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Institute for
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Links between the environment,
economy and jobs

Policy-makers Summary

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The study shows that there are strong links between the economy and the environment. These go far beyond the narrow definition of eco-industries traditionally measured. A good quality environment supports many sectors in the economy. Policies to ensure the protection of our environment seem unlikely to provide a drag on the economy, and may easily prove to be a source of new jobs and innovation, a driver of progress, and ultimately help increase the health of our economies and wellbeing of societies.

1. In the past we just measured the tip of the iceberg ...

Past studies generally used an OECD/Eurostat definition of the eco-industries. This definition focused on prevention and treatment of pollution which is only one of many strands. In particular, it excludes jobs for which a good environment is a key input into the production process such as organic agriculture or tourism.

The advantage of the traditional OECD/Eurostat definition though was its clear statistical boundary. Sectors were either 'in' or 'out'. But the sectors included were mainly those that benefited from expenditure on reducing the impact of environmental pollution. Many 'positive' sectors that benefited from environmental quality were excluded. The key statistics for this OECD/Eurostat definition are:

- the turnover of the eco-industry is € 270 billion in current prices (2006), or 1.4% of EU Turnover¹
- 2.3 million people directly employed in the eco-industry, or 1% of the European workforce
- including induced and indirect effects leads to turnover of € 750 billion and a total of 4.6 million jobs²

2. What lies below the surface is much bigger ...

This study has looked at all the links so a much broader range of economic activities linked to the environment have been covered. These break down into three types:

1. Activities where the environment is a **primary natural resource** or input into the economic process – Agriculture, forestry, mining, electricity generation and water supply (core and broad definition used)
2. Activities concerned with **protection and management** of the environment – Waste recycling, pollution & sewage control and environmental management
3. Activities dependent on **environmental quality** – Environment related tourism

Of course, these classifications are more subjective than the narrow OECD/Eurostat definition. For this reason, a 'core' definition was used for economic activities based

¹ Estimates are for EU-27 but the full report provides breakdown by individual member state.

² For example, spending on pollution control generates a demand for components, which in turn generates a demand for raw materials. These knock-on effects are calculated to show the 'knock-on' or 'multiplier' effects that ripple through the economy thanks to the direct expenditure. Also, people involved directly spend their wages and this also induces additional effects elsewhere in the economy. This was done using OECD-E3ME input-output tables for EU-27 for 46 sectors of the economy.

only on natural resources that we can be sure is valid as well as a 'broad' definition that is more contentious. The core includes organic agriculture, sustainable forestry, renewable energy and water extraction and supply. The broad definition includes all agriculture and forestry, fishing, mining and quarrying, all electricity generation and water supply and extraction.

Based on the core natural resource definition, environmental protection and management and environmental quality, the total turnover in the European economy linked to the environment is €405 billion along with 4.4 million jobs.

Of this:

- around €144 billion in turnover and 1.6 million jobs is associated with tourism that depends on environmental quality so, for example, recreational fishing or tourism where the natural environment influences the choice of destination. However, visits to the seaside are excluded – as mentioned above, a line needs to be drawn and that line can easily be argued over.
- around €100 billion in turnover and 960,000 jobs is associated with the organic agriculture, sustainable forestry, renewable energy and water extraction and supply.
- around €160 billion in turnover and 1.8 million jobs is associated with environmental protection and management.

Adding in induced and indirect effects would increase the totals to €1,130 billion in turnover and 8.6 million jobs.

Moving to the even wider 'broad' definition, total direct turnover would be €3 trillion and 21 million direct jobs.

Of course, this is more contentious – around a third of the total, for example, relates to agriculture in the EU. But even for such sectors there are obvious links.

3. Other links exist, but are beyond any measurement...

Finally, some things were beyond even rough measurement. These could be highly significant, but are not systematically captured in the statistics. For example, eco-construction is not included in the figures above but is booming. Another example is the effect on house prices, where the value of a good quality local environment can be seen capitalised in house prices and is clearly significant.

The study also looked at the importance of biodiversity and eco-system services in each of the sectors used in the quantitative analysis. Around one-third of all industrial sectors have significant environmental links in terms of biodiversity and eco-system services. This contribution of biodiversity and eco-system services to the economy comes through:

1. **provisionary services**, such as food, fibre, fuel and water;
2. **regulating services**, i.e. benefits obtained from ecosystem processes that regulate the environment, such as the regulation of climate, floods, disease, wastes, and water quality;

3. **cultural services** such as recreation, aesthetic enjoyment and tourism; and
4. **supporting services**, i.e. services that are necessary for the production of all other ecosystem services, such as soil formation, photosynthesis, and nutrient cycling

This clearly showed that some environmental benefits and services though significant cannot be, or are not, picked up by economic indicators such as GDP. On the other hand, negative impacts on the economy can occur through, for example, climate change leading to more storms and severe weather that disrupts the economy.

4. Environmental policies also affect GDP and jobs, usually positively...

So, a large part of the economy depends on the environment to some extent. But what is the effect of environmental policy on the economy – is it a cost or a drag on competitiveness as sometimes it is portrayed? The study looked at a number of hypothetical policies and modelled the impact of a policy that changed the nature and/or costs of inputs (such as higher fuel costs or changes in current technology) to a sector (or group of sectors) and the subsequent impacts on GDP and jobs.

The answer is broadly that environmental policy just contributes to a process of structural change. It causes a marginal reallocation of resources from those sectors financing a policy (paying its costs) to sectors that benefit from the intervention. Examples of the policy scenarios are:

- Increasing the energy efficiency of the manufacturing sector (modelled as a 10% reduction in purchases of inputs from the energy sector with substitution to more energy efficient technologies). This led to a net increase in output of €480m and gain of 140,000 jobs (energy sectors have a low labour intensity).
- A 10% substitution of bio-fuels for manufactured fuels leads to a €1.5 billion increase in net output and 140,000 new jobs due to the labour-intensity of the agriculture sector and the industries that supply it.
- The EU Structural funds should lead to annual investment of €7 billion in environmental infrastructure. This should boost output by €20 billion and jobs by nearly 170,000 per annum. Most of the jobs will be in Spain, Hungary, Poland and Romania.
- A price increase in energy of 2.7% was found to reduce the CO₂-intensity of the economy by 1% in the long-run.

Of course, this modelling needs to be treated with caution. In particular, it isn't possible to pick up all of the effects of increasing the price per unit of output in a given sector or displacement effects (eg. what would Structural Fund spending have otherwise been spent on?). But, the picture is clear. **Environmental policies do not appear likely to cause much disruption to the economy. Indeed, their effects will often be positive at least in the short-term as they boost demand in labour-intensive industries. The main impact is just to shift resources from polluting sectors to more environmentally-friendly sectors.**