



Interrogating sustainable productivism: Lessons from the ‘Almerían miracle’



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ABSTRACT

Many have suggested that a new form of sustainable agricultural productivism is needed in response to the challenges to food security posed by climate change and population growth. This paper employs elements of ecological modernisation theory and focusses on sustainability challenges and solutions, as well as the knowledge networks and production rationale to assess whether the intensive horticultural industry located in the Spanish province of Almería represents sustainable productivism. The Almerían horticultural industry, lauded as an example of neo-endogenous growth, manifests a range of sustainable technologies addressing environmental impacts. Yet, we argue that Almerían horticulture represents ‘weak ecological modernisation’ and its main sustainability challenges are posed by water scarcity, a demand led production rationale and the precarious situation of family farms that at present provide a degree of economic embeddedness in this highly industrialised production model. A competitive imperative yields marketing organisations huge sway in production decision-making, and while a cost-price squeeze has driven efficiency in the use of farm inputs and product innovation, it has paradoxically made further advances in sustainable water management very difficult to achieve. Transforming the Almerían horticultural industry into a truly sustainable model of productivism would require the concerted efforts of individual farmers and marketing organisations as well as regional and local water governance institutions and land use planning. A significant obstacle to this remains the dominant normative perception that justifies groundwater abstraction on the grounds of its high economic returns and the perceived inability of small farmers to invest in desalinated water or further technological solutions.

1. Introduction

The combined pressures of climate change and population growth have raised questions regarding the ability of global agri-food production to maintain sufficient levels of food security and many have suggested that what is needed and perhaps emerging is an era of new agricultural productivism (HLPE, 2012). Wilson and Burton (2015) outline different models of what they term neo-productivism, for example to describe changes taking place in the European context where a renewed focus on productivity is driven by policy changes that despite a persistent multifunctional agenda render production increasingly exposed to market signals. In traditionally more liberal contexts characterised by ‘light touch’ environmental management requirements neo-productivist models of agriculture have emerged particularly where sustainable production methods are adopted in order to add value to products (Wilson and Burton, 2015: 58). While biotechnological responses are purported by many as necessary to enable ‘green’ productivity increases, there is also a more cautious school of thought

highlighting the potential impacts of a reliance on corporate technology solutions and high quality standards on small farmers (McDonagh 2015a). Horlings and Marsden (2011) for instance put forward evidence of a model of regionally embedded sustainable but productivist forms of agriculture that depend on bottom-up innovation and appear to avoid the ecological problems associated with the disembedded ‘old school’ productivist agriculture (e.g. van der Ploeg, 2006; Firbank et al., 2015; McDonagh, 2015b). Indeed, proponents of ecological modernisation theory suggest that with attention to inclusivity in innovation processes and reflexive engagement with a broad knowledge base, productivity increases and environmental sustainability can be combined in a socially sustainable manner (Mol et al., 2014).

In this paper, we employ elements of ecological modernisation theory and emerging theorisations of locally embedded sustainable productivism (Mol and Spaargarten 2000; Horlings and Marsden, 2011; McDonagh, 2015b) to analyse the sustainability challenges and solutions, as well as the knowledge networks and rationale of production decision-making in the intensive horticultural industry located in the

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Spanish province of Almería in Andalusia (Fig. 1). We engage both primary qualitative and secondary data to assess the sustainability of the sector and to understand the networks which condition how market forces and policy influence production practice at farm level and in the sector more broadly (see e.g. Wilson and Burton, 2015). We conclude that despite significant examples of environmental innovation, Almería represents a weak form of ecological modernisation where a demand led productivist agenda dominates and particularly sustainable water management remains at an impasse. Our findings pinpoint the tensions between market oriented knowledge networks and sustainable resource management imperatives played out in local governance deliberations. We highlight the institutional weaknesses that enable this and outline the potential for transforming the large scale intensive production system into sustainable productivism.

2. Methodology

The province of Almería is situated in southeast Spain, in the autonomous region of Andalusia. The province is characterised by a series of mountain chains, tectonic basins and coastal plains adjacent to the Mediterranean (Fig. 1). The Almería climate is described as semi-arid thermo-Mediterranean (Cantón et al., 2001) resulting in typically low annual precipitation (García Latorre et al., 2001; Lázaro et al., 2001; Solé-Benet et al., 1997). Provincial soils are typically poor with low natural fertility (Mota et al., 1996). It is not surprising then that early agricultural practices were limited by these conditions (Horden and Purcell 2000) and at face value, the provincial situation does not favour mass horticultural production. The birth of large scale intensive horticulture encompassing 30 000 ha of plastic greenhouses (Valera Martínez et al., 2016) can be attributed to the convergence of a number of factors that represented a paradigm shift in the province's agricultural fortunes, turning what many Almerians considered abandoned wasteland into highly productive areas concentrated mainly in the Campo de Nijar and Campo de Dalias indicated in Fig. 1. In 1990, David Tout presented a detailed account of the horticulture industry in Almería Province, southeast Spain from its conception in the early 1960s to end of the 1980s (Tout, 1990). This 'Almería miracle', Tout observed, could be explained by the conjunction of technologically driven plastic greenhouse production, favourable environmental resources (approximately 3000 h of sunlight p/a and despite low rainfall, abundant groundwater resources), availability of labour and the sustained market demand for winter vegetables, especially in northern Europe. Mota et al. (1996: 1600) later note, "The Almería economic miracle' well justifies its name, since the living standards have risen so dramatically in the region that the isolated and hand-to-mouth economy of the 1950s has given way to one of the highest incomes per capita in the country".

