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Comparative merits of consuming vegetables produced locally and overseas: Fair and evidence-based carbon labelling

A Rural Economy and Land Use Programme research project investigating the advantages and disadvantages of consuming locally produced fruit and vegetables, compared with crops grown overseas and imported.

Policy and Practice Notes

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Carbon accounting and labelling for food products are new factors for producers and consumers to take into consideration, and they may have serious implications for developing countries which export food. This kind of labelling is extremely complex, and in order to provide useful information it must include an analysis of the entire lifecycle of the product.

How will the food sector respond to climate change?

The food sector includes producers, retailers and regulatory bodies:

- Producers may respond to the challenge of climate change voluntarily. They might consider this is good for their public relations and makes their products more attractive to consumers.
- Governments may encourage companies to reduce their emissions. Such action may also help governments meet their international obligations for reductions in greenhouse gases.
- Retailers may opt only to stock products which achieve a certain 'standard' in terms of their carbon footprint.
- Retailers and producers may label products with information about the carbon footprint, thus enabling consumers to make choices.

How do we measure carbon footprints?

At least 16 different methodologies for calculating the carbon footprint of food products have been developed since 2007, but as yet there is no international agreement on the single best method. Harmonisation may be difficult to achieve as:

- Designers of the schemes must respond to policy and corporate agendas.
- Knowledge about emissions from agriculture is incomplete, particularly in relation to products imported from developing countries.
- Such schemes do not take into account wider environmental and social issues and so are not necessarily indicators of overall sustainability; this is important because if consumers in developed economies respond by avoiding products from developing countries this may lead to unintended consequences.

What are the implications for developing countries?

The introduction of carbon-labelling could have particularly serious, and often unfair, implications for developing countries which export food crops because:

- They tend to be distant from their markets and depend on long-distance transport.
- Some crops in developing countries suffer from low and variable yields, which mean that their carbon footprint, expressed as per unit weight, is high.
- Growing food for export is a new enterprise for many developing countries, so they have to clear land for this purpose. Some carbon accounting methods take this into account, pushing up the carbon footprint.
- Many tropical countries export tree crops such as coffee, cocoa, tea, fruit and nuts. Trees and forest soils sequester carbon but this is not generally recognised in carbon accounting systems.
- Because we lack data on developing countries' carbon emissions, carbon accounting may be based on incomplete and imprecise data sets that relate to very large geographic areas, masking important differences between countries or regions.
- Some commodities, such as sugar, are sold as blends from several countries. This makes carbon accounting difficult and may result in worst case figures being applied.
- Developing countries tend not to process the food they export. This means that they not only lose out on adding economic value but also forgo potential "carbon advantages" which could accrue from using renewable energy, low capital inputs and a shift from air to sea transport for less perishable products.
- Analysts calculating the carbon footprints of food items grown in developing countries may have an incomplete understanding of the agricultural practices, as they are likely to depend on the results of questionnaires and standard databases, rather than visiting farms and processing plants.

How could carbon footprinting be made more development-friendly?

Steps could be taken to reduce the overall carbon footprint of foods produced by developing countries, thus reducing their disadvantages:

- Increasing yields and decreasing crop variability would reduce carbon footprints.
- More processing of food could be carried out within producer countries, thus enabling goods to be transported by sea instead of by air. This would also bring economic benefits to developing countries, and wider carbon efficiencies would occur, if processing in developing countries uses less energy than it would if carried out in developed countries

But a carbon footprinting scheme would also need to address potential discrimination against developing countries in the way that information is gathered:

- Products from Europe and North America could be required to declare the greenhouse gas emissions that would be emitted if native forest were being converted to agriculture today.
- Footprints should include capital inputs; exclusion can comparatively disadvantage developing country producers who may use human labour instead of machines.
- Carbon sequestered in tree and bush crops and the additional carbon contained in soil under agro forestry systems could be included in footprints.
- Small-scale producers, producer cooperatives and traders should have training and support in accurately recording inputs and yields, so that they are not disadvantaged when they compete with well-resourced large-scale enterprises.

It would be necessary to rethink the databases used and how they are compiled and maintained:

- More precise and accurate databases of land use and emission factors for developing countries need to be available.
- Emissions databases for different agri-ecological zones would be an efficient first step towards better, more geographically specific information.
- A database of worst cases by region is needed so that when other data are not available calculations do not have to be based on global worst case scenarios.
- There should be a single, easily accessible database of all the information needed for carbon footprinting agricultural products.
- All calculations of carbon footprints being used in labelling schemes should also be published on a public database, including all assumptions that have been made in the calculation. This should also state whether consultants have actually visited the countries and farms analysed and should recognise the subjectivity and uncertainty involved.

It would be helpful if the information shown on labels and in databases was more detailed, in order to help consumers make informed choices and drive change:

- If footprints showed the relative importance of different phases of the whole lifecycle of the product, including the user phase, consumers could then see that although products such as coffee, for example, have a relatively high footprint, much of this occurs in the home, rather than being attributable to producers in developing countries.
- More specific information about different stages of the product's lifecycle would provide a greater incentive for individual businesses to reduce emissions, thus encouraging innovation along the food chain.
- Carbon footprinting needs to be considered within the context of overall sustainable development. A more rounded picture of development could be obtained by using them to develop wider indicators, for example: carbon emitted per person employed in the production phase, carbon emitted per dollar generated in households with incomes less than $50 pa.

Further information

The research has been carried out at Bangor University and the University of Surrey. This policy and practice note is based on a report prepared by Gareth Edwards-Jones, Katrin Plassmann, Nicola Attarzadeh, Andrew Norton, Paul Brenton and Michael F Jensen for the World Bank.

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Useful resources:

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Project Website: http://relu.bangor.ac.uk/

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