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Article Title: Just and Sustainable? Examining the Rhetoric and Potential Realities of UK Food Security

Year of publication: 2011

Link to published article:

<http://dx.doi.org/10.1007/s10806-011-9304-8>

Publisher statement: The original publication is available at www.springerlink.com

Just and sustainable? Examining the rhetoric and potential realities of UK food security

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Abstract

The dominant discourse in 20th century UK food and agricultural policies of a liberal, free trade agenda was modified at the turn of the 21st to embrace ecological sustainability and 'food security'. The latter term has a long international history; the relationship between issues of technical production and equality of distributional access are also much debated. The paper examines shifts in UK policy discourse in the context of international research, policy and initiatives to promote food security, and highlights the implications for social justice in and through the food system.

Key words

food security; UK government; Defra; food policy; social justice

Introduction

'Food security' has re-emerged in international discourse as a way of framing responses to the food price spike in 2007-8 and anxieties about social and environmental sustainability of the food system in the face of global climate change and security of key resources (land, water and fossil fuels), among many other issues (Garnett, 2008; Roberts, 2008; Mittal, 2009; Winter and Lobley, 2009). For example, in 2009, the G8 located food security as an issue of national security, within a framework of input intensive agricultural production and market-based solutions, arguing that 'food security is closely connected with economic growth and social progress as well as with political stability and peace' (AFSI, 2009 p2). While the value and likely success of such a technological approach in meeting the needs of all populations fairly is disputed (see IAASTD, 2008; Cordoba Group, 2009; UK Food Group, 2010), the UK Government, as a member of the G8, has been no exception in its approach. It has built on its policies on sustainable food to address food security concerns, while retaining elements of a neoliberal agenda where market efficiencies determine results. On some grounds however, policy towards food security represents a shift in discourse: while 'sustainability' has been central to UK policy discourse on food and farming since at least 2002 (Defra, 2002), 'UK food security' was arguably a pariah concept as recently as 2006, seen by government as synonym for national self-sufficiency, parochialism and agricultural protectionism. The rise to legitimacy of the term – indeed almost to dominance – as a framing concept has been striking and worth examination.

This change in the UK has taken place against the backdrop of forty to fifty years of international research, policy and practical initiatives to promote global and national level food security in the global South as a post World War II need, and particularly following the 'World Food Crisis' of the early 1970s (Shaw, 2007). Furthermore, while the definition of food security is recognised as shifting and contested in international development discourse, it has nevertheless been largely accepted as a broadly progressive agenda. Whether or not needs of the hungry are met in reality, there has for some time been acknowledgement from UN organizations and international NGOs alike that the social and nutritional needs of all people should be addressed in any food security analysis and interventions; in other words, that issues of fairness and equity are important. Such concern has seldom been explicit within the UK, where the operation of efficient markets in retail and employment, with a social welfare system to serve those lacking the latter, has been seen as sufficient to ensure all have access to enough appropriate food.

In this paper we explore the extent to which the UK government's newfound appetite for promoting 'UK food security' signals that domestic food policy debates are increasingly aligned with international approaches to food security, or whether UK policy remains wedded to a mixture of neo-liberalism and protectionism. In so doing we attempt to position the UK experience as one example of a government's efforts to respond to global food price rises in 2007-8, and to the accompanying upsurge in concern over the resilience of food supplies to short-term shocks and longer-term environmental or terrorist pressures and resource constraints. We examine the UK government's approach to the notion of 'food security', which has largely been a series of assertions and proposals to date, in the light of international experience and literature, in the hope of making explicit to both policy makers and to activists and/or consumers some of the implications for fairness and social justice in the UK stance. The paper begins by describing how food security has risen to apparent dominance within a 'sustainable food' agenda in UK policy. The second section reviews these developments in the context of international research, policy and initiatives to promote food security, which have largely focused on low-income countries. The subsequent three sections attempt to lay out for an international readership some of the details in the UK government's approach to food security at the global, national and household scales, and to examine these in the light of the international literature. The paper concludes with reflections on the nature of UK policy, and brief wider implications of this analysis for efforts to promote food security.

Food security and sustainability in UK policy

Food security and food system sustainability are both issues that combine domestic and foreign policy matters. In the UK, some aspects which fall under a 'food policy' remit are the responsibility of the UK government with negotiated response from devolved administrations (such as the Waste and Resources Action Programme [WRAP]; UK biodiversity support programme; animal vaccination strategies, etc¹), whereas others are devolved to the administrations of Scotland, Wales and Northern Ireland. Roles and responsibilities differ somewhat between these three, reflecting their different histories and economic circumstances. For instance, the Scottish Government, accountable to the Scottish Parliament, develops and implements policy in rural affairs (which encompasses farming, rural issues and sustainable development), health, education, justice and transport. Similarly, the Welsh Assembly Government has responsibility for environment, agriculture

¹ see Defra Departmental Report 2008 and 2009:

<http://www.defra.gov.uk/corporate/about/reports/documents/2008-deptreport.pdf>

and rural affairs, and the Northern Ireland Executive for agriculture and rural development, both with a range of other policy areas. Nevertheless, the UK ministries involved, principally the Department for Environment, Food and Rural Affairs (DEFRA), and Department for International Development (DfID) sometimes issue policy statements that relate to the entire UK, and at others, statements that apply only to England. The Scottish government has published a report on food security (The Scottish Government, 2009) and the Welsh Assembly Government has commissioned relevant research², but in this paper we focus on a single lineage of documents around food security from Defra, relating both to England and to the UK. This enables us to attempt to trace formal evolution of the UK government's approach to food security starting from its 2002 commitments to sustainable food production and consumption. There is a longer literature of commentary on national food self-sufficiency, not least following the experiences of World War II, but we have no space to consider it here.

