

# Briefing paper



**Friends of  
the Earth  
Europe**

## **A more resource efficient EU economy: the role of company reporting**

The world's resources are under ever-increasing pressure, leading to environmental, economic and social impacts. At the same time, commodity prices have increased 150% since 2000, creating economic pressures on companies and individuals.

Research has shown that there are substantial gains to be made by improving the use of resources by companies, but only a limited number of companies are focussing on this area.

By getting companies to measure and reduce their overall use of resources, environmental and social impacts will be reduced and companies will reduce costs and boost competitiveness.

The European Commission is due to publish new draft legislation on Non Financial Reporting by companies by the end of 2012– Friends of the Earth considers that this is a important opportunity to get companies to report their use of key resources (materials, water, land and carbon), thus helping to move to a resource efficient EU.

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### **1. Introduction**

The era of cheap and abundant resources is over. An ever-increasing global population, expanding middle classes and rapidly industrialising nations are putting an increasing amount of pressure on the global resource base.

At the end of 2012, the European Commission is due to publish a new legislative proposal on Non Financial Reporting by companies – Friends of the Earth believes this is an important opportunity for Europe to lead the way in creating a more resource efficient economy.

Europe, as the continent with the highest net imports of resources, is currently economically dependent on a secure and uninterrupted supply of imports of all types of resources. This creates risks for European

businesses: price risks, supply risks – and reputational risks.

Yet there are numerous opportunities for businesses to reduce their resource consumption and at the same time create major economic benefits. For example it has been estimated that over the course of one year, low-cost or no-cost strategies could create savings of €27 billion (£23 billion) for UK businesses alone [1].

Many businesses are already looking at their energy use, while some are using carbon and water footprints to look for savings down their supply chains. More can be done, and the planned revision of regulation on non financial reporting by companies provides an opportunity for the EU to help facilitate this process.

Europe – and its businesses – have an opportunity to provide an example for other countries, by demonstrating that sustainable levels of resource

consumption can be achieved whilst maintaining a high quality of life.

## 2. Resource indicators

*In order to reduce you first need to measure.*

Some companies are already measuring parts of their resource consumption, for example carbon emissions. However many aren't yet taking action to measure their wider resource use and even if they do measure some aspects, complexity is caused by the profusion of different measurement methodologies being used.

Adoption of a simple, top-line, standardised measurement methodology on the key resources is required in order that companies and policy makers can assess the resource consumption of their supply chains and take action accordingly. It will help Governments identify the best policies to reduce resource consumption.

Friends of the Earth Europe has been working on the development of resource indicators since 2008, in partnership with the Sustainable Europe Research Institute (SERI) in Vienna. Our analysis [2] concluded that the best indicators for this purpose are:

- Water footprint (in litres)
- Land footprint (in hectares)
- Carbon footprint (in tonnes CO<sub>2eq</sub>) and
- Material footprint (in tonnes).

These indicators can be used as an effective method of monitoring resource use at an organisation level, or for individual products, as well as at national level.

We believe that these indicators should be standardised and promoted by the EU. Indeed, the European Commission has already broadly adopted them in its 2011 Resource Efficiency Roadmap [3]. In May 2012 the European Parliament overwhelmingly supported their adoption [4]. The Commission has also proposed them in their consultation on measuring resource use [5].

Any metric for measuring resource use must involve a trade-off between the complexity of information gathering and the specificity of results. In our view these indicators achieve a good balance between these factors.

There is more detail on these four indicators in Appendix 2.

## 3. The growing pressure on key natural resources

Resources are already expensive and subject to growing risks – but this is going to get worse in the future.

### 3.1 Material pressure

Global material extraction has grown by almost 80% over the past 30 years and is around 70 billion tonnes today [6].

Given current growth trends, extraction of natural resources is expected to increase to 100 billion tonnes by 2030 – almost a doubling of extraction compared to 2005 [7].

The peak of extraction of many non-renewable resources has already been reached or is about to be reached [8]. This means that future extraction of these materials will decrease and their availability will be restricted.

It is predicted that certain rare precious metals such as indium and tantalum, which are used in high-tech applications such as flat screens, may not be available by 2020 to 2030 [9].

