



Doubling food production to feed the 9 billion: A critical perspective on a key discourse of food security in the UK

Isobel Tomlinson*

Soil Association, Policy Department, South Plaza, Marlborough Street, Bristol BS1 3NX, UK

A B S T R A C T

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Within the emergent international policy arena of 'food security', the imperative to double global food production by 2050 has become ubiquitous. This statistic, as well as a revised figure of a 70% increase by 2050, have been widely used by key individuals in the food policy arena and have come to play a significant role in framing current UK and international policy debates about food security and the future direction of global agriculture. This paper provides a critique of the specific claim that we *need* to increase global food production by 70–100% in order to feed the world in 2050 and challenges the dominant framing of the problem of food security in the UK, and its resolution. This critique is based on two main observations: firstly, increasing production on such a scale was never intended as a normative goal of policy and, secondly, to do so would exacerbate many of the existing problems with the current global food system. This clearly raises questions about why these statistics have risen to such prominence. Drawing on framing and discourse as conceptual tools, this paper shows how these statistics are a key discursive device used by dominant institutions and individuals with prior ideological commitments to a particular framing of the food security issue. This paper discusses the social movement activities and institutional scientific and political challenges to this, that are beginning to coalesce and articulate an alternative set of discourses around concepts of ecological food provision, food sovereignty, and agroecology.

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1. Introduction

Within the emergent international policy arena of 'food security', the imperative to double global food production by 2050 has become ubiquitous. This statistic and an interim target to increase production by 50% by 2030, have become, as Hilary Benn, former Labour Secretary of State for Environment, Food and Rural Affairs declared, the accepted figures that everybody repeats (Benn, 2009). Indeed, they have been used by prominent Government scientists such as John Beddington (2009, 2009a, 2009b), Bob Watson (2009) and David King (2010), Government ministers and members of the opposition (for example Hilary Benn, 2008, 2009a and David Cameron, 2008), the agricultural industry (Kendall, 2008, 2009) and the agricultural biotech industry (see Barkhouse, 2010). They are contained within several Government policy documents (for example, Defra, 2008) and Conservative Party policy (2010). The need to double food production has also been repeated in academic

contributions to the food security debate (for example Godfray et al., 2010, p. 2; Lawrence et al., 2009, p. 1).

When doubt was subsequently thrown on the basis and accuracy of the 'doubling' figure (HCEFRACS, 2009), some actors including the UK Government (for example Dfid/Defra, 2010; Defra, 2010), following the lead of the FAO (2009) shifted to stating that a 70% increase is needed with an assumed starting year of 2006. Both statistics continue to be used in parallel, or combined to offer a range of the scale of production increases needed: Pretty et al. (2010, p. 220) declare '...it has been estimated that we need to produce 70–100% more food' (see also Conway, 2011).

The magnitude of these increases in production are, of course, attention-grabbing. In particular, the need to 'double' production is clearly a powerful statistic that has captured the imagination of policy-makers, politicians, scientists and industry alike. Its use has enabled an air of scientific precision and certainty to be given to a specific line of a somewhat neo-Malthusian reasoning: the need to vastly increase food production to feed the world of 9 billion by 2050. This imperative forms part of what has been described by many authors as a 'new productivism' policy period (Winter and Loble, 2009; Marsden, 2010) triggered by rising global commodity prices, estimated at an 83% increase between 2006 and

* Tel.: +44 117 314 5178.

E-mail address: itomlinson@soilassociation.org.

2008 (Lawrence et al., 2009). This 'food crisis', that left many of the poorest people in the Global South unable to afford basic foodstuffs was one of the contributory factors to the emergence of 'food security' as an issue once again at the forefront of international and national policy.

The main purpose of this paper is to provide a critique of the specific claim that we *need* to increase global food production by 70–100% in order to feed the world in 2050, and thus challenge the dominant framing of the problem of food security in the UK, and its resolution. This critique is based on two main observations as will be outlined in detail in the discussion that follows: firstly, that increasing production by 70–100% was never intended as a normative goal of policy and, secondly, to do so would exacerbate many of the existing problems with the current global food system. This clearly raises questions about why these statistics have risen to such prominence. Drawing on framing and discourse as conceptual tools (Hajer and Laws, 2006), this paper aims to show how these statistics are a key discursive device being used by institutions and individuals with prior ideological commitment to a particular framing of the food security issue. Drawing on Mooney and Hunt's (2009) work on 'keying', this paper discusses the challenge to this 'flat' keying of the food security frame, in the form of a 'sharp' key that is coalescing through the articulation of an alternative set of discourses around concepts of ecological food provision, food sovereignty, and agroecology.