Defra published a *Sustainable Farming and Food Strategy* (SFFS) for England in 2002; its aim was to address the long-term economic, social and environmental challenges facing the farming and food sectors (Defra, 2002) Others have written in more depth of preceding and continuing anxieties about the declining economic importance of agriculture within Europe and the UK, the demand for agricultural efficiencies to meet competitive global markets and conflicting needs for sustainable rural development, along with constant calls for Common Agricultural Policy reform, throughout the 1980s and 1990s (e.g. Marsden, 1998; Lowe and Ward, 2007). The SFFS was based on the recommendations of the Policy Commission on the Future of Farming and Food (2002), established to set a new agenda for agricultural and rural policy in the aftermath of the Foot and Mouth Disease outbreak of 2001. The strategy set out eight key principles for sustainable farming and food, such as to “respect and operate within the biological limits of natural resources” and to “support the viability and diversity of rural and urban economies and communities”. Further, it aimed to support these principles not only within the UK but “wherever our food is produced and processed” (Defra, 2002, p12). Nevertheless, for our purposes, one key issue is that environmental sustainability increasingly captured support which might have gone to rural development and/or maintaining national food production capacity (Lowe and Ward, 2007). Thus, although the SFFS technically remains in place at the time of writing, having been neither revoked nor formally superseded,

² Welsh Assembly Government set up a group in March 2009 to advise on how agriculture can meet the challenge of food security while reducing greenhouse gas emissions:

<http://wales.gov.uk/news/topic/environment/2009/2896254/?lang=en>

subsequent policy statements since 2002 have tended to continue the potentially confusing mixture of parochialism alongside a more neoliberal agenda . These include:

- A statement in 2005 of the UK's position in negotiations over the future of the European Union's Common Agricultural Policy (HM Treasury and Defra, 2005).
- An internal review of priorities in implementing the SFFS, four years after the strategy was originally published (Defra, 2006a).
- A cross-government review of food policy conducted by the government's Cabinet Office Strategy Unit (COSU), responsible for co-ordinating the work of government departments and agencies (The Strategy Unit, 2008).

The SFFS in fact touched on food security only in passing, but gave voice to a long term strand of thinking, namely that “the best way of ensuring food security is through improved trading relationships, rather than a drive for self-sufficiency” (Defra 2002, p10). This theme was reprised and extended in the UK government's *Vision for the CAP*, published by Defra and the UK Treasury in 2005 (HM Treasury and Defra, 2005). Here, again, government represented food security primarily as an issue relating to supply and argued that a liberal international trade regime was the most important mechanism for safeguarding it. It was overtly critical of the view – attributed to stakeholders – that national food security should imply greater levels of self-sufficiency (i.e. more of the food UK consumers purchase should be grown/reared within the UK and not imported).

In the words of Rt Hon. David Miliband MP, Secretary of State for Environment, Food and Rural Affairs from 2006, the *Vision for the CAP* was greeted by “a sharp intake of breath” from other EU governments.³ It was also severely criticised by UK stakeholders, who suspected that financial savings were the Treasury's main motivation for promoting a liberal agricultural policy agenda.⁴ In part as response to these concerns, Defra published an *Evidence and Analysis* paper on food security in 2006, which explored the relationship between domestic production and security more fully (Defra, 2006b). This paper introduced an array of additional considerations besides international trade liberalisation, including access to food, affordability, nutrition, quality, safety and consumer confidence, which is more in line with the international community's thinking on food security. Nevertheless, the free flow of food internationally remained central to Defra's analysis, and the

³ <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmenvfru/546/546ii.pdf> p77

⁴ <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmenvfru/546/546ii.pdf> p3, p203

Department remained bullish about the UK's performance to date and going forward. Indeed, the paper concluded:

“a discourse centred on ‘UK food security’ or ‘UK self-sufficiency’ is fundamentally misplaced and unbalanced. The real issues extend beyond the UK, beyond agriculture, beyond food.[...] As a multi-faceted, often second-order issue, the efficient policy framework for food security should seek to tackle any related problems directly.”(Defra, 2006b, p76)

Although many of the new elements introduced in the 2006 *Evidence and Analysis* paper remain present in the UK approach to food security three-four years on, there is nonetheless evidence of a shift in thinking within government. Indeed, in direct contrast to Defra's conclusion in 2006 cited above, ‘food security’ for the UK is now treated as a first-order issue and a legitimate focus for policy discourse. The stimulus for this volte face is cited as increased global food prices, which became a prominent cause for public and policy concern in the UK from 2007 onwards⁵ (see also Evans, 2008; Barclay, 2010). The major review of food policy by the government's Cabinet Office Strategy Unit (COSU), which had been commissioned in the autumn of 2007 to explore popular interest in food issues, responded to this new development by commissioning analysis of the causes and implications of global food price rises, and in its final report, *Food Matters*, published in July 2008, concluded that:

“recent increases in global commodity prices have brought to an end the long-term decline in the price of food, and few expect food prices to return to past lows” (The Strategy Unit, 2008: piii).

Food Matters thus placed ‘food security’ squarely on the UK food policy agenda. While the COSU emphasised that poor households in low-income countries were most vulnerable to higher prices, it nevertheless highlighted concerns that low-income households in rich countries such as the UK would also be affected by increases in the price of food (The Strategy Unit, 2008). The then Prime Minister, Gordon Brown, in his Foreword to the report, framed food security as a central policy objective, stating that the report provides:

“an overarching statement of government food policy that sets a benchmark for that action we must take – both in the UK and globally – to ensure our long-term food security, the

⁵ For attribution to global food prices see http://www.cabinetoffice.gov.uk/media/cabinetoffice/strategy/assets/food/food_matters1.pdf p8; for evidence of concern <http://www.food.gov.uk/multimedia/pdfs/publicattitudestofood.pdf>, p3

sustainability of food production and consumption, and the promotion of public health.”
(The Strategy Unit, 2008, pi)

This is probably the first time a UK Government document had brought together food supply issues, environmental and social sustainability, inequalities and public health. Nevertheless, despite this newfound emphasis on the relevance of food security to the UK, and the recognition that low-income households in the UK were vulnerable to the negative effects of food price rises, the COSU insisted that “the principal food security challenge for the UK is a global one” (The Strategy Unit, 2008, p34). The Prime Minister’s introduction emphasised the importance of the UK’s international role in combating price volatility and augmenting food production (The Strategy Unit, 2008, pi).