### 3.2 Water pressure

The Earth Policy Institute believes that water scarcity is now the single biggest threat to global food security [10]. The World Bank has predicted that by 2025, nearly two-thirds of countries will be water-stressed and 2.4 billion people will face absolute water scarcity [11].

In addition, a recent study by the 2030 Water Resources Group found that there could be a potential shortfall of 40% in water resources available across the world by 2030 [12].

### 3.3 Carbon pressure

The scale of the climate challenge facing humanity cannot be underestimated. The Intergovernmental Panel on Climate Change's fourth assessment report [13], written by a panel of independent climate scientists, states that a range of 25-40 per cent emission reductions by developed countries by 2020 will give a 50 per cent chance to stay below 2°C temperature increase.

Global temperature rises of 2°C would mean devastating consequences like increased extreme weather events, flooding, droughts and hurricanes. Global warming must be kept as much below 2°C as possible or we could pass dangerous tipping points and bring on irreversible and catastrophic climate change.

### 3.4 Land pressure

Europe's land footprint is already 1.5 times its own land area and is likely to be increasing [14].

With a rising global population and increasing affluence (and therefore consumption) in developing countries it is clear that land supply will become a bigger and bigger issue in future.

In addition, the pressures to move from fossil fuels and feedstocks to bio based products – biofuels, biomass burning, bio-based plastics – provides an additional driver for increased land use. One study [15] looking at various future scenarios of bio-based plastic production highlighted major concerns over competition with food.

Box 1 examines in more detail why land footprint is important, and its link to land grabbing.

## 4. The business case for measuring and reducing resource use

Resource efficiency provides a route for businesses to cut costs whilst also reducing their impact on the environment – a classic win-win situation.

### 4.1 Impacts of reporting on company performance

A survey of efficiency and impact of Green Accounts requirements on 550 Danish companies [17] revealed that 41% of companies believed they had achieved environmental improvements through green accounting and about half gained economic benefits. Those that experienced economic benefits and quantified them saved on average €10,000, with a quarter of these saving more than €35,000.

A 2007 study by Goldman Sachs found that companies that are considered leaders in environmental, social and governance policies also lead in stock market performance [18].

A report by German investment managers West LB found that producing a corporate sustainability report is one of the most important factors contributing to long term financial viability of a company. This is because it enhanced knowledge and contributed to initiation of

suitable structures and practices [19].

### 4.2 A profusion of initiatives

This link between sustainability reporting and long term financial performance has led to great interest from investors in this subject, and a profusion of interconnected initiatives to encourage and develop environmental reporting by companies, including:

- In the Rio+20 outcome [20]:  
*“We acknowledge the importance of corporate sustainability reporting and encourage companies, where appropriate, especially publicly listed and large companies, to consider integrating sustainability information into their reporting cycle. We encourage industry, interested governments and relevant stakeholders with the support of the United Nations system, as appropriate, to develop models for best practice and facilitate action for the integration of sustainability reporting taking into account the experiences of already existing frameworks, and paying particular attention to the needs of developing countries, including for capacity building.”*
- At Rio+20, Aviva, the UK’s largest insurer, led a wide ranging “Corporate Sustainability Reporting Coalition”, calling for a global convention on corporate sustainability reporting [21].
- The International Integrated Reporting Initiative is working to develop a global framework for integrated reporting - <http://www.theiirc.org>
- The Global Reporting Initiative (GRI) is producing guidance on sustainability reporting -

#### Box 1: Why our land footprint is important, and how it links to land grabbing.

Land is a finite resource. With any increase in the amount of land used to provide more of a product that is in growing demand, for example animal feed or biofuels, there is less land available for other uses. Yet the EU’s land footprint is growing rapidly, at the same time as world population and the land demands of developing countries are also increasing.

The choices made by both individuals and policy makers about which products are consumed have a huge impact on our footprint, with our footprint increased by our high consumption of meat, dairy and timber products, along with policies to increase consumption of bio-energy.

Current patterns of rising consumption of land are clearly unsustainable and are likely to result in a ‘land crunch’. Land grabbing – when land that was previously used by local communities is leased or sold to outside investors, including corporations and governments – is proliferating. This is resulting in increasing conflict over land and widespread social impacts, as local people risk losing access to and control over land and resources on which they depend.

