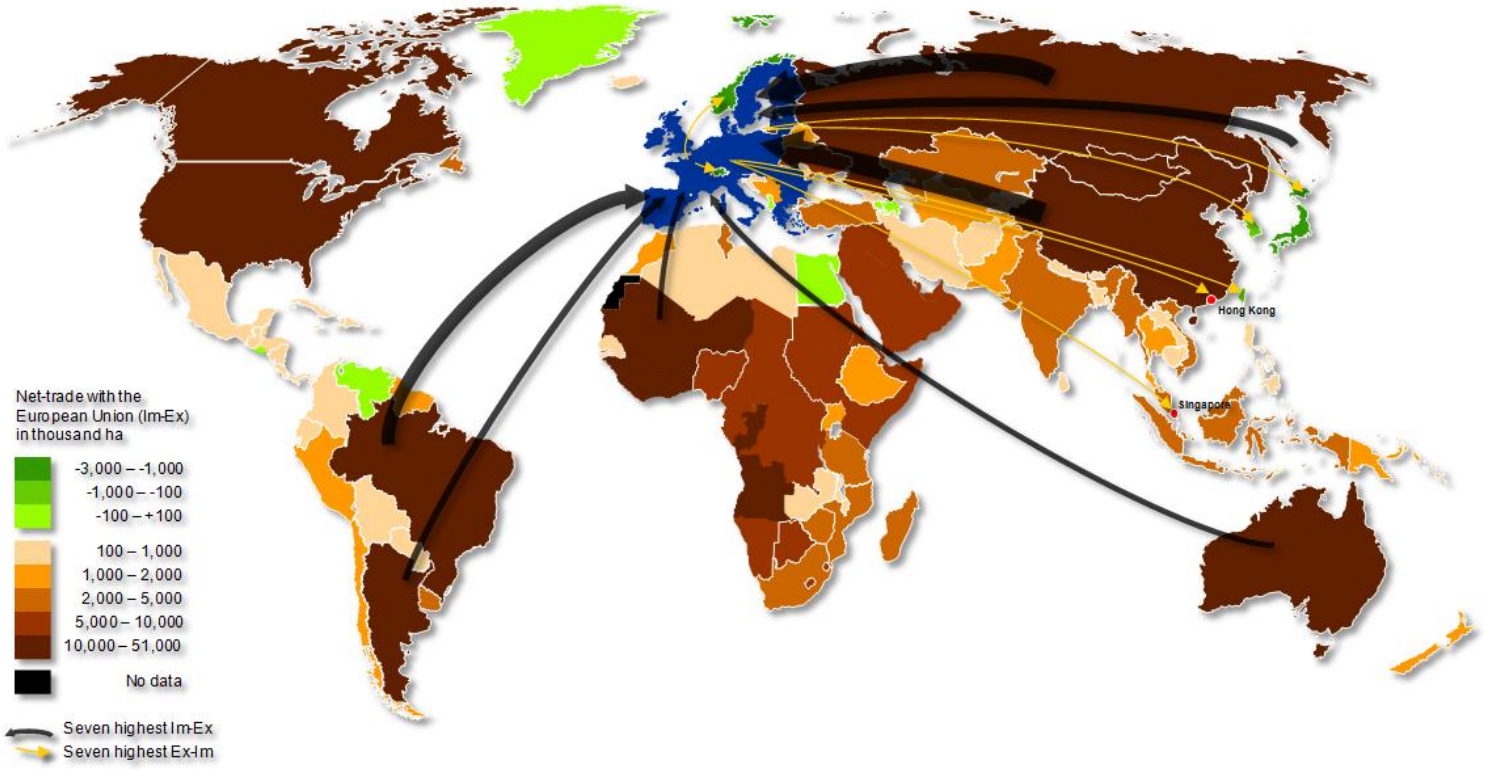
2.4. Trends in land demand

Europe increased its land demand per capita between 1997 and 2004. The Netherlands, for example, doubled the amount of land it consumes in less than ten years.

Other countries such as Finland, Luxembourg and Ireland have also seen steep increases in their land demand per capita.

It is worth noting that 2004 is before the growth of biofuel and biomass imports; these are likely to substantially increase Europe's land footprint.

Figure 2: The Trade balance of virtual land for the EU 27



3. Conclusions

Friends of the Earth Europe and SERI have provided new evidence that reveals how dependent the EU is on both domestic land and indirect land use from other countries. Europe imports large amounts of land, and its per capita land consumption is much higher than most of the rest of the world. It is expected that the world's population will reach 9 billion by 2050. It will not be possible for people around the world to have a fair share of the world's land resources, without a considerable reduction in Europe's land footprint.

But land demand is going up. Increasing incomes in large countries such as China and India are leading to increased land take, for example through more meat consumption.

At the same time, in Europe and other regions there is a push for bio-based energy sources such as biofuels and biomass, without proper consideration of the effects this has on our land footprint.