Food Matters trailed a further paper on food security from Defra, which was also published in July 2008: *Ensuring the UK’s Food Security in a Changing World*. In line with *Food Matters*, this paper agreed that food prices were a domestic as well as international issue, inasmuch as “[t]he impacts of rising global food prices are being felt in the UK, and the poorest are hit hardest” (Defra, 2008, p.18). While this paper traced its lineage to the 2006 *Evidence and Analysis* paper, it differed from that document in two key respects. First, by defining food security in line with international definitions as “consumers having access at all times to sufficient, safe and nutritious food for an active and healthy life at affordable prices” (Defra, 2008, p2), it treated food security as an outcome of effective demand. In 2006, by contrast, Defra had focused on supply, stating that “[c]onceptually, food security is about identifying, assessing and managing risks associated with food supply” (Defra, 2006b, p22). The second major change was in its attitude to domestic agriculture. Whereas, in the 2006 *Evidence and Analysis* paper, Defra had drawn heavy fire from producer interests for downplaying the importance to national or global food security of productive capacity in UK agriculture, in the 2008 food security paper, Defra explicitly linked UK production to food security globally and vice versa, stating that “UK food production needs to respond to growing global demand for food” (Defra, 2008, p19).

In August 2009, Defra took a further step towards treating food security as a primary concern within its strategy on sustainable food, and to endorsing the view that ‘UK food security’ is a central issue. Under the new banner of *Secure and sustainable food*, the Department published a suite of reports, which included a review of achievements during the previous 12 months in response to challenges raised by *Food Matters* and a “significant increase in activity [...] on food security, including access to, affordability and availability of food” (Defra, 2009a, p 1). Also published were a new parallel sets of indicators for ‘UK food security’ and for ‘sustainable food’ (Defra, 2009b, c).

These indicator sets had been trailed through workshop and online consultations over the previous year. They were accompanied by an initial assessment of UK food security, using a report card based on the indicator sets, and by an on-line debate about the future of the UK food system to 2030.⁶ This 2009 *UK food security assessment* reasserts the previous year's focus on food security as effective demand (although this terminology is not used), "ensuring the availability of, and access to, affordable, safe and nutritious food sufficient for an active lifestyle, for all, at all times" (Defra 2009b, p6), while also linking it to sustainable supply. The indicators of food security are set out under six themes (Defra, 2009c, p4): global availability; global resource sustainability; UK availability and access; UK food chain resilience; Household food security; Safety and confidence. Themes one and two are described as providing "the global context to UK food security"; themes three and four "focus upon the UK supply chain"; themes five and six focus on individual or household food security,⁷ or what Defra's 2009 assessment calls "the consumer perspective". Defra's summary of the indicators associated with each theme is reproduced in the Table 1, which is taken from the detailed analysis paper of food security assessment (Defra, 2009c, pp 2-3). Thus, efficient working of the global food system, national capacity (with all that implies for inputs, skills, marketing etc) and concern for household level continuity and sufficiency of access, are brought together in policy focus. The reports and initial assessments represent a considerable amount of imaginative work on Defra's part, and attempt to bring together systematically indicators which signal functioning of the food system in terms of factors affecting production, supply chains and household level practice.

International context for food security

The rapid rise to prominence for 'food security' in UK food policy has taken place against the backdrop of forty to fifty years of research, policy and practical initiatives to promote food security globally, particularly in low income countries. The UK government has played a part in that effort, primarily through its Department for International Development (DfID). Defra presents its approach

⁶ Defra launched an online discussion 'Food 2030' from 10th August to 16th October 2009, inviting discussion of challenges affecting the food system: "rising population, diminishing natural resources and climate change [...], diet-related ill health", and "to discuss the shape of the future food system [to be] better for the economy, for our environment and for our health and wellbeing."

⁷ Defra, 2006, 'evidence and analysis paper' separates "individual and household food security" (p.6)

<https://statistics.defra.gov.uk/esg/reports/foodsecurity/foodsecurity.pdf>

to 'UK food security' as consistent with this body of international work. In its most recent (2009a, b, c) package of reports, the terminology used is traced back to the *Evidence and Analysis* paper (Defra, 2006), in which six definitions from the international literature were reviewed, including that which has long been used by the United Nations Food and Agriculture Organisation (FAO), stated here from the World Food Summit declaration of 1996:

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” (FAO, 1996; cited in Defra, 2006b, p81)

Yet there is more to international work on food security than simply a definition. It represents a rich resource of evidence, case studies and analysis. The prominence and meaning of the concept in international development discourse has fluctuated over the decades since it was coined. Shaw's (2007) is probably the most comprehensive recent summary of its history and potential in the post World War II period, documenting the concept's morphing from a concern to feed the world's population appropriately, into a focus on stabilizing and monitoring supply and sustaining reserves, with subsequent shift to household level concerns. The post-war emphasis on improving the efficiency of food production and distribution, and contributing to expanding the world's economy, was in part motivated by memories of the 1930s, when food surpluses during the Depression had gone hand in hand with hunger and malnutrition in rich and poor countries. Sen's (1981) introduction of 'entitlement and access' emphasised the importance of effective demand, and the need to address poverty and development in the pursuit of global and national food security. The further inclusion of climate change, oil and water crises and market instabilities over the last decade completes the construction of 'food (in)security' as a 'wicked' problem, or, as Shaw puts it, at "the eye of the storm" (Shaw, 2007, p383).

Maxwell (1996, p156) cogently summed up other key shifts in thinking and definitions over time as "from the global and the national to the household and the individual; from a 'food first' to a livelihood perspective, and from objective indicators to subjective perception"; indeed he did much to promote this wider thinking within the international scene and literature.⁸ Although food security concepts have long been used to frame hunger internationally, household level analysis has also been used in the developed world, notably the US (Nord et al, 2007) and Canada (Tarasuk, 2001), to

⁸ Both as leader of the Food Security Unit at the Institute of Development Studies, University of Sussex and head of the Overseas Development Institute, London.

enable the subjective experience of those living in difficult material circumstances to contribute to understanding and policy response (Radimer, 2002).