For example, widespread land grabbing is taking place in Uganda [16]. The development of industrial scale agriculture projects to supply global commodity markets is displacing local communities and depriving them of access to natural resources, including land for farming, firewood, forest products and in some places, water supplies. This is also exacerbating rural poverty and aggravating the risk of food crises. In some of the communities where land grabbing has happened, land conflicts and intertribal/ethnic clashes have also taken place. This pattern of social impacts and conflict is increasingly being experienced in many other countries as a result of land grabbing.

Land grabs occurring in Africa and elsewhere are accompanied by major ‘water grabs’, raising serious concerns over future water resources once newly acquired land comes under cultivation. Recent research by the Oakland Institute into the impact of land grabbing on water use in Africa showed that “if all the 40 million hectares of land that were acquired on the continent in 2009 come under cultivation, a staggering volume of water would be required for irrigation (...) approximately twice the volume of water that was used for agriculture in all of Africa in 2005”.

In order to avoid this crunch a first step is to standardise the methodology for reporting land footprint and for companies, governments and other organisations to start measuring it and working to reduce it.

<http://www.globalreporting.org/>

- The Carbon Disclosure Project (CDP) is working on climate emissions and water use - <http://www.cdproject.net/>

In addition, a number of major companies, including Unilever, Marks and Spencer's and Michelin have initiated programmes to measure and reduce their resource use – see Appendix 1 for some case studies.

There is also a growing number of companies that analyse and report the resource consumption of other companies and their supply chains, for example Ecovadis (<http://www.ecovadis.com>) and Trucost – (<http://www.trucost.com>).

### 4.3 A lack of standardisation – and patchy adoption

A study [22] of European stock exchanges commissioned by Aviva and published in June 2012 found that despite the growing relevance of sustainability reporting, rates of disclosure are falling, reflecting the lack of a reporting framework.

An additional problem is that the profusion of different initiatives is creating a complex set of potential approaches to reporting, where well developed issues (e.g. climate) have many different potential reporting approaches, while other issues (e.g. land) have not yet been properly addressed.

## 5. Policy priorities

Company reporting on resource use is a growing priority around the world, but suffers from two key deficiencies:

- A lack of a general requirement on companies to report
- A lack of standardised reporting approaches, leading to a complex set of potential reporting approaches in some areas (e.g. climate), and major gaps in others (e.g. land).

The expected new EU legislative proposal [23] on non-financial reporting will be published by DG MARKT late 2012 or early 2013. It is a major opportunity to address these problems and create a step change in resource reporting by companies, within the EU and around the world.

There should be two main components of this step change – (i) the obligation to report; and (ii) standardisation of reporting methods:

- **Companies should be obliged to report on their use of land, water, materials and carbon**, including a calculation of what they use in their supply chain.
- **The EU Commission should work with stakeholders to standardise methods of reporting on resource use**, including resource use in supply chains, for example:
  - A range of approaches are currently being used to measure *carbon* emissions; these need

further standardisation in order to be more comparable for investors and less demanding for suppliers.

- On *water*, a lot of work has been done within the Water Footprint Network, but the approach is not yet standardised through any standards body (see page 7 for more details).
- On *material*, a range of different approaches are being used, which would benefit from greater standardisation.
- On *land*, the Commission's consultation on resource use indicators [24] lists supply chain land footprint as an indicator the Commission 'will develop'. We view this work as a priority.

### 5.1 Other priorities for Friends of the Earth in the non-financial reporting legislation.

Friends of the Earth Europe, through the European Coalition on Corporate Justice, will be making proposals on other aspects of the legislation (see [www.corporatejustice.org](http://www.corporatejustice.org)), in summary:

- The new legislation should provide a clear, simple, unambiguous and mandatory framework for the disclosure of non-financial information by all companies that have significant business operations in the EU (excluding SMEs).
- It should be precise enough to guide companies to analyse and disclose information that would:
  - Allow shareholders and external stakeholders to understand and evaluate the risks and impacts of corporate operations and the effectiveness of a company's risk management systems, and
  - Enable company directors to identify their company's responsibilities and integrate social, environmental and human rights concerns in their decisions.
- There should be no exceptions for companies to report. The 'comply or explain' model, as implemented in Denmark, is not an appropriate one. It didn't have any significant impact on reporting and evaluations of that model by the EU have proven that it is not effective.
- The reporting model needs to include clear indicators that assure that information provided is reliable, relevant and comparable.
- Monitoring of reports is crucial and a system needs to be in place to allow stakeholders to challenge incorrect or misleading reporting, as it exists in relation to companies advertisements

## 6. Conclusions

**Reporting on resource use is becoming ever more popular among businesses, as it is realised that**

there are major opportunities available to save money and resources.

