

Some Benefits and Drawbacks of Local Food Systems

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Bioregional Connections to Sustainable Foodsheds

The basic challenge for a more sustainable agriculture is to make best use of available natural and social resources. Farming does not have to produce its food by damaging or destroying the environment. Resource-conserving technologies allow farmers to be productive and earn a living whilst protecting the landscape and its natural resources for future generations. Farming does not have to be dislocated from local rural communities, as sustainable agriculture, with its need for increased knowledge, management skills and labour, offers new upstream and downstream job opportunities for businesses and people in rural areas. This suggests a logical need to emphasise agriculture's connections to local ecologies and communities.

Today, those of us who are not farmers express our connections with nature in combinations of three ways - by visiting it, by joining organisations, and by eating the food. First we visit and observe it, walk in it, bathe in it, occasionally at weekends or on annual holidays, sometimes daily whilst walking the dog. Each year in the UK, we make more than 500 million day and overnight visits to the countryside and seaside, spending a total of £14 billion in local economies. This is more than four times as great as government subsidies to farmers. The choices made on these visits affect the supply of goods and services, whether directly in the form of food, or indirectly in the form of landscapes¹.

We also join organisations whom we feel are engaged in activities to protect, conserve or regenerate those aspects of nature or countryside we value. Environmental, heritage and countryside organisations have now become some of the largest membership organisations in industrialised countries. In aggregate, they have overtaken political party membership, and are second to trades unions².

Perhaps most importantly because it is a daily activity, we eat the food produced from farms that are shaping nature on a daily basis. We vote once every two, three or four years, yet we shop every week, or even every day. We must have food, and in having it we also encourage the system of production that brought it from land to larder. This means that the food system as a whole deserves description as something that belongs to us all - yet in an unrestrained or unregulated context, the tragedy is that we over-consume and under-invest in these commons. Worse, we appear not to appreciate the consequences.

When food is a commodity, there is little to stop over-consumption. There are no checks and balances to have us worry about the hidden costs of certain types of food production. Our current food system, despite considerable performance improvements in recent decades - it

is faster, fitter and more streamlined - is still flawed. It simply is not working to the advantage of its six billion people. There is hunger at the tables of 800 million people. At the same time, there is obesity in about the same number. This cannot be right, yet, by our action, it already is accepted. However, collective action by producers of food, by consumers, and by novel mixtures of both groups can make a difference. It is possible to create new forms of relationship, trust and understanding, leading to new cognitive constructions of food and its cultures of production.

The Shrinking Food Pound

The modern agricultural revolution contains the seeds of its own destruction. At the turn of the 21st century, farming is now in crisis all over the industrialised world. How can this be? An industry showing extraordinary growth in productivity, sustained over decades, yet having lost public confidence owing to persistent environmental damage and growing food safety concerns. The food that is supposed to sustain us is now a source of ill-health for many, and the systems that produce that food damage the environment.

One of the reasons why farmers struggle is that the proportion of the food pound or dollar returning to farmers has shrunk. Fifty years ago, farmers in Europe and North America received between 45-60% per cent of the money that consumers spent on food. Today, that proportion has dropped dramatically to just 7% in the UK and 3.5% in the USA, but remains at 18% in France. So even though the global food sector continues to expand, now standing at one and a half trillion US dollars a year, farmers are getting a relatively smaller share.

Over time, the value of food has been increasingly captured by manufacturers, processors and retailers. Farmers sell the basic commodity, and others add the value. As a result, less money gets back to rural communities, and they in turn suffer economic decline. A typical US wheat farmer, for example, receives six cents of each dollar spent on bread, about the same as for the wrapping. But if farmers are receiving such a small proportion of the food pound and dollar, what options do they have to increase incomes without causing further damage to the environment?

A Menu of Nine Options for Localising Food

1. Community Supported Agriculture (CSA)

In the USA, there are 1000 CSAs with 77000 member and \$36 million of income. The basic model is simple: consumers pay growers for a share of the total farm produce, and growers provide a weekly share of food of a guaranteed quality and quantity. Consumers typically pay two to five hundred dollars for a season's share. It has been established that members would on average have to pay a third more for the same food at a supermarket. One study in Massachusetts indicated that a \$470 share was equivalent to \$700 worth of produce if bought conventionally³. CSAs also encourage social responsibility, increase understanding of farming amongst consumers, and increase the diversity of crops grown by farmers in response to consumer demand. The central principle is that they produce what people want, instead of concentrating on crops that could give the greatest returns. In addition to receiving a weekly share of produce, CSA members often take part in life on the farm

through workdays. Many CSA farms give out newsletters with the weekly food share, so that members stay in touch and know what crops are expected. Some 60% of CSA farmers say that the most successful aspect of their operations is the strengthened bonds with food consumers.