The UK government's efforts to grapple with food security from a developed world perspective at first appear to have traced a similar but accelerated trajectory as the international work, inasmuch as Defra's approach has extended from a unbending focus on security of supply as a global trade issue, into a more complex analysis of production- and consumption-related indicators at the global, national, household and even individual scales. However, the context in the UK (as the US and Canada) remains quite different from the low-income countries in which the international development literature on food security has developed. In particular, UK households spend a much lower proportion of total income on food: in 2006, before the price rises, an average of 8.9% household expenditure, although the poorest decile spent 15%, compared with 50-80% in the global South (The Strategy Unit, 2008); and fewer than 1% of the population depend directly on agriculture or fisheries. Furthermore, the UK, in common with other developed nations, has a long-standing and highly sophisticated system of social safety nets (income and in-kind, including food) to support those unable to grow, purchase or otherwise acquire "sufficient food for an active and healthy life" (Riches, 1997). That there are nevertheless people who are remain food insecure is an issue of social justice which has seldom been addressed by the UK state (though see Nelson, 1997; Dowler et al, 2001).

The framing of food security is widely used in the global South to justify intervention to improve small farmer productivity and income earning capacity⁹, although there is growing research criticizing top-down, high technological approaches which ignore small farmer insights and capacities (e.g. Pretty and Hine, 2001; Thrupp, 2000), gender issues (e.g. Gladwin et al, 2001), and community food security from a focus on nuclear household constructs (e.g. Pottier, 1999). Furthermore, household food and nutrition security is the specific aim of more recent initiatives aimed at addressing clearly identified constraints, most notably in Brazil in the 'Zero Hunger' programme¹⁰ (Rocha, 2009; Meade and Rosen, 2003). In this ambitious programme, both cash transfers and support for family farms are harnessed to a household level security agenda; as elsewhere, more traditional nutrition support and school feeding programmes, no doubt set up with slightly different objectives, are also given a food and nutrition security label. In fact, 'nutrition security', as a

⁹ see for instance, FAO Special Programme for Food Security at <http://www.fao.org/spfs/en/>

¹⁰ www.fomezero.gov.br/download/Security%20Policy%20OK.pdf (accessed Oct 2010)

development of the concept of food security, has long been highlighted in the international literature to emphasise the interaction between food and health in producing poor nutritional status (e.g. Todd, 2004), and the critical need to ensure appropriate nutritional provision, both in distributional programmes and as an outcome of agricultural development and/or income generation (Gopalan, 1995; Bouis and Hunt, 1999, among many).

In what follows we briefly examine Defra's approach to food security, as of early September 2009, in the context of this international body of work. We consider in turn global, national and household scales as outlined in the Defra assessment framework, identifying the ways in which international perspectives support and challenge Defra's approach.

Global food security

The first scale at which Defra (2009b, 2009c) assesses and promotes food security is the global level, presented both as an important goal in its own right – food insecurity in other countries matters and is a priority for international development policy – but also as a condition for national and household food security in the UK. Thus the first theme highlighted, “global availability”, states that:

“Global supply ultimately underpins the availability and affordability of the diverse range of food we enjoy. Increased production and productivity will be required to meet the needs of a growing global population...” (Defra, 2009b, p8).

It is not clear who ‘we’ are in this claim, but given the longstanding recognition that the UK will continue to import and trade food, the term seems to carry the sense of maintaining national diversity of supply for the UK population, rather than of meeting global needs for food diversity. This maintains rather parochial priorities, despite the principal indicator cited being “trends in global output per capita”, with supporting indicators including yield growth and research expenditure. The second component Defra considers to comprise global food security is “global resource sustainability”, on the grounds that:

“food must be produced in a way that is environmentally sustainable or we will set up problems for the longer term. We need to feed a growing world in a way that does not degrade the natural resources on which farming and food production ultimately depend.”(Defra 2008, cited in Defra 2009b, pp8-9)

The indicators for this theme include global land use change, fertiliser intensity, water productivity and global fish stocks. Thus, Defra characterises its policies for promoting global food security as being about “[m]eeting increased global demand sustainably, in part by increasing production” (Defra, 2009b, p 20). This implies more efficient use of inputs such as fertiliser and water, to be achieved through research and development, and measures to reduce post-harvest losses. Citing the COSU’s analysis in *Food matters*, Defra describes the UK’s global contribution as a food producing nation as “small but meaningful”, adding that “the UK seems likely to have a greater impact via its influence on international policy, diplomatic initiatives, development programmes and research efforts” (Defra, 2009b, p.16, quoting COSU, 2008, p24). In other words, and despite considerable agricultural exports to the EU and elsewhere, the UK does not see contributing directly to global supply as a policy priority.

Defra’s approach to pursuing global food security includes collaboration with DfID, which published a White Paper *Eliminating World Poverty: Building Our Common Future* in July 2009. DfID is committed to boosting “agricultural production in developing countries, supporting agricultural research to find new ways of improving production, and helping to ensure the poorest people can afford to feed their families”.¹¹ In the White Paper, DfID states:

“The UK will ensure that agriculture and food security are given the highest international attention. Last year the international community promised \$20 billion of new funding for food and agriculture and this must now be delivered. The total value of the UK bilateral support to food and agriculture is currently over £1 billion. We will help women and men subsistence farmers, smallholders and cooperatives to get seeds and fertilisers, water, credit, and market outlets, and help them adapt successfully to a changing climate. We will also support improved social protection programmes in places at risk of malnutrition or food shortages. Our vision is the doubling of agricultural production in Africa over the next 20 years, and the doubling of the rate of agricultural growth in South Asia over the same period – in ways that manage natural resources sustainably and are adapted to climate change.” (DfID, 2009, p35)

In many respects, this approach chimes with the message from international institutions responsible for promoting food security: both Jacques Diouf (Director General, FAO) and Ban Ki Moon (Secretary

¹¹ 27 January 2009 Speech by Ivan Lewis, DfID Parliamentary Under-Secretary, at Madrid Conference on Food Security, <http://www.dfid.gov.uk/Media-Room/Speeches-and-articles/2009/Food-security/> access 27th Aug 2009

