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Managing the Transition

Challenges

- While global resource efficiency offers the potential for economic growth, in some industries reduced material extraction will translate into reduced revenues and job losses.
- For the global economy there is good evidence that the overall impact of resource efficiency will be positive. However, for certain sectors – for example, mining and quarrying – increased resource efficiency will translate to a reduction in demand for their products.
- For a specific country, the economic effects of material efficiency depend on its position in the international division of labour. Those countries that are importing materials are likely to be winners and those that are exporting materials tend to be losers.



Responses

- Resource efficiency has the potential to **create jobs** in other areas, so that rather than resist resource efficiency or support resource-inefficient activities, it may be preferable to set up programmes to compensate and transfer redundant workers to growing sectors, and re-train them.
- An awareness of the potential growth areas in resource-efficient industrial processes, and of areas of national comparative advantage, may help policy makers to plan for an **industrial strategy** that is resilient to future technological developments.

Examples

Compensation for closure of most fisheries in Norway

What?

- Closure of all major fisheries in Norway in 2005 due to chronic overfishing and declining fish stocks.
- This was mitigated through:
 - Guarantee Fund to help fishers cope with loss of income, retrain them, and expand other activities.
 - Rural and regional policies emphasising education, training and investment for longer-term restructuring.

Success factors

- Combination of compensation and transfer policies.

Results

- Decline of employment of around 100,000 people was managed so that when fish stocks rebounded the average income of fishers was substantially higher than before and former fishers had alternative employment.

Transition as potential for job creation

What?

- Overall employment relating to recycling in European countries has increased by 45% between 2000 and 2007 and continues to do so.
- A Foresight report for the UK Government Office for Science, 'The Future of Manufacturing', identifies some key features for this sector:
 - Manufacturing will be more responsive and closer to customers, with digital technologies allowing mass personalisation and distributed production.
 - There will be new global market opportunities from emerging economies, but also potential for some 're-shoring' of manufacturing in countries such as the UK.
 - There will be increasing focus on the sustainability of products, both due to national and international regulations, as well as consumer-pull.
- There are numerous established sectors in which very significant resource efficiency opportunities have been identified, the exploitation of which could both make them more competitive and ease the transition to a more resource-efficient economy overall. The most important such sectors have been identified as:
 - energy efficiency in buildings and iron and steel production
 - large-scale and small-holder farm yields
 - food waste
 - municipal water leakage
 - urban densification
 - power plant and transport efficiency
 - electric and hybrid vehicles
 - land degradation
 - oil and coal recovery
 - irrigation efficiency
 - road freight shift

Success factors

- Importance of developing and training a skilled workforce.
- Potential for 'phoenix industries' (declining industries whose skill bases can still be used to seed newly emerging industries).
- Significant role played by government in assisting industries and supply chains by supporting co-location and manufacturing regions.
- Importance of 'patient capital' (i.e. financial support that is not tied to a requirement for high returns in the short term) to support long-term investment.
- Research and development in new technologies.
- Well-designed regulation to incentivise product and process efficiency.
- Support for new business models based on reuse, remanufacturing, and 'servitisation' models.

Results

- Transition to more resource-efficient economy without creating losers and with maximizing the potential for job creation and economic growth.

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The International Resource Panel was established in 2007 to provide independent, scientific assessment on the sustainable use of natural resources and the impacts of resource use over the full life cycle.