



Sustainability, space and supply chains: The role of bamboo in Anji County, China



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ABSTRACT

Rural modernization in China has been profound as the countryside has moved from agricultural production to industrial and tertiary industry development. Within rural areas these changes can have enormous significance for how we think about their sustainability. One rural county that vividly illustrates both the challenges and opportunities of rural development is Anji in Zhejiang Province in Eastern China. Anji is held up as a model of rural sustainable development. In this paper we analyse the basis for the sustainability claims made of Anji and to do so, we examine how the production and processing of bamboo materials transformed Anji into a place-specific bamboo-making locality that is lauded for its sustainability. We analyse how thinking on a place and a material (bamboo) come together to reinforce thinking on sustainability in rural China. We then go on to critically question the politico-economic arrangements that construct Anji and bamboo as models of sustainability. We argue that whilst both Anji and bamboo do have notable features that characterise them as sustainable and together can make an even more persuasive case for rural sustainability, a more detailed analysis allows us to uncover the deep-rooted tensions that persist in Chinese rural development between environmental protection and economic growth. The paper draws on a mixture of published and unpublished material to provide a detailed examination of the ways in which bamboo supply chains operate within and through Anji. The paper concludes that local constructions of sustainability are driven by economic rather than environmental values.

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1. Introduction

Research on the transformation of China during the past 30 years includes documentation on both the quantitative and qualitative changes brought about by urbanization and industrialization. These changes not only transform the population structure, land use patterns, cultures and living standards (Long et al., 2012; Long, 2014), but also produce spatial disparities in both rural and urban settings (Goodman, 1994; Smart and Lin, 2007). Whilst understandably much attention has been given to urbanisation (Siciliano, 2012; Wu and Hsing, 2012; Wu et al., 2013), rural modernization has been profound as it has moved from agricultural production to industrialization and tertiary industry development. Within rural areas these changes can have enormous significance for how we think about their sustainability. One rural county that vividly

illustrates both the challenges and opportunities of rural development is Anji in Zhejiang Province in Eastern China. Under the programme of 'building a new socialist countryside policy', Anji is constructed as a success story, a winner of multiple awards including National Ecological County, China National Habitat Environment Award and UN-Habitat Scroll of Honour because of its bamboo production and processing, and eco-tourism. Anji is held up as a model of rural sustainable development (Marsden et al., 2011) but how does a county gain such status? How does the growing and processing of bamboo come to be regarded as sustainable? And how does the material (bamboo) and the place (Anji) become so inextricably linked together that they mutually reinforce ideals of rural sustainability?

To answer these questions, we make an important contribution to the literature on rural sustainability by developing a critically informed place-based development model that shows the intertwining of a local material and people. The material, in this case bamboo, produces economic and environmental value and helps to shape the way in which Anji is constructed. We document how

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since the 1980s the creation of a sustainable place and a sustainable material have been occurring and how the two have become ever more closely connected. Despite the apparent appearance of sustainability for both the place and the material, there remain inherent tensions between the economy and the environment. Whilst the model draws upon our research in Anji County (see Fig. 1) it has much wider relevance to rural Eastern China where resource dependence and development pressures are most obvious and may prove to be equally intractable.

Anji can be found in the north of Zhejiang Province. It is one of three counties under the jurisdiction of Huzhou Municipal Government. It is located in the economically dynamic and politically important Yangtze River Delta. Anji covers an area of 1886 km² with population of 450,000. Anji has a high quality ecological environment, for instance, 75% of the county is covered by forest. The green nature of the county mean that Anji is widely regarded as an 'ecological green oxygen bar' within the Yangtze River Delta region.

Anji has a large reserve of Moso bamboo¹ (approximately 135 million stands, with an average of 2670 stands per hectare). In many ways, bamboo has the features of a classic sustainable material: it is natural, grows rapidly and can do so with limited or no inputs, can be substituted for more environmentally damaging materials (such as plastics, fibres or woods) and can have limited waste. In addition, as a natural material, bamboo is biodegradable. Whilst these are features that can be attributed to bamboo they may not necessarily hold true in local contexts. Moreover, bamboo can, like other materials, be the subject of scarcity which can promote ever more intensive production. In other words, the sustainability of a material can be both time and place specific.