However, not all businesses are doing this, and key resources are not getting the attention they deserve – notably land.

The new proposal on non financial reporting provides a real opportunity to spread such reporting more widely, and to ensure that the key standardisation job is done so that company reports are more comparable.

There were attempts at Rio to push for global standards on company reporting, The EU is in a good position to take this agenda forward, as the world's largest single market.

This will have positive impacts globally, both through the setting of standards and through the impacts of EU companies reporting on their supply chains around the world.

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- [www.foeeurope.org/resources](http://www.foeeurope.org/resources)

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## 8. Appendix 1: Case studies from companies

A large number of companies are already looking at aspects of their resource use, and identifying savings.

*NB: Inclusion of a company in this section does not mean that Friends of the Earth accepts or condones the operations of that company.*

*In addition, more and more companies are making false environmental claims – in their advertising and public relations – attempting to 'greenwash' their image and cover up the real environmental impacts of their core business activities.*

### 8.1 Water case studies

#### **Case study: SAB Miller**

Over the year 2011-2012, the brewing company SABMiller improved its own water efficiency by 5% [25], and in its Tanzanian operations has previously improved water efficiency by 11% in two years [26].

#### **Case study: Azucarera**

In Spain, the sugar company Azucarera has been working with its sugar beet farmers to modernise their irrigation infrastructure [27]. Investments have been made in automated systems which now cover 155,000 hectares where beet is grown, resulting in reduced water losses, higher crop yields by applying water more efficiently and, because they use less power, lower running costs.

Rainfall levels and the needs of the beet crop are analysed to assess the optimum water requirement.

### 8.2 Carbon case studies:

Through measuring energy use and emissions embedded in supply chains, businesses can improve efficiency and risk management, and reveal opportunities to gain competitive advantage. Increasingly, companies are measuring carbon in supply chains to strengthen sustainability, supply chain management and brand value. For 60% of companies in the MSCI world index, 75% of their emissions are from their supply chains [28].

#### **Case Study: Marks and Spencer (M&S)**

M&S has achieved substantial reductions in its 'own estate' emissions, despite expanding its operations, as part of its 'Plan A' initiative. This 5 year sustainability plan 2007-2011, has saved 800,000 tonnes of CO<sub>2</sub> and generated a net financial benefit for the company (in 2011) of £70m.

M&S is now taking steps to reduce emissions from its supply chain – the major part of its carbon footprint. All food suppliers are required to produce an environmental action plan, and by 2015 a quarter of them must cut emissions by 20% [29].

#### **Case Study: Michelin**

Michelin has achieved significant energy and carbon savings by investing in energy efficiency improvements across a range of technologies at its Dundee site in Scotland. Various improvements were identified, including to the steam and compressed air systems and the large water pumping systems. CO<sub>2</sub> emissions were reduced by 860 tonnes per annum, and energy cost savings of £83,000 per annum were made.

Whilst the level of investment was considerable, the payback period on overall investment was less than 2 years [30].

### 8.3 Materials case studies:

One of the first ways many companies address material resource efficiency is through reducing the amount of material going to landfill. However, more gains are obtained by re-designing products to use fewer materials in both their manufacture and packaging.

#### **Case Study: Unilever**

Unilever has a target to halve the waste associated with the disposal of its products by 2020 ('per consumer use' from 2008 levels). This will be achieved by reducing the weight of materials used in packaging and through recycling [31].

#### **Case Study: Ready Egg Products Limited**

Ready Egg was considering sending egg shells and contaminated packaging for incineration. A partnership with RecyCo, who recycle the packaging and use the shells in compost has saved CO<sub>2</sub>, reduced waste, cut raw material consumption and saved the company money [32].

