

## Briefing January 2009

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# One Planet Scotland: Measuring our Ecological Footprint

### Summary

Scotland is currently living a ‘three-planet’ lifestyle – that is, if everyone in the world lived as we do, we would need three planets to survive. Recent analysis<sup>1</sup> for the Welsh Assembly Government suggests that if historic growth rates of the Ecological Footprint continue, Wales, Scotland and other countries in the UK are on a footprint trajectory that could lead to a **20% increase in its footprint by 2020**. On numerous occasions, ministers have stated that Scotland needs to move towards one planet living. More formally, the Scottish Government is committed to reducing the global environmental impact of consumption, and will measure this change by using the Ecological Footprint as an indicator.

The Scottish Government plans to commission an analysis of Scotland’s Ecological Footprint during 2008. At the same time, the Scottish Government is launching the Carbon Accounting Project, which will “build carbon into decision making processes”. WWF believes this project and the Ecological Footprint analysis are closely related and should be considered in tandem. WWF welcomes this new approach to decision-making and urges the government to incorporate the following elements in the research:

- formal linkage between the Ecological Footprint research and the Carbon Accounting Project
- time series for the Scottish Ecological Footprint and Carbon Footprint<sup>2</sup> for 1990-2003
- policy scenarios to 2020 to show the footprint reduction potential of present and future policies and exploring links between economic growth and consumption
- policy scenarios to 2050 to demonstrate the potential to achieve a One Planet Scotland

With this evidence, we will understand current trends in footprint and carbon emissions growth, the ‘low hanging fruit’ for footprint reduction in the short term, and the ‘big hitters’ that must be tackled in the medium to longer term. Then the Scottish Government will be in a position to set targets for footprint reduction, and report regularly on progress.

### Background

As part of the Scottish Spending Review 2007, the Scottish Government established the National Performance Framework. One of the national indicators is: “reduce overall ecological footprint”. This

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<sup>1</sup> <http://wales.gov.uk/desh/publications/climatechange/ecologicalfootprint/report.pdf>

<sup>2</sup> This analysis will also be able to show direction or production greenhouse gas emissions

contributes to the national outcome: “We reduce the local and global environmental impact of our consumption and production.” This is one of 15 outcomes leading to an overall purpose for government: “to focus government and public service on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.”<sup>3</sup>

The Scottish Government plans to measure the Ecological Footprint in early in 2009. At the same time the government’s Carbon Accounting Project aims to develop a tool to assess the carbon impact of individual policies, programmes and projects, or total government spend. It is vital to use this opportunity to combine these research efforts to improve our understanding of Scotland’s global environmental impact, while tracking the trends of our direct emissions. In order to do so, the government should use the latest evidence-based sustainable consumption and production models and tools to develop policy scenarios and assess the overall trajectory of policies.

A key tool to help with both of these projects is the Resource Energy Analysis Programme<sup>4</sup> (REAP). REAP is a software tool which can measure the environmental pressures associated with human consumption. It can be used at the local and national level and generates indicators on carbon dioxide and greenhouse gas emissions, Ecological Footprint, and Material Flows. It can also produce results in terms of direct emissions.

REAP’s powerful scenario tool models the impact of policy and creates scenarios of the future or longer term trajectories. These scenarios can be set against targets or compared to alternative futures based on selected trends or assumptions. For example for housing policy it is possible to explore the impact of introducing policies that reduce energy use, reduce emissions and promote the development of renewable energy sources.

A recent example is the DEFRA report<sup>5</sup> which outlines the carbon emissions created by goods and services imported in to the UK. This report concluded that emissions associated with UK consumption of goods and services *increased* by almost 115 mt CO<sub>2</sub> (18%) between 1992 and 2004, demonstrating the importance of measuring and managing our consumption-based emissions.

## **Past and Current Activity**

### **Scotland**

Scotland’s Ecological Footprint was first measured in 2004 as 5.35 gha (global hectares) per person in the Biffaward funded study by Best Foot Forward<sup>6</sup>. In 2006, WWF UK published a report, *Counting Consumption*, which provided ecological and carbon footprint figures for the UK, devolved countries and regions. Scotland’s footprint was calculated at 5.37 gha/capita. The report used improved methodology from Stockholm Environment Institute which conformed to the international footprint standard established by the Global Footprint Network. For the first time, footprint results were directly comparable within the UK, from the local to regional and national levels.

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<sup>3</sup> Scottish Budget Spending Review 2007

<sup>4</sup> <http://resource-accounting.org.uk>

<sup>5</sup> Development of an Embedded Carbon Emissions Indicator: A report for DEFRA, SEI and the University of Sydney, 2008  
<http://www.defra.gov.uk/environment/business/scp/research/themes/theme1/scale0708.htm>

<sup>6</sup> *Scotland’s footprint: A resource flow and ecological footprint analysis of Scotland*, 2004

In 2007, Scotland's Global Footprint Project published *Towards a low footprint Scotland*<sup>7</sup>, which looked at the key drivers behind the continuing growth in footprint. The report sets out a route map on how Scotland can move from 'three planet living' to a one planet Scotland. In summary, the report concludes Scotland's footprint needs to be reduced by 75% by 2050 with half the change delivered through resource efficiency, and half through changes in consumption. Also in 2007, the Local Footprints Project<sup>8</sup> was launched, providing support and advice to all local authorities and schools on footprinting.

