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The history of oats in western Washington and the evolution of regionality in agriculture

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ABSTRACT

Concern is expressed in the literature that as agriculture industrializes, regionality is lost; and with it, social, economic and environmental benefits. The example of oats in western Washington provides an opportunity to examine forces driving agricultural evolution during the twentieth century and to reflect on whether and to what degree they reveal changes in the extent and nature of regionality in agriculture over time. Research based on historic literature explores five themes which highlight different ways in which the disappearance of the oat crop from western Washington was associated with the decline of regionality in its agriculture. Whereas regionally grown oats as horse feed were once an important energy source for transport and machinery in western Washington, they have been superseded by fossil fuels following mechanization. Oats were eclipsed in importance as livestock and poultry feed by corn and soy, preferred by a professionalized animal feed production industry and better supported by agricultural policy and research. Regional milling operations for food oats have also given way to industrial scale production in national centers. Increased need for farmers to participate in the monetized economy drove them away from the small grains, whose market value has declined as their commoditization progressed. Lastly, the role of oats as an agronomic tool for weed and disease control was undermined by crop protection chemicals. Oats thus exemplify evolution away from regional self sufficiency and towards greater integration with national and global markets by western Washington farmers. While the process was in part compelled by wider developments in agriculture and industry, it was also self-driven: regional farmers and agriculture sector leaders embraced opportunities to grow cash crops and participate in national and global markets from an early stage of western Washington's agricultural history. In a more recent phase of agricultural evolution, social interest in and consumer demand for local and regional agriculture are growing. This phase represents deliberate choice of regionality in the knowledge that it is neither necessary for farmers nor the cheapest possible option for consumers. Reinvented roles for oats are becoming possible in the present context and demonstrate a new and more purposeful approach to regionality which leverages technology and the market.

1. Introduction

Regionality is a concept that has emerged in the debate about how society organizes and relates to its food and agricultural systems. The potential benefits and extent of regionality in modern food systems of the US are widely discussed in the literature (for example Born et al., 2012; Urban Food Link, 2012; Delaware Valley Regional Planning Commission, 2010; Columbia University Urban Design Research Seminar, 2011). A question which has received less attention is what factors permit the development of regional or local agro-food networks, and what factors impel regions towards greater integration with the global economy. Where a historical perspective is taken, food and agricultural systems tend to be described as having evolved from greater to less regional self-sufficiency, from "craft production to mass production" (Lyson, 2012, p. 30). Herrin and Gussow (1989) found that this had occurred in Montana, and used their research into historic crop production to "examine the feasibility of encouraging the adoption of more localized seasonal diets." The present study revisits the question of how regionality in agriculture has changed over time,

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with a focus on understanding those factors which constrain or enable it. We take the approach of examining the regional history of a single crop – the oat (*Avena sativa* L.) in western Washington.

Social and academic interest in agricultural regionality reflects the importance of scale as a defining feature of twentieth century change in agro-food networks. Increasing concentration of agricultural resource ownership and geographic integration of operators are identified in the literature with negative impacts including environmental degradation, monopolization of genetic and physical resources and deterioration of rural communities (Welsh, 1996). Expansion of scale is viewed by some as threatening to food security and food system resilience because of the vulnerability of populations reliant on a decreasing number of food production centers (Griffin et al., 2015). 'Regional' and 'local' are foremost among the "spatially referenced concepts" (Feagan, 2001) around which opposition to such change has been built. They have become important words in the lexicon of what Jarosz (2007) calls "alternative food networks", a collective of efforts such as farmers' markets, food hubs, farm-to-school and community-supported agriculture schemes aiming to integrate social, environmental and economic goals in the structuring of agro-food networks. Consensus around the meaning of 'regional' and 'local' has so far been precluded by the broad spectrum of approaches, processes and locations embodied by alternative food networks: Kneafsey (2010) notes that the term 'region' has been variously used to indicate an area within a nation, an entire nation or even a group of nations, and the 'regional' overlaps considerably with the 'local', whose definition is no less elusive. Where agreement exists, it is around the idea that whereas profit motive and productivism define food and agriculture in the globalized capitalist framework, more spatially confined alternatives can provide a better context to manifest "the values of care for others, environmental sustainability, health and well-being" which are important to proponents of alternative food networks (Kneafsey, 2010).