## 9. Appendix 2: The four footprints in more depth

### 9.1 Why use the land footprint, carbon footprint, water footprint and material footprint?

The only way to measure the overall quantity of resources that Europe is consuming is by using a consumption-based ‘footprint’ methodology, which has a life-cycle perspective and therefore includes the embedded or indirect use of resources for the production of an item, wherever it is produced. As the continent is a net importer of resources, any other indicator will not provide a complete picture of the overall scale of the resources consumed by Europe.

A set of indicators is essential in order to avoid aggregated indicators (i.e. where different types of resources are added up into one number). Aggregated indicators cannot measure resources in a robust way, since unreliable assumptions are required in order to transform different types of data (e.g. GHG emissions, land use, water use, material flows, etc) into one common number, resulting in important information being lost in this procedure.

This set of indicators is based on real physical quantities, and so is more transparent than other approaches. It is also strongly linked to the statistical system, making data collection more straightforward.

By having a set of indicators, rather than one overall indicator, a clearer picture of the balance of resource use is given, and trade-offs are made more visible. This makes it possible to monitor shifts in environmental pressure (e.g. from fossil based to bio-based), and provide a well-founded basis for policy making and target setting.

### 9.2 Material use

This indicator covers material use through the supply chain – i.e. not just the final weight of product, but also material and waste from the extraction of materials e.g. from mining ore.

The material indicator can be divided into biotic materials (produced from agriculture, forestry, fishery, and hunting) and abiotic materials (minerals and fossil energy carriers).

#### **Measuring material use**

Many companies already measure some form of material indicator, for example waste production, waste going to landfill and/or incineration, use of recycled materials etc.

This indicator takes a step beyond this, and involves looking in more depth down supply chains to identify what materials are used and disposed of.

### 9.3 Water footprint

The water footprint of an individual, community or business is defined as the total volume of freshwater

that is used to produce the goods and services consumed by the individual or community or produced by the business [33].

Water consumption is growing rapidly. Many products, including foods, are highly water intensive to produce. Agriculture is responsible for using 92.2% of the water consumed globally [34].

The production of meat has an especially large footprint. Nearly a third of the water footprint of agriculture is related to the production of animal products [35]. The global average water footprint of beef is 15400 litre/kg and of sheep is 10400 litre/kg [33].

The water footprint consists of three elements:

- the **blue water footprint** is the volume of surface water and ground water consumed during production processes (i.e. evaporated or incorporated into the product),
- the **green water footprint** is the volume of rainwater consumed (i.e. evaporated or incorporated into the product),
- the **grey water footprint** is the volume of freshwater that is required to assimilate the load of pollutants. It is calculated as the volume of water that is required to maintain the water quality according to agreed water quality standards.

The availability of green water is reliant on rainfall and is therefore vulnerable to climate change impacts. In the future increasing water scarcity is likely to have a severe impact on agricultural yields.

#### **Measuring water footprint**

The Water Footprint Network has done excellent work in establishing a methodology for measuring water consumption. They have also built a wide network of supporting companies, academics, NGOs, Government Ministries and others that use the methodology and contribute to its further refinement.

An international standard (ISO 14046) is also under development.

Page 63 onwards in the *Water Footprint Assessment Manual* describes how the water footprint of companies and organisations can be calculated [36].

It’s worth noting that there are also other approaches to measuring the water consumption of companies, for example that used by Trucost [37].

### 9.4 Carbon footprint

It is well accepted that GHG emissions have to be rapidly reduced. Both the EU and member states have reduction targets. Many companies already measure the emissions of their own estate and are starting to look at the emissions from their products.

However, embedded emissions in the global supply chains of EU based companies aren’t counted under national inventories, even when the products are being consumed in the EU. In the absence of new

regulations, EU companies are under no obligation to measure or reduce the GHG emissions from their supply chains in other countries.