2. Box Schemes

In the UK, there are 20 large schemes and another 280 small ones are supplying some 60,000 households weekly⁴. These schemes have brought back trust, human scale and a local identity to food. It is the linkage between farmer and consumer that guarantees the quality of the food. Farmers also employ more people per hectare, and provide livelihoods for farm families on a much smaller area than conventional farming. Prices are comparable to those in supermarkets for conventional vegetables, so consumers do not end up paying premiums. A central rationale for both CSAs and box schemes is that they emphasise that payment is not just for the food, but for support of the farm as a whole. This encourages social responsibility, increases the understanding of farming issues amongst consumers, and results in greater diversity in the farmed landscape.

3. Farmers' Groups

Another way that farmers can create new value in agricultural systems is to work together in groups. For as long as people have engaged in agriculture, farming has been at least a partially collective business. Farmers have worked together on a host of activities that would be too costly if done alone. Such connections also make it easier for individuals to cross a new frontier together. There is so much that can be done with sustainable agriculture, yet it is somehow so difficult to bring about. When there is cooperation and trust, then it is possible for new learning mechanisms to be established. Self-learning is vital for agricultural sustainability. By experimenting, farmers can increase their own awareness of what does and does not work, and if many do this together, then they rapidly multiply their learning potential.

4. Consumer Groups and Cooperatives

Consumer groups are an important way to get good food to urban groups with no direct access to farms and the countryside. The Glasgow Healthy Castlemill co-operative serves 3000 tenants in estates with high unemployment and high levels of heart disease, buying wholesale and selling to local people with a 1% mark-up. The Birmingham Organic Roundabout supplies organic foods to urban customers, now sourcing from 36 Herefordshire organic farmers, supplying 3000 regular customers, and employing fifteen full-time employees. Direct links between consumers and farmers have had spectacular success in Japan, with the rapid growth of the consumer co-operatives, *sanchoku* groups (direct from the place of production) and *teikei* schemes (tie-up or mutual compromise between consumers and producers)⁵. This extraordinary movement has been driven by consumers rather than farmers, and mainly by women. There are now some 800-1000 groups in Japan, with a total membership of 11 million people and an annual turnover of more than US \$15 billion. These consumer-producer groups are based on relations of trust, and put a high value on face-to-face contact. Some of these have had a remarkable effect on farming, as well as on other environmental matters.

5. Farmers' Markets

Farmers' markets are a simple idea, already spreading rapidly in both North America and the UK. Sell your produce directly to a consumer, and you get 80-90% of the food pound instead of the paltry 8-10% through normal marketing mechanisms. Some farmers already do this through farm shops and pick-your-own enterprises, of which there are 1500-2000 in the UK, and others use direct sales by mail and via the internet. In the USA, there were nearly 2900 farmers' markets registered with the US Department of Agriculture in the year 2000, though some suggest there are as many again operating at the local level. The annual turnover is more than one billion dollars, again income going directly into the pockets of the 20,000 farmers selling their produce. The USDA estimates that 6700 of these farmers now use farmers' markets as their sole marketing output. Each week, about a million customers visit farmers' markets, nine-tenths of whom live within 11 km of the market⁶.

In the UK, there were 200 established Farmers' Markets trading on some 3000 market days per year in early 2001. In all, it is estimated that the five million customers at these markets each spent £10-15 per visit, so putting £50-78 million pounds directly into the pockets of farmers. Importantly, too, these markets are a direct connection between producer and consumer. This may seem obvious for a business, and yet it is radical for many farmers. These farmers' markets, though, are unlikely to cause a major change in the way that most farmers market their produce. They are no answer for bulk commodities, nor will they substitute for contract sales to manufacturers and retailers. However, they do point to a vitally-important principle. Where there are direct links between producers and consumers, then farmers are better able to respond to the concerns of consumers, and consumers in turn understand better the challenges and vagaries of food production.

6. Community Gardens

In developing countries, 100-200 million urban dwellers are now urban farmers, providing food some for at some 700 million people⁷. In some Latin American and African cities, up to a third of vegetable demand is met by urban production; in Hong Kong and Karachi it is about half, and in Shanghai over 80%. In the UK, homegardens and allotments have long been important for home food production. In 1944, 120,000 hectares of allotments and gardens produced 1.3 million tonnes of food, about half of the nation's fruit and vegetable needs⁸. Today, there are 300,000 allotments on 12,150 hectares, yielding 215,000 tonnes of fresh produce every year⁹.

