Key findings

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Resource flow analysis

In 2001, Scotland's residents:

- Consumed 139,937 GWh of energy.
- Consumed 112 million tonnes of materials.
- Manufactured 30 million tonnes of products.
  - Consumed 6.9 tonnes of final products per capita.
- Consumed 3 million tonnes of food.
  - 637 kg per capita.
  - Generated 930,000 tonnes of food waste.
- Generated almost 15 million tonnes of waste.
  - 8 million tonnes by the commercial sector.
  - 2 million tonnes was household waste.
- Consumed 2.7 million megalitres of water.
  - 0.54 megalitres per capita.
- Generated 62 million tonnes of air emissions.
  - 61 million tonnes of CO_2.

Ecological footprint

In 2001, Scotland residents' ecological footprint was 27,082,915 gha or 5.35 gha per capita:

- Direct energy was 0.97 gha per capita (18% of the total ecological footprint)
  - Domestic energy use was the largest component, responsible for 68% of the direct energy ecological footprint.
- Materials & waste was the most significant component, with a per capita footprint of 2.01 gha (38% of the total ecological footprint).
- Food was the second largest component, with a per capita footprint of 1.55 gha (29% of the total ecological footprint).
  - Animal-based food products were responsible for 77% of the food ecological footprint.
- Personal transport was 0.6 gha per capita (11% of the total ecological footprint).
  - Scotland's residents travelled 67,000 million passenger-kilometres.
  - Car travel was the largest component of passenger transport - responsible for 78% of the personal transport ecological footprint.
- Built land was 0.21 gha per capita (4% of the total ecological footprint).

Sustainability assessment

If everyone on the planet consumed as much as an average Scotland resident, an additional 1.8 Earths would be required to sustainably support global resource consumption.

Data recommendations

On the basis of the problems faced with obtaining suitable data to carry out this study, the following recommendations are made to improve data availability and quality in the future:

- **Office of National Statistics (ONS) to:**

- Provide ProdCom data at a regional level.

- Examine their methodology, which could provide aggregated data that will allow suppressed data to be made available.

- Ensure that industries report in terms of mass, or alternatively, ONS and other stakeholders carry out research and agree on a set of defined conversion factors to mass .

- **Data on import and export between UK regions and countries should be collected in more detail and made more transparent. For example:**

- Air freight data was not available in enough detail to enable the extraction of UK import and export from world import and export.

- Some road freight data was not included because it was not broken down into enough detail. For example, agricultural products included both primary crops and processed foods.

- **Currently, the examination of flows of resources throughout Scotland is limited. This is mainly due to very little data being available on the end use of materials and location of this use. However, some good data is available, such as that published by the Forestry Commission (see 2002 & 2002a as examples of this).**

- It is recommended that Government and Industry work together to improve the data available, for example improved research on supply chain analysis, which would aid and provide a better understanding of resource use and of the flows between manufacturing sectors.

- **More comprehensive data on water use and waste water arisings should be collated, however this may become more readily available with the *Implementation of the Water Framework Directive* (see European Parliament, 2000).**