### **Measuring the Carbon footprint of a business**

The GHG protocol is used by 63% of global companies [38]: <http://www.ghgprotocol.org/standards/corporate-standard>

The GHG protocol have also developed an approach to looking along the value chain:

<http://www.ghgprotocol.org/standards/scope-3-standard>

### **9.5 Land footprint**

Unlike carbon, water and materials footprints, land footprint is less well developed. However, the land footprint indicator is deliberately simple:

- Land footprint is a simple measure of the actual area of land (in hectares) required to produce a product, provide for a country or for an organisation to operate.

This makes calculation reasonably straightforward and simpler than water or carbon footprint.

For example, it includes the direct footprint of a business (i.e. the land covered by offices, factories, car parks), and also that required to create its products (e.g. land to produce feed for cattle, land for the cattle, land for the factories that process the cattle).

An overall land footprint is important as it shows how much of the world’s land area is needed by the country/product/organisation. Land is a scarce resource, and land use has environmental, economic and social impacts. Even if ‘your’ land use is viewed as sustainable, you may be pushing another land user towards unsustainable land use. Box 1 looks at the importance of land footprint in more detail.

A land footprint approach can also be used as a starting point for further analysis, for example looking at what sort of land is being used, and where the land is. For example, the Sustainable Europe Research Institute study of Europe’s Land Demand [39] looked at trade between 112 countries and regions, with ten land use types.

### **Measuring the land footprint of a business**

This is an initial draft of a methodology for deriving a land footprint of a business, and it is largely derived (with thanks) from the Water Footprint methodology [40].

It’s worth noting the key differences between land footprint and water footprint (which serve to make land footprint easier to calculate):

- Overall land footprint does not distinguish between different types of land (though these can be collected and included in the next level of the analysis if you wish). Water footprint, in contrast, considers three types of water (Green, Blue and Grey).

- Water footprint can consider “end use water footprint”, i.e. the water use by the final consumer. This is unlikely to be particularly relevant in land footprint.

Other than these differences, the methodology developed for water footprint provides a useful first run at a land footprint methodology.

Here are some key elements of this methodology:

- The land footprint of a business is defined as the total area of land that is used directly or indirectly to run and support the business. It consists of two main components:
  - The operational (or direct) land footprint of a business is the area of land used for its own operations.
  - The supply chain (or indirect) land footprint of a business is the area of land used to produce all the goods and services that form the inputs of production of the business.
- Instead of the term ‘business land footprint’ one can also use the terms ‘corporate land footprint’ or ‘organisational land footprint’.
- The total land footprint of a business can be schematised into components as shown below:



- After the distinction between operational and supply chain land footprint, one can differentiate between the land footprint that can be immediately associated with the product(s) produced by the businesses and the ‘overhead land footprint’. The latter is defined as the land footprint pertaining to the general activities for running a business and to the general goods and services consumed by the business. The term ‘overhead land footprint’ is used to identify land use that is necessary for the continued functioning of the business but that does not directly relate to the production of one particular product.
- By definition, the ‘land footprint of a business’ is equal to the ‘sum of the land footprints of the business output products’. The ‘supply chain land footprint of a business’ is equal to the ‘sum of the land footprints of the business input products’.
- Calculating a business land footprint or calculating the land footprint of the major

product(s) produced by a business is about the same thing, but the focus is different:

- In the calculation of a business land footprint, there is a strong focus on making the distinction between an operational (direct) and supply-chain (indirect) land footprint. This is highly relevant from a policy perspective, because a business has direct control over its operational land footprint and indirect influence on its supply chain land footprint.
- When calculating a product land footprint, there is no distinction between the direct and indirect land footprints; one simply considers the process land footprints for all relevant processes within the production system, ignoring how the production system may be owned and operated by different companies.
- An hybrid between a product and business land footprint account is possible by focussing on the calculation of the land footprint of a particular product – for example, by looking at just one of many products produced by a business – but making explicit which part of the product’s land footprint occurs in the business’s own operations and which part in the business’s supply chain.

### **Standardising the land footprint**

The methodology for land footprint has not been standardised in the same way as other indicators, but it is in general simpler to calculate.

We welcome the Commission’s stated intention to develop a land footprint indicator in its July 2012 resource use indicators consultation [5].

We recommend that the European Commission launch a process to standardise the indicator, maybe through the Joint Research Centre or through CEN, the European Committee for Standardization, so as to rapidly move to single standard rather than multiple approaches.

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