2. The imperative of doubling food production by 2050

In the UK, the 'food crisis' has been evocatively linked to the other global challenges of climate change, population growth, and increasing demand for energy and water, to create fear over what John Beddington, the Government Chief Scientist, infamously described as a 'perfect storm' of global events by 2030: 'If we don't address this, we can expect major destabilisation, an increase in rioting and potentially significant problems with international migration, as people move out to avoid food and water shortages' (Beddington, 2009c). The Foresight Report on the future of food and farming (2011, p. 9) reproduces such concerns, seeing this convergence of crises as a threat to food security: 'together they constitute a major threat that requires a strategic reappraisal of how the world is fed'. The rehearsal of this 'threatening global dystopia' is as Nally (2010, p. 45) articulates, 'complemented by a suite of prescriptive norms that invariably conclude that agricultural production must be increased if we are to deliver more calories to the poor of today and the hungry of tomorrow.'

Formally, food security is commonly defined with reference to the 1996 World Food Summit definition, as existing when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life (see WHO, 2011). In everyday use, however, it has been likened by Mooney and Hunt (2009, p. 470) to 'sustainability' for its multiple meanings, and its success as a concept put down 'to a resonance that does not immediately engender oppositional claims, making it difficult to mobilise opinion in favour of alternatives'. Yet it is clear that one particular understanding of the food security 'problem' has come to dominate: how 'we' will 'feed the world' of 9 billion, increasingly affluent and urban, people by 2050 in a way, given recognition of environmental problems such as climate change, water and land scarcity, that is 'environmentally sustainable' (for example see Marsden, 2010; The Royal Society, 2009; Beddington, 2010; Godfrey, 2010; Brown, 2010; Foresight, 2011).

The key solution within the politics of 'new productivism' has been the promotion of the 'oxymoron' (Marsden, 2010) of *sustainable intensification*, first espoused by The Royal Society (2009). It has become something of a truism that '...the most

likely scenario is that more food will need to be produced from the same or less land' (Godfray et al., 2010, p. 2). This understanding of the food security 'problem' can now be found in scientific advice to Government (e.g. Committee on Climate Change, 2010), as well as prominent scientific publications (e.g. Nature, 2010) and scientific meetings (e.g. The Royal Society, 2011) and lends itself to seeking technological solutions contributing to the further intensification of agriculture. In parallel, this emerging discourse of food security has a presumption that the problems of hunger, starvation and malnutrition are a problem of 'global food security' and solving them needs a *better* global food system (see for example Foresight, 2011). Thus, it is clear that the 'doubling/70%' statistic has played a key role in the construction of a *global food security challenge* that is to be resolved through increasing agricultural production of a limited range of food commodities through further intensification, a liberalising of the global food system and the use of the latest (bio) technologies.

In its report 'Securing food supplies up to 2050: the challenges faced by the UK', the UK House of Commons Environment, Food and Rural Affairs Committee (HCEFRACS, 2009) looked into the sources of the statistics. They found they were used at the UN's High Level Conference on World Food Security. Jacques Diouf, Director-General of the FAO, stated that 'global food production must be doubled to feed a world population currently standing at 6 billion and expected to rise to 9 billion by 2050' (Diouf, 2008). At the same meeting Ban Ki-moon, Secretary-General of the UN, stated that food production needed to rise by 50% by 2030 (Ban Ki-moon, 2008). Two reports were cited as the principal sources in e-mail correspondence between the Committee and the UK Department for International Development (DfID) (HCEFRACS, 2009). The 50% by 2030 figure was taken from Rosegrant et al. (2006) whilst the source of the doubling by 2050 figure was an FAO (2006) report 'World Agriculture: Towards 2030/2050'. Whilst the latter appears to be no longer publicly available, updates of the modelling work are (Rosegrant et al., 2008, 2008a). The FAO (2006) report is an updated version of two of the key chapters of the study 'World Agriculture: Towards 2015/2030' published in 2003 (Brunisma, 2003).

FAO (2006) and Brunisma (2003) are based on computable general equilibrium modelling (CGE) that uses actual economic data to estimate the economy-wide impacts of a policy, project or other external factor. (See Appendix 1, Brunisma, 2003 for a full description of the methodology used). CGE models rest on the theory of general equilibrium that draws on the key concepts of market clearing and neoclassical micro-economic optimization behaviour of rational economic agents. (For a critique, see Scricru, 2007). The FAO (2006) report states that economic growth assumptions together with the growth of population, are the major determinants of projected food consumption, although by no means are they the only ones used. The projected increases in demand for food are driven by the 'normal evolutionary path' of increased per capita food consumption in countries in the Global South.

In HCFRA (2009) the modelling work is re-examined and it is calculated, that, according to 'the most likely future', demand for food between 2005 and 7 and 2050 would increase by 70%, not double. In their response to the HCFRA (2009) report, the Government acknowledged that 'the difference between 100% and 70% is not trivial: it is more than the food production of the whole American continent. So claims around food production needing to increase 50/100% need to be treated with care' (HCFRA, 2009a). This figure is now being used in order to justify the need for a 70% increase in production to meet this demand (Defra, 2009; FAO, 2009).

There are some easily apparent limitations with this work: firstly, this 70% figure does not correspond to an increase in actual

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