Europe's land footprint also has major economic impacts. Products that require land are likely to see this portion of their production cost increase – as is already visible in price increases for basic foods. The increased need for land is driving land grabbing, which will also have impacts on the cost of Europe's land imports, not to mention massive economic, social and environmental impacts in affected countries

Table 1: Land footprint data for EU countries

2004	Land footprint per capita	Land footprint	Exports (Ex)	Imports (Im)	Net trade (Im-Ex)
Finland	4.1	21,595,964	13,000,534	11,490,170	-1,510,364
Luxembourg	2.9	1,297,590	129,768	1,212,375	1,082,607
Sweden	2.3	20,877,580	13,365,513	10,937,115	-2,428,398
Belgium	2.0	21,282,602	1,479,248	20,701,984	19,222,736
Ireland	1.9	7,851,785	3,257,432	6,201,568	2,944,136
Denmark	1.9	10,200,070	1,874,925	9,043,071	7,168,146
Netherlands	1.8	28,687,716	1,422,782	27,886,307	26,463,526
Estonia	1.7	2,224,852	1,745,024	1,560,291	-184,734
Latvia	1.6	3,723,592	2,145,098	1,903,766	-241,332
United Kingdom	1.6	95,424,188	4,018,351	80,031,011	76,012,660
Austria	1.5	12,117,236	3,178,661	8,798,188	5,619,526
Lithuania	1.4	4,852,844	1,758,676	2,368,226	609,550
Greece	1.4	15,106,184	1,205,185	9,308,735	8,103,550
Spain	1.3	57,227,363	9,789,442	35,975,199	26,185,757
Slovenia	1.3	2,639,291	486,485	1,792,119	1,305,634
Cyprus	1.3	1,094,786	56,725	982,497	925,772
France	1.3	77,765,086	17,190,515	50,275,788	33,085,273
Germany	1.2	103,160,633	10,105,290	86,973,091	76,867,800
Portugal	1.2	12,965,529	2,546,774	8,745,153	6,198,379
Italy	1.2	72,028,162	6,433,182	55,217,619	48,784,437
Malta	1.0	408,358	1,376	399,734	398,358
Bulgaria	0.9	6,947,107	3,592,038	2,172,004	-1,420,033
Romania	0.8	17,556,251	3,710,171	3,869,266	159,095
Hungary	0.8	8,103,818	3,093,059	4,058,612	965,553
Czech Republic	0.8	7,789,451	2,510,485	4,044,039	1,533,554
Slovakia	0.7	3,538,472	1,270,235	1,628,822	358,587
Poland	0.6	23,760,334	6,389,386	7,986,966	1,597,581
EU-27	1.3	640,226,844	115,756,359	455,563,717	339,807,358
EU-27 extra			36,921,340	374,440,017	337,518,677

Note: The various EU aggregates include EU intra trade, i.e. trade between EU countries. The sums in the bottom rows (EU-27 extra) explicitly excludes intra trade and only adds up trade with countries not included in the respective country group. Actual land demand is not included again, as this indicator is not affected by intra trade.

Recommendations

For economic, social and environmental reasons the EU needs to take urgent action to develop coherent policies to assess and reduce its land footprint.

The EU should:

- **Standardise the land footprint methodology**, and generate the data needed to support it.
- **Start measuring trends in Europe's land footprint** by making Member States report their land footprint annually.
- **Use land footprint in EU and Member State impact assessments** to enable the creation of policies that reduce land footprint, and to prevent any increase in Europe's land footprint.
- **Support EU businesses and supply chains** by providing them with clear methodologies and guidance for calculating the land footprint (and material, water and carbon footprints) of their products.
- **Develop new product policy aimed at reducing resource use.** Importing virtual land (and other resources) has a real financial cost, and as resource prices are likely to increase in the future it makes sense for industry to understand the scale of this land use, and work to reduce it.
- **Start an urgent process to set targets to reduce Europe's land footprint**. It is clear that Europe's land footprint must come down. It should be possible to have a target in place in 2013, as suggested in the Resource Efficiency Roadmap [1], obliging the EU to actively pursue the right policies to reduce its land footprint. This will make the EU economy more resilient and will reduce Europe's impacts on the rest of the world.

5. For more information

The full land footprint study is available here:

https://www.foeeurope.org/sites/default/files/publications/Europe_Global_Land_Demand_Oct11%5B1%5D.pdf

For more information on Friends of the Earth Europe's work on Resources & Consumption, see:

http://www.foeeurope.org/resources

6. References

1. European Commission (2011), "*Roadmap to a Resource Efficient Europe*", COM(2011) 571/3
http://ec.europa.eu/environment/resource_efficiency/pdf/com2011_571.pdf

2. Friends of the Earth Europe (2010), "*Measuring our resource use: A vital tool in creating a resource-efficient EU"*
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Friends of the Earth Europe campaigns for sustainable and just societies and for the protection of the environment, unites 30 national organisations with thousands of local groups and is part of the world's largest grassroots environmental network, Friends of the Earth International.

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