General, UN) have been widely cited as urging a doubling of global food production by 2050. The emphasis on subsistence and small scale farmers is in keeping with the position, well recognized amongst agencies and researchers working on food security internationally, that while new research and innovation in agriculture, engineering, technology are needed, the fundamental problem in food insecurity globally is the ability of small producers as well as the increasing urban populations to be able to sustain reasonable livelihoods. Indeed, we might argue the issue is one of injustice rather than of failure of production, or even absolute scarcity, despite the calls for doubling of production, sustainably (by which DfID, in common with the UN, usually mean environmentally sustainable). Amartya Sen (1981) was not the first to make the point but he is perhaps the most famous: the issue is what people can afford, not how much food there is – hunger exists amidst plenty. This applies as much to small producers as to the urban poor: that people have access to sufficient resources (of seed, grazing or growing land, water, manure and other inputs) and capacity (skills, agricultural extension) to purchase what they cannot self-provide. Indeed, Sen and others such as Pretty and Hines (2001), Devereux and Maxwell (2001), Hazell and colleagues (2007) among many, have gone considerably further: the capacity and capabilities of small producers and processors must be the critical focus for research, development, training, extension and investment. Thus, as the recent IAASTD (2008) report implied, small gains in productivity by very large numbers of marginal producers are more important for global and national food security than yield increases for the relatively few successful producers who would lead a new green revolution. Furthermore, most of the hungry and disadvantaged are small rural producers (particularly women) and livestock herders; thus focus here would also address food security at household levels. Despite this consistent evidence, there has been strong recent emphasis in the UK, as internationally, for investment in scientific innovation, with new biotechnological contributions seen as essential¹² (e.g. Royal Society, 2009, which argues for science tempered by local social, economic and political needs). There is little focus on ensuring governance mechanisms designed to align such investment with the needs and priorities of small producers (despite the White Paper rhetoric), and the implication is often that doubling of food production has to involve primarily large-scale producers.

For UK policy, this also raises the practical matter of how the new money pledged to agricultural development will actually be spent. It is one thing for government to assert that it will focus spending on “women and men subsistence farmers, smallholders and cooperatives”; the experience

¹² see also the Research Councils UK food security webpage <http://www.foodsecurity.ac.uk/>

of international food security initiatives suggests that it is a challenge to turn this into practice.¹³ Whether the UK's approach to global food security translates into substantial benefits is not only determined by the amount that will be spent nor even the headline commitments, but by detail of how those commitments are implemented and for whose primary benefit. The amount and direction of resources within agricultural and horticultural research in the UK and elsewhere has been contentious for some years (e.g. Barnes, 2001; Commercial Farmers Group, 2008; Murphy-Bokern, 2009), and international funding seems to have faced similar problems (Cabril, 2007; Cabril and Scoones, undated). There is as yet little evidence of systematic bias or benefit to smaller farmers, male or female.

The international literature in fact poses more substantial challenges to the UK position on global food security. Firstly, concerning the balance the UK strikes between its commitment to small-scale producers and its ambitions for radical increases in food production: the evidence IAASTD (2008) gathered suggests that innovation by small-scale and marginal producers could underpin substantial increases in agricultural productivity and food production, and that a focus on natural resource-efficient yield increases, as stated above, could equally pull effort and investment towards more efficient and more food secure producers (see also Evans, 2009). Under such a scenario, increased food production by large international producers might counteract real food security within a region, if the livelihoods of marginal producers are eroded by cheaper food entering the market place (MacMillan, 2008). In other words, it is entitlement and access – whose and how sustained – which are important for food security, rather than overall increase in supply. Furthermore, any production increases have to be sustainable on both environmental and social grounds; one of the criticisms levelled at large scale producers is their collective failures on both these counts (IAASTD, 2008). If these concerns are to be taken seriously, increasing production should explicitly be designated a secondary consequence of international measures that should actually be focused on increasing entitlements and consumption amongst those who are currently food insecure, or likely to become so; production and productivity should not be seen as goals in themselves. However, inasmuch as the indicators Defra (2009b) gives for global food security relate primarily to per capita production and resource efficiency, the focus in UK policy remains resolutely on productivity.

Secondly, Defra cites “rising incomes in emerging economies”, which in part reflect poverty reduction and potential for increased food security in those countries, as a potential or possible threat to the global availability of food as it relates to the UK. Furthermore, in Defra's Table of

¹³ http://blogs.odi.org.uk/blogs/main/archive/2009/07/14/agriculture_food_funding_g8_white_paper.aspx

indicators reproduced here, the leverage that UK consumption habits exert on agricultural commodity prices – for instance through feed-based livestock products or biofuels – is not identified as a comparable threat. So while DfID frames the UK’s interest in global food security in collaborative terms, Defra’s analysis in fact reveals potential resource competition. While this may be inevitable in market-based economies, the implications for fairness and social justice are completely masked, not least by the uncritical acceptance of international definitions of food security which simply state an aspiration that there be ‘plenty for all’, with no sense of power distribution over who really has access to what, and how.

National food security

Defra presents national food security as a function of “UK availability and access” and “UK food chain resilience”, arguing, respectively, that “[s]ourcing nutritious food from a diverse range of stable countries including domestically enhances security by spreading risks and keeping prices competitive”, and the “UK food supply depends upon a sophisticated and complex chain and infrastructure, and is particularly dependent upon energy supplies in their various forms” (Defra, 2009c, pp3-4).

The key indicator for “UK availability and access” is the diversity of UK supply, measured as the “number of countries accounting for 80% and 90% of UK food supply” (Defra, 2009c, p48). The rationale for this choice of indicator is that depending on a narrow range of countries for UK food supply could expose it to sudden shortages in the event of “natural, political or technical shocks”, including trade embargoes (2009c, p48). Defra reports as an example of an indicator moving in the right direction for food security that, in 2007, 25 countries (including the UK) together provided 90% of the UK’s food, up from 20 countries in 1993. The supporting indicators for this theme include EU and UK land available for production, the UK’s capacity to feed itself *in extremis* and the diversity of ports through which food enters the UK (Defra, 2009c, p3). While this is understandable from a supply chain perspective, it sits oddly with DfID and other claims about addressing global food security, as outlined above; the potential for resource competition is again masked.