There are now several hundred city farms or community gardens in the UK. They provide of food, especially vegetables and fruit, for poorer urban groups, and a range of other natural products such as wood, flowers and herbs. They add some local value to produce before sale. They sometimes mean that derelict or vacant land is transformed into desirable areas for local people to visit and enjoy, resulting in the creation of quiet tranquil places for the community that can increase wildlife. The involvement of schoolchildren can mean a reduction in vandalism, as well providing local children with an educational opportunity to learn about farming and animals. They also provide the opportunity for mental health patients to engage in work that builds self-esteem and confidence, and for unemployed people to use their time productively in their own community.

7. Clear Labelling

Although organic products have long been clearly labelled for consumers, it is only recently that there has been an expansion in the range of 'eco-labels' on food. The question consumers are increasingly asking is: can the food on the shelves be trusted? Eco-labels are important, as they tell consumers something about the way that the food was produced. They allow growers and processors to be rewarded for using environmentally-friendly production processes. They also permit consumers to express their values whilst making purchases. If they work well, they help to push the food and agriculture industry towards more sustainable practices¹⁰. But many schemes have been criticised. One problem is that there are now so many that it is difficult to be sure what each guarantees. Another is that some labels give the impression that food is wholesome and produced in a sustainable fashion, yet may simply be no more than hollow labels. 'Farm fresh' and 'environmentally-friendly' may look good, but have no effect whatsoever on food production methods.

8. Food Webs and Local Shops

An inevitable consequence of the growth of supermarkets has been the sharp decline in 'corner-shops' in towns and village shops in rural areas. As a result, the number of specialist grocers, butchers, bakers and fishmongers is falling, with a total loss of some 1000 per year in the 1990s. Family-run grocer shops now account for only 12% of the vegetable market, whilst the supermarket share has grown from 8% in 1969 to 72% in the 1990s¹¹. When shops move out of towns and villages, something important is lost. The natural interdependence of small retailers, producers and consumers creates a dense social network that provides employment, good quality food and wider social benefits. Local shops are the social centres of communities – they keep an eye on the elderly and infirm, they provide notice boards for advertisements, they keep in touch with local people. They provide diverse foods and connect producers with consumer. One study of 81 food shops in East Suffolk found that they employed 548 people, of which 317 were part-time. They were also sourcing locally, buying from 295 local producers, ranging from large and small farmers, vegetable growers, wine producers, cheese and jam makers, village small-holders, beekeepers, and housewives making pies, soups and cakes.¹²

9. Slow Food Systems

The Slow Food movement began in Italy, arising out of local concerns over the fast food sector's increasing homogenisation and lack of responsibility towards local distinctiveness. It was founded by journalist Carlo Petrini in the mid-1980s, and now has 70,000 members in 45 countries seeking to protect local production from being driven into extinction by global brands. The idea of slow food gave rise in 1999 to the Slow City movement, which began in the four cities of Orvieto, Greve, Bra and Positano. The idea of slow and distinctive food, resonant of place and people, has been taken up by local authorities with commitments to increase pedestrian zones, reduce traffic, encourage restaurants to offer local products, directly support local farmers, increase green spaces in cities, and conserve local aesthetic traditions. Slow food and cities have given regionalised food systems and policies a name and a vision, and the cities are known as *Citta del Buon Vivere* – it is all about creating a good life.

The Benefits of Local Food Systems

The key challenge for localizing food is to ensure that any changes are not zero-sum, whereby benefits are simply transferred from one sector to another, or from one group of stakeholders to another. However, the empirical evidence to support the contention that local food systems result in positive sum gains is still patchy.