Our analysis of the sustainability of the Almería horticultural sector synthesises past research findings and recent secondary and primary data. We have undertaken 13 semi-structured interviews conducted face to face (11) and over email (2). The interviewed stakeholders represent the most central institutions and actors governing the decision-making in the horticultural sector. These consist of marketing organisations bringing together fruit and vegetable exporters and producers (Mkt1-2); regional environmental governance (Env1); local and regional agricultural governance and planning (Ag1-2); local and regional water governance institutions responsible for the Andalusian water law and its implementation as well as water infrastructure and monitoring of use (Water1-3); and growers (Grower1-5). The confidential and anonymous stakeholder interviews centred on the following themes:

Factors contributing to the competitiveness of the Almería horticultural industry

Product quality and its constituents

How is the Almería horticultural sector changing

Farmer decision making and sources of information

New aspects of water governance: enforcement of quotas; water banks; water pricing

Any other thoughts that respondent would like to share

Interviews were analysed according to the themes arising from the theorisations of sustainable productivism and the secondary data indicating the significant issues in Almería: local socio-economic embeddedness; environmental sustainability; production rationale; innovation and technology; and governance institutions. The analytical approach therefore represents a generic approach to thematic qualitative analysis (Bryman, 2016).

Empirical papers focussing on the Almería horticultural sector were sought via Summon using the key words of Almería AND horticulture; and the former complemented with AND water or AND biodiversity from the past 10 years as several comprehensive analysis of the sector have been conducted within this timeframe. The aim was to find publications on the social; economic and environmental sustainability of the horticultural production sector and of the relevant policy and governance context. Finally; the following organisations have been consulted in the form of personal communication during field visits¹: two medium sized co-operative supplying produce from the Campo de Dalias and Campo de Nijar respectively; a multi-national seed producing company serving the greenhouse industry in Almería and Murcia; and two of the four water desalination plants in the province. We acknowledge that personal communication does not constitute systematically collected interview data and in order to avoid bias; no conclusions are based solely on this personal communication.

3. Ecological modernisation and intensive agriculture

3.1. Different drivers and models of sustainable productivism

Sustainable productivism is a term increasingly used to combine the need to maintain food security whilst addressing the adverse consequences of 'post war productivism' (McDonagh, 2015b; Wilson and Burton, 2015). The post-war era has in literature been cast as that of agricultural intensification, commercialisation and specialisation at farm level, led either by state support or unabated processes of resource capitalism (e.g. Woods, 2011). This has seen a disembeddedness from the three pillars on which traditional regional farming styles were based (a reciprocal relationship with the local physical environment, local economy and the agrarian community) and the emergence of what some term socio-technical, industrialised farming regimes driven by the processes of capital accumulation, often accelerated by policy (van der Ploeg, 2006). There is a consensus that this kind of productivism and associated mechanisation was environmentally detrimental and underpinned the steep decline of agriculture as a source of rural employment and indeed prosperity rendering it either subsidy dependent or frog-leaping the local economy altogether (Woods, 2011). Euro-centric literature identifies a post-productivist (or multifunctional e.g. Wilson, 2008) tendency, most strongly manifest in policy, that attempts to respond to the ills of agriculture of the industrial kind by incentivising the production of non-market values such as biodiversity and recreational amenities (Evans et al., 2002). Many see this as a temporal continuum that is now beginning to give way to instances of neo or sustainable productivism (Wilson, 2008; McDonagh, 2015a). Wilson and Burton (2015) have used case studies of developments in Australia and New Zealand to illustrate that in some regions, thanks to early market liberalisation, productivism never ceased but is continuing to evolve, subject to structural drivers and market signals. These neo-productivist models display varying degrees of greening. For example, Wilson and Burton (2015) outline a form of market led co-operative

¹ The authors visit the Province of Almería annually for geographical and environmental fieldwork and have regular access to stakeholders in the water management, horticultural, nature conservation and tourism sectors.

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