Thus, while mainstream food and agriculture is typified by Hart's (2003) "tripartite macro-geography" dividing the US into just three agricultural regions – the Midwestern cash-grain region, the livestock region surrounding it, and coastal states which supply fruit, vegetables and cotton – the alternative food movement understands the 'regional' or 'local' as having a smaller spatial scale which can 'short-circuit' lengthy industrial food chains and restore the relationship of consumers to the provenance of their food (Renting et al., 2003).

Food and agriculture systems involves the physical movement of goods through production, processing and retail networks; economic relationships within those networks; and ideas communicated between producers and consumers. Hance et al. (2006) propose that agricultural development strategies based on the region should "seek to capitalize on competitive advantages derived from potentially reduced input and transportation costs; increased and more refined information flows between producers and purchasers/consumers; and market development based on product differentiation and branding products in terms of place or locale, freshness, or other characteristics distinctive to a region". Clancy and Ruhf (2010) write that in the "ideal" regional food system, "as much food as possible to meet the population's food needs is produced, processed, distributed, and purchased at multiple levels and scales within the region, resulting in maximum resilience, minimum importation, and significant economic and social return to all stakeholders in the region". In such approaches, regional agriculture privileges local production-consumption cycles, the active promotion of regional identity in the marketplace, and the nurturing of human and cultural values in agriculture including personal connections to food production.

Drawing on these ideas, the present study defines the extent of regionality in agriculture firstly by the importance of local production-consumption cycles, including processing activities, relative to the reliance on external markets. Secondly, regionality is thought of as the existence of regional identity in the food system and its active promotion in the marketplace. In reflecting critically on the role of regionality over time, we also acknowledge the social and political origins of the concept as it is used in the literature today, whereby it is envisioned as a conduit to democratization of agro-food networks and revitalization of rural communities.

Western Washington was chosen for the present study as a region with clear geographical identity, demarcated by the Cascade mountain range to the east and the Pacific Ocean to the west. Several previous studies of regional food and agriculture have taken western Washington as their study area, building up an understanding of the region's physical and social characteristics (Born et al., 2012; Hills et al., 2013; Urban Food Link, 2012; Jarosz, 2007).

Western Washington's nineteen counties fall within the Oceanic (*Csb*) climate classification of the Köppen Geiger system (Kottek et al., 2006). Its characteristic wet winters and warm, dry summers make western Washington particularly well suited for cultivation of oat because the oat plant has a higher water requirement by unit of biomass than any other small grain except rice (Brouwer and Flood, 1995) and performs exceptionally well in other similarly temperate, high-precipitation environments such as the UK and Ireland (FAOSTAT, n.d. a). Oats traditionally have had multiple roles in cropping systems as animal feed, human food and agronomic tools. Despite the crop's value, oat production declined worldwide during the twentieth century, falling from an average of 50.5 million metric tons per year between 1966 and 1970 (FAOSTAT, n.d. b) to 28.1 million metric tons between 1996 and 2000 (FAOSTAT, n.d. c). The decline has been even more precipitous in the US; and nowhere was this trend more dramatically manifested than in western Washington.

The agricultural community of western Washington originally capitalized successfully on the natural adaptedness of the oat crop but has virtually abandoned it within the last few generations. Similar disappearances have occurred in other places and at other times in history such as the loss of flax from cropping systems in Scandinavia (Viklund, 2011) or that of quinoa from Inca territories after the Spanish conquest (González and Eisa, 2015). The loss of oats from western Washington's cropping systems provides us with an example from recent history which took place during a time when regionality is held to have decreased in agricultural systems worldwide, particularly in developed countries including the United States. The present study uses the historic literature to develop explanations for the loss of oats in western Washington and considers the extent to which these explanations are connected to changes in agricultural regionality. By doing so, it aims to deepen our understanding both of *how* regionality in agriculture has changed over time, and of *why*. The study aims to illuminate specific factors which have constrained or enabled agricultural regionality in the past, contrasting them with those which constrain or enable it in the present. Implications of these enabling or constraining factors for regions elsewhere are considered.

2. Methods

The study region was defined as nineteen Washington State counties lying west of the Cascade Mountains: Clallam, Clark, Cowlitz, Grays Harbor, Island, Jefferson, King, Kitsap, Lewis, Mason, Pacific, Pierce, San Juan, Skagit, Skamania, Snohomish, Thurston, Wahkiakum and Whatcom (Fig. 1).

Historical research for the present study was conducted through a literature review of a wide range of historical and contemporary sources including federal and state government reports, technical