1. More Jobs?

- 1.1 There is some evidence of positive sum gains for jobs. Money remaining in a particular localized economy does more work if it is recycled through the purchase of local goods and services than if it leaks away to external economies.
- 1.2 The best research case in the UK comes from Devon. There are 900 food businesses in Devon, including processors, wholesalers, retailers and caterers. About 550 of these are now involved in the local food sector (half have joined in past five years). Devon Food Links project has set up 15 farmers' markets, 18 box schemes, made 19 links with local shops, helped 150 ha of land be converted to organic production, with the result of a net increase of 113 jobs. There have also been job increases on farm, with each producer involved in the local food economy employing on average 3.4 FTEs, compared with a regional average of 2.34 per farm. Some 38% of producers have created new jobs – at an average of 0.5 per farm, resulting in a further 171 new jobs¹³.
- 1.3 Another study of the jobs dividend through localized food was conducted by the New Economics Foundation. This found that £10 spent on a local organic box scheme in Cornwall generates £25 for the local economy (a radius of 24 km from the farm), compared with £14 if spent in a supermarket. The research suggested that if every person, tourist and business switched only 1% of their current spending to local goods and services, an additional £52 million would be put into the local economy annually.
- 1.4 The National Retail Planning Forum investigated the effect on jobs in food retailing following the opening of 93 edge-town supermarkets (Porter and Raistrick, 1998). Over a four year period, there was a net loss of 276 jobs in a 10 mile radius of each store (though, see Fell, 1999, for another view).

2. Food Swaps and Food Miles

- 2.1 Agriculture and food systems are significant contributors to greenhouse gas emissions, which in turn are driving climate change. There are two important issues to address – the food swaps and the real cost of food.
- 2.2 One outcome of the growing centralisation of the food chain is the increase in unnecessary movements of food, both within and between countries. In the US, it has been estimated that each item of food travels 2000 km from field to plate, causing damage to the environment through fossil fuel emissions during transport and greater congestion on the roads. There are also many unnecessary food-swaps between countries, with large amounts of the same products being imported and exported to and from the same countries. The UK, for example, exports 213,000 tonnes of pig each year,

yet also imports 272,000 tonnes, resulting in a large number of unnecessary road movements (Table 1).

Table 1. The UK's food swap to and from EU-14 and rest of the world in the year 2000

Sector	Domestic production in UK (thousand tonnes)	Exports to EU-14 and rest of world (thousand tonnes)	Imports from EU-14 and rest of world (thousand tonnes)
Poultry	1514	170	363
Pigs	738	213	272
Cattle/calves	706	9	202
Sheep/lambs	390	125	129
Milk (million litres)	14054	423	124
Wheat	16700	3505	930
Barley	6490	1730	51

Source: Pretty, forthcoming, using DEFRA Annual Statistics, 2001

2.3 Each stage of the food system, from the production of inputs for farming through to processing, transport and retailing to consumption, produces a range of negative side-effects. A forthcoming study from the University of Essex has used recent data on total farm externalities (the negative environmental and health costs of modern agriculture), combined with new analyses of the environmental costs of transporting food, to calculate the aggregate externalities arising from the weekly British food basket¹⁴. These are calculated for two production scenarios (conventional and organic) and four transport scenarios (all locally-sourced food; national by road; national by rail and road; and global by ship and air). When externalities are included, the cost in Britain of an individual's weekly food basket rises by 3% from £16.94 to £17.46 if organic-locally sourced, and rises by 16.3% to £19.69 if conventional-global. Transport externalities are smaller than on-farm externalities for all but one scenario (organic-global); rail is cheaper than road, and ship cheaper than air.

2.4 There are several key conclusions:

- i) Externalities account for 9-16% of the real cost of a food basket for conventionally-produced food, and 3-10% for organic;
- ii) Transport externalities are smaller than on-farm externalities for all but one scenario (organic, global) – from a low of £0.004 for local food to a high of £1.19 for globally-sourced; in all of the four conventional scenarios, transport costs are less than farm externalities;
- iii) Global-sourcing substantially increases external transport costs – they are 300 times greater than for locally produced foods. Transport costs are 70% of total external costs for organic, and 43% for conventional (though farm costs are lower for organic);
- iv) The combined rail and road option for national transport is 23% of the road-only option, though this does not translate into a significant difference in real cost for the food basket (as farm costs are much higher);

- v) The cheapest food basket is organic-local (externalities are 3% of shop costs), and the most expensive is conventional-global (externalities are 16.3% of shop costs).