The main indicator of “UK food chain resilience” is energy dependency in the food chain (Defra, 2009c, p71). The rationale for this indicator draws on Defra’s internal analysis that the 2008 surge in energy prices underpinned retail food inflation, since food production and supply depend heavily on the use of oil, gas and electricity. Thus price increases in energy can lead to sharp rises in food

prices, which compromise food security at the household level (presumably on the assumption of no price regulation or consumer subsidy, and no corresponding increase in incomes or reduction in other expenditure essentials; in practice, fuel costs often compete against food expenditure at household level). The supporting indicators relate both to the reliability of the energy supplies and, on the outcome side, the structure, flexibility and contingency plans of food and logistics businesses. One indicator examines diversity in the food sector, measuring national food retailing and manufacturing market shares (Defra, 2009c, p87). Thus, quite diverse indicators are used to monitor “resilience”, itself a component of international food security analysis.

Two further indicators on food stocks as buffers in the event of shortage are the UK’s total cereal stocks and retail grocery stocks. The latter is motivated by a concern that ‘just-in-time’ supply chains, with low store and warehouse stock levels, increase vulnerability to disruption (Defra, 2009c, p83). This explicit concern with maintenance of civil order even in the UK reflects the anxieties which surrounded the G8 meeting in 2008 and 2009, and probably memories of dwindling retail shelf stocks during road fuel protests in recent years (HOL Science and Technology Committee, 2005). Such concern with national security of food supply and civil order, which is not confined to the UK, could be described as a throwback to the mid to late 20th century, particularly following the 1974 World Food Conference (itself a response to dramatic increases in food commodity prices, linked at least partially to rising oil prices), when ‘food security’ surfaced as an issue of international focus (Maxwell, 1996). The steep food price rises in 2008, and so-called tortilla, bread and other food riots, served to reignite the concerns of governments in many low and middle-income countries over national food supplies (Ambler-Edwards et al, 2009); nevertheless, there was a striking consensus in international policy against legitimating such concern for national interests and there was widespread condemnation of governments, particularly of food surplus countries, which sought to safeguard supplies and prevent political unrest by introducing export restrictions.¹⁴

However, analysis and intervention at the national scale retains legitimacy; for instance, FAO’s longstanding compilations of national food balance sheets enables monitoring of time trends and commodity patterns and cross country comparisons to be drawn up, as well as national ‘hunger maps’, although of course, national per capita food availability is not a proxy for household food security (FAO, undated). Major food security interventions – notably under the FAO’s Special Programme for Food Security (SPFS) – are implemented at the national level,¹⁵ and the World Food

¹⁴ http://www.fao.org/fileadmin/user_upload/foodclimate/HLCdocs/declaration-E.pdf 3rd Sept 2009

¹⁵ <http://www.fao.org/spfs/national-programmes-spfs/how-works-npfs/en/> 3rd Sept 2009

Programme (WFP) baseline Food Security and Vulnerability Analysis is done at national level, prior to any emergency intervention.¹⁶

However, one could question the nature of the components used to calculate specific national level supply indicators in the UK. For instance, Defra's decision to include 'the UK' in its assessment of diversity of supply means that the indicator is dominated by and inversely related to the UK's self-sufficiency ratio, on the grounds that relying on fewer countries for supplies reduces the risk of exposure to "natural, political or technical shocks" (Defra, 2009c, p48). Including 'the UK' in the count seems perverse, in that the indicator would be more relevant as a clear measure of the diversity of UK food imports if it included only countries from which the UK imports, and excluded how much is imported (i.e. had no relationship with self-sufficiency). By contrast, the UK's focus on indicators of energy dependency, the economic structure of the food sector, and the low stocking levels associated with 'just-in-time' distribution systems, make a valuable contribution to international thinking on the resilience of food supply chains as a component of food security. These factors will be relevant not only to other high-income countries, but also to middle- and low-income countries where supermarkets are a growing presence in domestic supply chains and agriculture for export (Vorley et al, 2007), and the experience of using them could usefully be transferred.

How to assess performance against these innovative indicators – and Defra's conclusions about the UK's position – remain open to question. In particular, Defra's indicators for energy use in agriculture and food manufacture, and the energy intensity of agricultural products, relate only to domestic activity (Defra, 2009c, p72). Yet, by value, a little under half of the UK's food is imported (Defra, 2009c, p49), so energy use in the UK's international supply chains is also relevant and significant. The experience in other fields, such as food transport, is that declining energy use within the UK has been compensated by increases in what might be termed the overseas consumption footprint of UK consumers – referred to as 'offshoring' (Food Ethics Council, 2008; Jackson, 2009). So, while the UK government has identified what appear to be useful and new indicators for 'national food security', its potential for true assessment of the UK's performance appears optimistic, and again, may mask social injustice by simply pushing the negative load elsewhere, to poorer producer countries and businesses.

¹⁶ http://fsa.wfp.org/special_documents/FSA_Factsheet_EN.pdf 14th Sept 2009

Household food security

In the international literature and experience since the mid-70s there has been growing recognition that national food sufficiency does not guarantee food security in the sense that all have access to sufficient, affordable, healthy food. Thus household level analysis is essential to monitoring achievement of food security.

Defra has two elements at the sub-national scale, namely “Food security at a household level” and “Safety of, and confidence in, our food security” (Defra, 2009c, p4). With regards to the former, it states:

“Every Briton should have access to an affordable, healthy diet; achieving this is at the core of Government policy. For the Government, this also means ensuring food is available in any civil emergency. [...] Defra already keeps a close watch on movements in real food prices and food’s share of spending in low income households, but the UK Food Security Assessment brings this data together with other evidence on the affordability of fruit and vegetables, and household access to food stores.” (Defra, 2009b, p11).

The focus is thus on affordability and physical access. The main indicator used to assess affordability is spending on food as a percentage of total household expenditure by low income households (Defra, 2009c, p97), with relative prices of fruit and vegetables, food prices in real terms and household access to food stores as supporting indicators. There are no clear data sources or interpretive guidelines set out for the latter, and one proposed additional measure – consumers’ self-reported food insecurity – is yet to be developed.