In September 2008, SEI released new results for Scotland based on 2004 data of 5.34 gha per person. The next results are expected in May 2009, based on 2006 data. To allow results to be compared year on year, SEI is able to provide a time-series of Scotland's results backcast to 1992.

## **Wales**

*Wales' Ecological Footprint – Scenarios to 2020*, a report to the Welsh Assembly Government, was published in 2008<sup>9</sup>. It provides a time series for the footprint, covering the period 1990-2003. The time series data shows that the footprint of Wales has increased at an average rate of 1.5% per year between 1990 and 2003. If this growth rate is to continue, Wales will have a footprint of 6.19 gha/capita in 2020, about 20% up from 5.16 gha/capita in 2008.

The policy scenarios focus on how footprint could change over time in housing, transport and food, and finally what could be done to achieve a 10% reduction in footprint by 2020. In all cases it is fair to say that current and planned policies, even when fully implemented, come nowhere near a 10% reduction by 2020, which in itself is a modest target when set against the challenge of a One Planet Wales.

WWF Cymru commissioned *One Planet Wales*, a report which shows that Wales can achieve a 75% reduction in Ecological Footprint by 2050<sup>10</sup>. This is the 'One Planet Wales Challenge' – for the people of Wales to lead happy, healthy, prosperous lives within their fair share of the Earth's resources. The report focuses on key sectors: food, buildings, transport, energy, products, services, resources. It provides recommendations for the short-term, and strategies for 2020-2050.

## **England**

REAP software and training is available to every Region in England through SCPnet (Sustainable Consumption and Production Network)<sup>11</sup>. REAP has been used by a number of regions, city regions and local authorities to develop policy scenarios and to assess the overall direction or trajectory that key policies will take in terms of CO<sub>2</sub> emissions or Ecological Footprint<sup>12</sup>. Some examples include:

- Evaluate regional strategies in Yorkshire and Humber and the West Midlands
- Create footprint reduction roadmaps for the South East and Wales
- Support collaboration between Tees Valley and Greater Nottingham local authorities
- Assess policies in relation to housing (Leeds City Region) and transport (Yorkshire and Humber)
- Develop a route map to Ecological Footprint Reduction for South East England Regional Assembly

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<sup>7</sup> Towards a low footprint Scotland: Living well, within our ecological limits, Scotland's Global Footprint project, March 2007, Stockholm Environment Institute

<sup>8</sup> [www.localfootprints.org](http://www.localfootprints.org)

<sup>9</sup> *Wales' Ecological Footprint – Scenarios to 2020*, 2008, Stockholm Environment Institute

<sup>10</sup> One Planet Wales, WWF Cymru, October 2007, [http://www.wwf.org.uk/filelibrary/pdf/opw\\_report\\_final.pdf](http://www.wwf.org.uk/filelibrary/pdf/opw_report_final.pdf)

<sup>11</sup> [www.scpnet.org.uk](http://www.scpnet.org.uk)

<sup>12</sup> Examples can be found at <http://resource-accounting.org.uk/policy-analysis>

## **Northern Ireland**

The Northern Ireland Sustainable Development Strategy (2006) set a target to stabilise Northern Ireland's Ecological Footprint by 2015 and reduce it thereafter. The Department of the Environment commissioned *Northern Visions: Footpaths to Sustainability*, a study by SEI and Envirocentre, which explored a range of scenarios for footprint reduction<sup>13</sup>.

## **UK – One Planet Economy**

WWF UK is working with SEI on a report which will provide a vision, targets and an evidence base for the “One Planet Economy” in the UK. It will outline some alternative pathways towards the One Planet targets for carbon and ecological footprint, to respond to a range of future conditions. It will also demonstrate for key sectors the ‘resource flow analysis’ of supply chains and policies, to inform footprint reduction.

### **Conclusion:**

WWF welcomes the Scottish Government's commitment to reduce Scotland's ecological footprint and to incorporate carbon into policy-making. We urge the government to undertake these studies in tandem, and include projections into the future, so we understand the scale of the challenge and what policies can be put in place to set us on a downward trend. The research should include the following elements:

- formal linkage between the Ecological Footprint research and the Carbon Accounting Project
- time series for the Scottish Ecological Footprint and Carbon Footprint<sup>14</sup> for 1990-2006
- policy scenarios to 2020 to show the footprint reduction potential of present and future policies and exploring links between economic growth and consumption
- policy scenarios to 2050 to demonstrate the potential to achieve a One Planet Scotland

Current projections suggest Wales' ecological footprint could **increase by as much as 20% by 2020** under present policies. Similar trends are in place for Scotland. Scotland must act now to reverse this trend.

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<sup>13</sup> *Northern Visions: Footpaths to sustainability*, June 2008 <http://www.s-r-i.org.uk/research/northern-visions.html>

<sup>14</sup> This analysis will also be able to show direct or production greenhouse gas emissions