Table 2. The real weekly costs of food and drink in the UK (preliminary findings)

Modes of production and transport	Expenditure on food and drink (£ per person per week)	External cost from farm (£)	External cost from transport (£)	Total external costs (£)	Real cost of food (price + externalities)	Externalities as % of price paid by consumers (%)
Conventional local	16.94	1.563	0.004	1.57	18.51	9.3%
Conventional national road	16.94	1.563	0.096	1.66	18.60	9.8%
Conventional national rail and road	16.94	1.563	0.022	1.59	18.53	9.4%
Conventional global-continental	16.94	1.563	1.190	2.75	19.69	16.3%
Organic local	16.94	0.516	0.004	0.52	17.46	3.0%
Organic national road	16.94	0.516	0.096	0.61	17.55	3.6%
Organic national rail and road	16.94	0.516	0.022	0.54	17.48	3.1%
Organic global-continental	16.94	0.516	1.190	1.71	18.65	10.1%

Source: Pretty et al, forthcoming

3. Trust and Connectedness in the Foodsheds

3.1 Two concepts are useful in the rethinking about food systems – the ideas of bioregions and foodsheds. Bioregionalism implies the integration of human activities within ecological limits, and bioregions are seen as diverse areas with many ecological functions. Bioregionalism can thus be seen as a self-organising or autopoietic concept, which connects social and natural systems at a place people can call home. Bioregions are real places where people want to live. They take years to build, emerging from the interactions of people who are not indifferent to the outcomes. People leave their mark, and in turn are shaped by local circumstances and cultures. They shape their worlds. The term foodshed has been coined to give an area-based grounding to the production, movement and consumption of food. Foodsheds have been described by Jack Kloppenberg as “*self-reliant, locally or regionally based food systems comprised of diversified farms using sustainable practices to supply fresher, more nutritious food stuffs to small-scale processors and consumers to whom producers are linked by the bonds of community as well as economy*”¹⁵.

3.2 The basic aims of regionalised foodsheds are twofold. They shorten the chain from production to consumption, so eliminating some of the negative transport externalities and helping to build trust between producers and consumers, and ensuring more of the food pound gets back to farmers. They also tend to favour the production of positive environmental, social and health externalities over negative ones through the use of sustainable production systems, leading to the accumulation of renewable assets throughout the food system. We lack, however, the comprehensive evidence to show the benefits.

Some Unanswered Questions

Local food systems sound good. They offer three types of benefit:

- i. environmental benefits through more sustainable production systems and reduced transport externalities;
- ii. economic benefits through greater incomes for farmers and more financial contributions to local economies;
- iii. social benefits through greater trust and connectedness between and within consumers and producer groups.

But there remain several unanswered questions that may reduce the likelihood of these systems turning out to have positive sum gains.

i. Problems with diseconomies of scale

How do small and localized producers compete with the largest of transnational corporations (can a small livestock producer ever compete with a feedlot with 100,000 animals)?

How can corporations be encouraged to adopt a social and environmental ethic?

ii. Problems with personal work benefits and aspirations

Is there a danger of promoting a parochial image of 'traditional' rural idylls in the context of localised food, when many people's aspirations may be to gain sufficient resources to leave?

How can professional development in small businesses be encouraged, when the best individuals will be attracted by greater income opportunities elsewhere?

In locations of labour shortage, how can labour-absorbing approaches to local food systems work?

iii. Problems with upstream and downstream jobs

How many jobs will be lost in the upstream input supply industry and in the downstream transport, packaging and processing businesses if more of the food pound returns to farmers through local food systems?

If supermarkets do result in net losses of jobs to local economies, what patterns of development can support both local food shops and markets and supermarkets – both of which people want and need for different reasons?

iv. Problems with energy efficiency

How can small businesses be encouraged to become more energy efficient when the unit cost of conversion is so high?

What schemes could help in energy efficiency and use of renewables?

v. Problems with pathogenic bacteria

Can localised food production and consumption reduce the burden of pathogens, or will hygiene regulations be too much of an added cost burden (pathogenic bacteria are now the major health hazard in food systems, with food poisoning affecting 2 million people per year in the UK and 76 million in the USA)?

vi. Problems with policies

What policies can be developed to encourage the regionalisation and localisation of food systems, resulting in positive sum gains?

What research is still needed to understand the full costs and benefits of alternative food systems?

Endnotes

¹ Data for visits and expenditure in the UK countryside comes from the Countryside Agency (2001) and English Tourist Council (2000), who use the UK Leisure Day Visits Survey and UK tourism surveys to calculate the number of visits made to the countryside for leisure and recreational activities. In 1998, some 1.261 billion tourist day visits were made, of which 72% were to towns, 6% to the seaside, and 22% to the countryside. In addition to day visits, a further 172 million tourist trips are taken by UK and overseas residents, in which one or more nights are spent away, totalling 707 million days. Thus there were 433 million visit-days to the countryside. Average spend per day/night is £16.90 for UK day visitors, £33.00 for UK over-night visitors, and £58.40 for overseas over-night visitors, putting the total spend at £11.02 billion per year.