The second component that Defra considers at this scale is the “Safety of, and confidence in, our food security”, stating:

“Food safety, and consumer confidence in the safety of our food, are also indispensable pre-conditions for ensuring UK food security. The Strategy Unit’s (SU) report, Food Matters, set the challenge of continuous improvement in the safety of food as one of its four main goals which the Government accepted.” (Defra, 2009b, p11).

The principal indicator Defra uses to assess this is trends in cases of foodborne pathogens, supported by indicators based on food safety inspections and incidents, the proportion of British food production covered by assurance schemes, and public confidence in food safety measures. Again, a

further indicator of consumer confidence in food availability is under development (Defra, 2009c, p3).

Within the UK therefore, Defra relies on indicators of food prices and proportion of income spent on food. We have already highlighted the shift in the international development food security literature towards entitlement and access at household and individual scales, informed by Sen's (1981) analysis and others', and this implies the UK approach has some validity in relation to wider thinking and practice. Internationally, however, there has also been growing recognition that concern with 'food' alone was insufficient and for some years more attention has been placed on livelihood sustainability, household coping strategies and sharing, and local level resilience (Maxwell, 1996; Frankenberger and McCaston, 1998; Gladwin et al, 2003). Furthermore, there has been an important move from sole reliance on so-called objective indicators to incorporating subjective perceptions of those living with food insecurity. This shift mirrors that in work documenting and addressing poverty and deprivation more generally, where participant perspectives and people's own voices are increasingly taken into systematic account (Narayan et al, 2000; Irvine et al, 2004). In the global North, there has been a parallel development in the US, where household subjective food insecurity experiences are systematically captured in quantitative indicators, regularly monitored by the US Department of Agriculture¹⁷ (see Radimer, 2002, for an account of qualitative research which informed this work).

Nevertheless, there is a role for objective outcome indicators: measurement and interpretation of nutritional status in children and sometimes adults remain central to international monitoring, as, for example, in FAO's definitive *State of Food Insecurity in the World* series.¹⁸ Thus indicators of nutritional adequacy (in intakes or attained size) are important measures of food security outcomes (although they are also subject to health status and thus health service availability¹⁹) but they are not sufficient to give the full picture – for this, subjective perceptions are essential too. The goal of food security is that people should not be required to make trade-offs between immediate poor nutritional status and long-term livelihood sustainability, and that they should have access to the food that they want (Maxwell, 1996; Dobson, 1997; Dowler et al, 2001). Indeed, these ideas are encapsulated in growing international work in the global North and South on implementing a rights-

¹⁷ <http://www.ers.usda.gov/Briefing/FoodSecurity/measurement.htm> and <http://www.ers.usda.gov/Briefing/FoodSecurity/history.htm>

¹⁸ <ftp://ftp.fao.org/docrep/fao/011/i0291e/i0291e00.pdf>

¹⁹ <http://www.fao.org/sd/wpdirect/WPre0125.htm>

based approach to food insecurity (Dreze and Sen, 1989; Orshaug et al, 1994; Riches, 1999; Hussein, 2002; Kent, 2005).²⁰

How does the UK government's approach to household and individual food security as a domestic issue measure up against this international backdrop? Defra recognises food security depends on effective demand: "[f]ood security is ultimately about people acquiring and consuming food" (Defra, 2009c, p96), although there is no acknowledgement of people's need for sufficient money, which in turn depends on livelihood security, whether from employment or welfare. Nevertheless, the focus on consumer access to shops, particularly for those characterised as being on low incomes, is in keeping with the international literature and to be welcomed. The international literature gives little basis for judging indicators of food safety, though clearly it is an important component of food security; Defra justifies its inclusion as being central to public confidence in food more generally (Defra, 2009c, p108), for which there is evidence²¹.

However, the international literature reveals three respects in which the UK approach could benefit from further refinement. First, although Defra says its indicators for household food security are "largely outcome-based" (Defra, 2009c, p98), it does not assess or include nutritional outcomes. The UK Food Standards Agency's regular *National Diet and Nutrition Surveys* (e.g. Gregory et al, 2000; Hoare et al, 2004) and the *Low-Income Diet and Nutrition Survey* (LIDNS) (Nelson et al, 2007a) offer data that could be used for such as assessment. These surveys provide evidence that although average consumption of some foods recommended for a healthy diet, including fruit and vegetables, fall below recommendations across the general population, they are lowest among the low-income population (Nelson et al, 2007a). Earlier research on food and poverty in the UK demonstrated a gradient towards lower consumption of iron, calcium, vitamin C and dietary fibre with increasing degrees of poverty, defined in terms of employment and access to benefits (Dowler, 1998).

Second, Defra's approach appears underpinned by a rational consumer choice model, built on the notion that food will be treated as a high-priority basic need. The indicators of access include monitoring food prices and, although fluctuations in competing expenditure demands (such as rent or fuel costs) are not part of the bundle proposed for monitoring, there is at least recognition that price variations should be included. However, the assumption seems to be, crudely put, that people will buy appropriate food for health at the cheapest price available if they have sufficient knowledge

²⁰ http://www.fao.org/righttofood/index_en.htm 14th Sept 2009

²¹ e.g. regular surveys of consumer confidence by the UK Food Standards Agency
<http://www.food.gov.uk/news/newsarchive/2009/oct/tracker>

and skill; the desire to purchase food acceptable to all household members that meets cultural needs, which may be particularly important for low income households (Dobson, 1997; Caplan, 1997), is ignored. The protection of livelihoods – access to work which pays sufficient to obtain healthy food, or to sufficient welfare support for those unable to work – which is increasingly seen in international development initiatives to combat poverty and prevent destitution, is not mentioned in the UK food security agenda. Indeed, there is evidence that, for instance, the national statutory Minimum Wage is too low to enable people to eat reasonably and healthily (Oldfield and Burr, 2008), especially since its uprating does not keep pace with real costs (Dowler, 2010). Also missing is the social agency which comes with employment and community security – which arguably gives people the confidence to make choices and purchases which chime with social and expert guidelines for health and wellbeing (Dowler, 2008).