In the paper, we analyse how the production and processing of bamboo materials transformed Anji into a place-specific bamboo-making locality that is lauded for its sustainability. We analyse how thinking on place and a material (bamboo) come together to reinforce thinking on sustainability in rural China. We then go on to critically question the politico-economic arrangements that construct Anji and bamboo as models of sustainability. We argue that whilst both Anji and bamboo do have notable features that characterise them as sustainable and together can make an even more persuasive case for rural sustainability, a more detailed analysis allows us to uncover the deep-rooted tensions that persist in Chinese rural development between environmental protection and economic growth.

The paper is divided into 4 further sections. In Section 2 below we develop our argument as to how a material and a place become so closely intertwined that they can co-construct a model of sustainability. We do this by bringing together three perspectives: first that of environmental governance to highlight how the local state has opportunities to shape spaces; second that on bamboo to show it can be fixed to a space (in this case Anji) and also flow through spaces (as part of a supply chain); and third how place making and meaning are constructed, focussing particularly on Anji. In the following section, Section 3, we outline our data collection approach. In Section 4 we provide a detailed analysis of the development of the bamboo industry and how it contributes to a local model of sustainable development. In this Section we also highlight the fragility of the system, notably how Anji seeks to secure external bamboo supplies when its own are insufficient. Finally, in Section 5 the paper concludes by arguing that more attention needs to be given to local level analysis of rural

sustainability.

2. Places and materials: making connections between bamboo and Anji

In this Section, we bring together three different approaches to critically analyse how a model of sustainable development can be developed for Anji. First, we outline why debates on environmental governance matter for the way in which decentralisation can create opportunities for a local state to promote a distinctive developmental model. New forms of environmental governance also create opportunities for materials that can be identified as sustainable. As we show in the following sub-section a material and a place can also be linked together to reinforce their sustainability claims. In the final part of this Section we bring together ideas on place making and meaning to show how they operate in Anji.

2.1. The governance of eco-development

Even before the transition from a command and control economy to a more market oriented one launched by Deng Xiaoping in 1979, there had been concerns about pollution and over use of resources. Economic liberalisation has hastened the growth in Chinese industrial output and the consumption of its citizens and is placing enormous demands upon the environment (Day, 2005; Shi and Zhang, 2006). Increasing recognition of the social, economic and environmental costs of development has led to government statements which have confirmed the importance of sustainability, a raft of new laws, and greater regulatory pressures upon the larger, private companies (Shi and Zhang, 2006). Whether these initiatives are sufficient to promote a new form of environmental governance is a key question and one to which scholars, such as Mol (2006) and Beeson (2001), have been turning their attention. So far, the debate on environmental governance has largely been concerned with seeking to understand the nature of the environmental state, its capacity for action, and the extent of the institutionalisation of environmental policy within the state apparatus and major private companies (see Xue et al., 2007; Ma and Ortolano, 2000). Much less attention has been given to the way in which environmental governance is played out in urban and rural development.

To understand the nature of urban and rural eco-development we first draw upon the literature on environmental governance in China. Although this literature contains a number of useful insights it rarely considers that there might be distinctive rural and urban patterns of governance, and that this will be significant for eco-developments. Moreover, the burgeoning literature on urban governance, and the much more limited literature on rural governance, underplay how the environment and the environmental agenda might be helping to shape development in China.

In any understanding of environmental governance, or the so-called 'environmental state' (Mol, 2006; Johnson, 2009; Liang, 2012), in China there are at least four themes that need to be considered. These are decentralisation, administrative capacity, authority, and civil society. Within this perspective, wider issues relating to the institutionalisation of market dynamics are ignored though this is not to say that they are unimportant. Our argument here is twofold. First, that situating actors within an institutional framework is essential for understanding the eco-development process. Second, as central state authority is modified, there is an increasing unevenness in sub-national governance arrangements: different actors, sets of interests and arguments move to the fore (Mol, 2006, p31), and this provides opportunities for entrepreneurial local governments to promote distinctive approaches to development.

¹ There are 179 species of monopodia bamboos, which account for 71.6% of the total number of monopodia species in the world. Moso bamboo is a temperate species of large bamboo. It is typical of the bamboo grown in Anji. In the rest of the paper we refer to bamboo and it will nearly always be Moso bamboo.

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