² In Britain, both the Royal Society for the Protection of Birds (more than one million members) and the Wildlife Trusts (300,000 members) now own large amounts of land, both reserves and farms, and are demonstrating that positive management can make a difference. The largest landowner in the UK after the crown is the National Trust, which owns 275,000 hectares and has 2.5 million members. The economic and political power of these organisations comes from the membership base. In the USA, the Sierra Club has 600,000 members, the National Audubon Society 550,000 members and the Wilderness Society 200,000 members. The oldest environmental or countryside group in the UK is the Open Spaces Society, established in 1865, and set up to protect commons in metropolitan areas.

³ ATTRA, 2000. [At URL www.attra.org/attra-pub/csa.htm]

⁴ The attributes of box schemes are similar to North American CSAs, though CSAs generally expect a higher level of commitment from consumers. There has been no recent evaluation of box schemes in the UK, but Greg Pilley and colleagues of the Soil Association estimate that the 20 large schemes have up to 1200 customers each, and the 280 smaller ones an average of 200

customers, putting the total at 80,000. Their judgement is that this may be optimistic, and thus 60,000 is adopted here. For further details of UK CSAs and box schemes, see Soil Association. 2001. *A Share in the Harvest*. Bristol.

⁵ Furusawa K. 1994. Cooperative alternatives in Japan. In: Conford P (ed). *A Future for the Land: Organic Practice from a Global Perspective*. Resurgence Books, Bideford

⁶ For US farmers' markets, see [At URL www.ams.usda.gov/farmersmarket/facts.htm]. Also Burns and Johnson, 1999, Farmers' Market Survey Report. USDA [At URL www.ams.usda.gov/directmarketing/wam024.htm]; Rominger, 2000

⁷ Schwarz D and Schwarz W. *Living Lightly: Travels in Post-Consumer Society*. Green Books, Bideford. Cook C D and Rodgers J. 1996. Community food security: a growing movement. *Global Pesticide Campaigner* Vol 6(3) 1, 8-11. Smit J and Ratta A. 1995. *Urban Agriculture: Neglected Resource for Food, Jobs and Sustainable Cities*. UNDP, New York

⁸ Garnett T. 1996. *Growing Food in Cities*. National Food Alliance and SAFE Alliance, London

⁹ G W Stokes, pers. comm. National Society of Allotment and Leisure Gardeners. The American National Gardeners Association estimates that some 35 million people are engaged in growing their own food in back gardens and allotments. Their contribution to the informal economy is \$12-14 billion per year. Private gardeners cultivate mostly to produce better tasting and more nutritious food, but also to save money, for exercise, and for therapy. It makes them feel better. This is particularly true of community gardens which seek to enhance both food production and social benefits. In New York, 87% of community gardeners invest their time in gardening so as to improve the neighbourhood, 75% for fresh vegetable production, 62% for fun, and 42% to save money. Weissman J (ed). 1995. *City Farmers: Tales from the Field*. GreenThumb, New York; Weissman J (ed). *Tales from the Field. Stories by GreenThumb Gardeners*. GT, NY. ThumbPrint, *passim*. GreenThumb News, Parks and Recreation, City of New York, New York

¹⁰ Lang T. 1995. The contradictions of food labelling policy. *Information Design Journal* 8/1, 3-16. MacRae R. 1997. Eco-labelling: too great a threat to the food industry. Mimeo, Toronto, Canada

¹¹ Hughes D. 1996. Dancing with an elephant: building partnerships with multiples. Paper presented at *The Vegetable Challenge* conference, London, May 21. The Guild of Food Writers

¹² Cranbrook C. 1997. *The Rural Economy and Supermarkets*. Great Glemham, Suffolk

¹³ Devon County Council. 2001. *Local Food and Farming Briefing*. Policy Unit, Exeter

¹⁴ See Pretty J, Brett C, Gee D, Hine R, Mason C F, Morison J I L, Raven H, Rayment M and van der Bijl G. 2000. An assessment of the total external costs of UK agriculture. *Agricultural Systems* 65 (2), 113-136

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¹⁵ Kloppenborg J. 1991. Social theory and the de/reconstruction of agricultural science: a new agenda for rural sociology. *Sociologia Ruralis* 32(1), 519-548; McGinnis M V (ed). 1999. *Bioregionalism*. Routledge, London and New York; Dryzek J. 1997. *The Politics of the Earth: Environmental Discourse*. Oxford University Press, New York and Oxford