Finally, Defra’s list of indicators includes measures of “self-reported food insecurity” and “consumer confidence in food availability”, although these remain to be developed. When implemented, they might be a step towards the essential recognition that “people are food secure when their food system operates in such a way as *to remove the fear that there will not be enough to eat...* when [people] have secure access to the food *they want to eat*” (Maxwell, 1996, p159, author’s emphasis). The USDA has, as mentioned above, used subjective but validated, quantified indicators of household food security for some years (Nord et al, 2007), and the recent LIDNS in the UK funded by the Food Standards Agency included a modified version of their questionnaire (Nelson et al, 2007b). This asked household members whether they had had sufficient resources to obtain enough appropriate food to sustain an active and healthy life, and whether they had worried about having enough money for food, during the previous year. Almost one third of the sample population of low-income households said that, during the previous year, lack of money or other resources had limited their access to enough varied and appropriate food, and almost 40% reported that they had been worried that their food would run out (Nelson et al, 2007b).

Conclusion

The language and framing of policy discourse is revealing of priorities and objectives. For half a century the eclectic term ‘food security’ has been used by NGOs, academics, governments and international organisations to describe, monitor, analyse and intervene in a food system which has not met the needs of the worlds’ population for sufficient food, which is appropriate in cultural, economic, nutritional and now environmentally sustainable terms. The UK government has widened

its perspective from seeing the supply side as predominant to including consumer access (if not entitlement aspects) in its concern with food security at national and international levels. The tricky matter of reconciling household level security, including reduction of anxiety about sufficiency, sustainability and reliability/safety, with both national strategic objectives and a fundamental political free market approach has not yet been discussed. In the summer of 2009, the government published ambitious indicators to monitor all levels of the food system which sustain security, and has asked for comment and contributions; at the same time, new commitments to aid and development programmes were stated which have implications for global food security and that at national and household levels for other countries than the UK. Yet we live in a global food market; how the needs and desires of UK consumers, and those of other countries whose populations probably have similar food aspirations, are to be met and reconciled is not mentioned in any definition, indicator or monitoring of food security, yet these issues are crucial for both UK and global food security. It is probable that enabling richer consumers to be content with/prepared to accommodate a reduced choice of commodities, or at least, not having all things available at all times, will prove a critical policy challenge. The UK government has been bold in exploring appropriate indicators of different aspects of food system contributions, which potentially contribute critical new thinking (in terms of monitoring supplies and usage of energy, water and fuel, for instance) to improve understanding of food security. Whether measurement contributes ultimately to better practice, not least that all people, at all times, should have access to sufficient appropriate food and confidence that such access be sustained, remains to be seen.

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Food Security theme	Rationale	Headline indicators	Supporting indicators	What threats and challenges do the indicators address?
1. Global availability	Global food supply ultimately underpins UK availability and prices. A well-functioning trading system is essential if supply is to respond efficiently to global demand.	Trends in global output per capita	<ol style="list-style-type: none"> 1. Yield growth by region 2. Real commodity prices 3. Stock to consumption ratios 4. Share of production traded 5. Concentration in world markets 6. R&D expenditure 7. Impact of animal disease 8. Growth trends (to be developed) 	Population and economic growth Rising incomes in emerging economies Harvest shortages Trade protectionism Breakdown in trade Lack of investment Warming and more volatile climate
2. Global resource sustainability	Food must be produced in a way that is environmentally sustainable or we will set up problems for the longer term.	Global land-use change CO₂ emissions (context indicator)	<ol style="list-style-type: none"> 1. Fertiliser intensity 2. Water productivity of crops 3. Water withdrawn for agriculture 4. Global fish stocks 5. Pesticide intensity (to be developed) 6. Seed diversity (to be developed) 	Supply expansion being ultimately unsustainable because of natural resource constraints and degradation. Resources not correctly priced or lacking good governance
3. UK availability and access	Sourcing nutritious food from a diverse range of stable countries including domestically enhances security by spreading risks and keeping prices competitive.	Diversity of UK supply	<ol style="list-style-type: none"> 1. EU's share of UK imports 2. Diversity of fruit & veg supply 3. EU production capability 4. UK production capability 5. UK potential in extremes 6. Diversity of entry ports into UK 7. UK port flexibility 8. Port diversity of non-indigenous foods 	Over-reliance on single sources of supply. Domestic supply failures Capacity and concentration at ports. What if non-EU trade breaks down? Could the UK feed itself in extreme circumstances in which trade broke down?
4. UK food chain resilience	UK food supply depends upon sophisticated and complex chain and infrastructure, and is particularly dependent upon energy supplies in their various forms.	Energy dependency of the food chain	<ol style="list-style-type: none"> 1. Energy capacity reliability 2. Diversity of oil and gas imports 3. Business continuity planning 4. Retailer warehouse stocks 5. UK cereals stocks 6. Food industry diversity 7. Viability of large manufacturers 8. Strategic road network 	Energy intensive food chain Does just-in-time operation reduce resilience? Diversity of domestic supply chains Is there sufficient continuity planning?
5. Household food security	Everyone should be able to access and afford a healthy diet.	Low income households' share of spending on food	<ol style="list-style-type: none"> 1. Relative prices of fruit & veg 2. Food prices in real terms 3. Household access to food stores 4. Self-reported food insecurity (to be developed) 	Can low income households afford nutritious food? Is physical access a problem?
6. Safety and confidence	Public confidence in UK food system rests primarily on food safety. Food safety stressed in Strategy Unit report.	Trends in cases of foodborne pathogens	<ol style="list-style-type: none"> 1. Food safety inspections and incidents 2. Food covered by assurance schemes 3. Public confidence in food safety measures 4. Consumer confidence in food availability (to be developed) 	Do consumers have confidence in food industry and authorities? Is food safety improving? Growing role for assurance and traceability.

Table of Food Security themes and indicators. from: Defra (2009) *UK food security assessment: detailed analysis*. London: Defra, pp2-3.