

Research Project: Sustainability Indicators & Impacts: Measuring Sustainability.

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Background:

The pursuit of sustainability for businesses or public sector organisations depends partly on the ability to measure key sustainability impacts and to develop meaningful indicators. This allows progress to be measured and managed, and supports modelling, forecasting and the testing of alternative strategies to develop more sustainable consumption and production systems. The development of sustainability indicators represented an element of several other BRASS research projects including developing indicators for cars (see A1), for food supply chains (see A7), tourism (see A24), arts and sports organisations and events (see A25), and for social enterprises (see A37). The development of indicators more generally also represented a specific area of project work in its own right, although work on ecological footprinting was also substantial enough to represent a separate project (see A23).

Aims and objectives:

- To develop and trial indicators that would allow organisations to more comprehensively and effectively measure and manage progress towards sustainability.
- To support the implementation of new sustainability indicators by stakeholder organisations.

About the research:

There were three main elements to this work (along with the indicator based contributions to other projects as mentioned above) which largely involved the trialling of sustainability indicators within and for Wales, as part of supporting the Welsh Government's pioneering efforts to implement sustainability across all areas of policy.

- Environmental extensions to Economic Input-Output Tables: Conventional Input-Output tables provide a financial picture of an economy, showing domestic and international trade flows between different industries, consumers and government sectors during a particular year. This accounting framework enables inter-industry transactions (sales and purchases) to be mapped and quantified, enabling detailed descriptions of economy interactions, whilst manipulation of these tables allows the effects of changes in that economy to be estimated, via calculation of economic multipliers. Regionally derived information on greenhouse gas emissions (as well as waste arising) has recently become available, and this can be combined with information from the Welsh Input-Output tables to create an environmental module. This work is being currently extended to cover regional carbon accounting for Welsh tourism and to develop methodologies for inter-regional carbon accounting.
- Index of Economic and Social Welfare for Wales: There has been a considerable focus in recent years on the development of alternative indicators to provide a more complete picture of social progress than the crude total economic activity calculator represented by GDP. BRASS researchers were involved in developing and testing an Index of Economic and Social Welfare for Wales for the Countryside Council for Wales.
- Environmental indicators for Wales: In 2006 BRASS was commissioned by the Welsh Government to develop national level environmental indicators for the new Welsh Environment Strategy *Our Environment Our Future*. The 215 page report generated for the Welsh Government provided the basis for a comprehensive set of indicators to be used at the Wales level to measure progress towards environmental sustainability.
- Sustainability indicators for the mining industry: Complementing BRASS work on CSR and environmental reporting in mining (see A42) was work on mining indicators.

Results and outputs: The work on input-output (IO) frameworks demonstrated how regionally derived information on emissions and natural resources can be integrated to generate the direct and indirect volume of the given pollutant generated by changes in final demands in each industry. The significance of the IO framework is that it allows one industry's production to be linked with another industry's pollution creation. Environmental extensions to basic IO tables provide a statement of environmental account, allowing investigation of trade-offs between selected environmental effects and industrial development, and could inform the production of economic, waste and natural resource strategies. In the case of the ISEW BRASS work demonstrated the practical potential of such measures to complement existing economic and sustainability indicators.

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Impacts achieved/potential for impact: The BRASS work on developing alternative economic indicators and on environmental indicators were both fed directly into the policy-making process within Wales, and the potential for a switch towards alternative indicators was the focus of a public debate with policy makers sponsored by the ESRC. The IESW provided a significant challenge to policy makers since it highlighted important qualitative dimensions of social and economic progress in Wales and the extent to which economic growth was not necessarily being matched by qualitative improvements in life overall. The BRASS work also formed the basis of a briefing given to a visiting Russian delegation on developing sustainability indicators. The IO framework methodology has the potential to generate policy simulations and a more holistic set of 'inputs' to predict possible wider outcomes on other sustainable indicators or tools, and to support planning and evaluation processes.