Geoforum 52 (2014) 216–225

Contents lists available at SciVerse ScienceDirect

Geoforum

journal homepage: www.elsevier.com/locate/geoforum

Saws, sonar and submersibles: Expectations of/for underwater logging

Samuel Randalls [a,*], Gillian Petrokofsky [b]

[a] Department of Geography, University College London, Gower Street, London WC1E 6BT, United Kingdom
[b] Department of Zoology, University of Oxford, 12 Mansfield Road, Oxford OX1 3TA, United Kingdom

ARTICLE INFO

Keywords:
Forestry
Sustainability
Expectations
Underwater technology
British Columbia
Finance

ABSTRACT

Underwater logging is a relatively novel industry focused on extracting wood from standing trees in deep-water lakes and reservoirs. It emerges through a confluence of technological, financial and environmental interests, primarily within small corporations in British Columbia, Canada. Companies now operate in many countries worldwide and may be promoted by dam owners that are moving from a narrow focus on hydroelectric power revenue to exploring ways of extracting profit from these infrastructures. In this paper we use the example of underwater logging to explore the ways in which expectations for new industries create value for these companies. We show how uncertainty, materiality and control of the storyline become three formative factors in explaining why some expectations are realized while others fail. First, uncertainty can be made to be economically productive as long as it is bounded by methodologically reliable accounting. In the case of underwater logging, while unknown timber quantities could be economically damaging, rare, unknown wood is translated into a niche, high-end market that creates additional value. Second, materiality is at the heart of expectations in that companies need to show they have control over the raw materials and ecological consequences of the logging. Third, controlling the storyline becomes a vital part of marketing underwater wood. This produces a somewhat cautious reaction to certification schemes and retailers. The performative nature of expectations thus needs to be considered in explorations of the production of capitalist natures and the consequences of these interventions.

1. Introduction

Buried in the water of reservoirs around the world are thought to be about 300 million submerged trees worth as much as $50 billion (Crockford, 2008). These trees were left underwater during the construction of dam projects, particularly in the period from the 1950s through to the 1970s, because the value of timber was low, land clearance was often not completed, and the over-riding imperative was to generate electricity and water supplies. This vast underwater resource located in many different countries has now become an economic opportunity given the rising value of timber from mature trees, the imperatives to reduce land-based deforestation, new underwater technologies and a compelling discourse about rediscovered wood. New companies have emerged since the mid-1990s to harvest this resource and a mini-economic cluster has emerged in British Columbia, Canada. Establishing a new industry however took time and labour, especially since there were significant uncertainties regarding the value, quantity and condition of underwater wood.

Recovering wood from underwater is not new to this emerging industry. Salvage loggers have for many decades recovered lost logs from lakes, rivers and major waterways. In most cases, reliable information regarding the value of timber resources would not have been readily available and the extraction costs would have been prohibitively expensive except for small-scale log recovery work. Salvage logging enterprises were particularly focused on logs lost during transportation (Bryan, 1969; Cayford, 1960, 1973) and, in general, these were already cut trees and were mostly located in areas where there had been significant use of water-transportation by logging companies. Small entrepreneurial loggers dominated salvage logging and while technological improvements relating to sonar and sawing equipment became available, the challenges of efficiently cutting trees underwater were considerable. Many people died. It was an industry dominated by a culture of individual heroism (Hurst, 2005) and sometimes scant regard for timber recovery licenses.

The value of recovered underwater timber was also variable depending on species and condition. An early example of a full-lake inventory was conducted by forest researchers in Laos on the dammed section of the river Nam Ngum in the late 1980s and contained an assessment of the wood properties and usage of various species (Polacek, 1988; Wolter, 1996). The working supposition in these studies was that submerged timber would be marketable given that in Europe and North America, the forestry industry had stored logs underwater between logging and sawmilling to reduce problems of fungal and other damage (Bjorkman, 1948 for a

* Corresponding author.
E-mail addresses: s.randalls@ucl.ac.uk (S. Randalls), gillian.petrokofsky@zoo.ox.ac.uk (G. Petrokofsky).

0016-7185/$ - see front matter © 2012 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.geoforum.2012.12.010

Swedish example; Osborne et al., 1956, in the US; Forestry Commission, 1996 in the UK; Malan, 2004, in South Africa). These were primarily focused on temperate species, but nonetheless proved the potential value and use of wood that had been stored underwater for a considerable period of time. This was however primarily cut wood and not based in tropical environments, two important facets for the later discussion.

Proponents of underwater logging distinguish their industry from salvage logging, in terms of it being based on leading technology that can recover standing trees at considerable lake depths, safe, and with a regard for environmental, economic and social objectives. Lake owners, whether private or government, often encourage logging operations as they seek to create value out of this lost resource and meet other objectives such as safer passenger transportation on lakes. The underwater logging industry thus represents a new innovation in forestry that has consequences for communities around the world and that highlights the emergence of the exploitation of new resources to meet niche and environmentally-friendly requirements in wood markets.

From a consumer perspective, underwater wood can be found in standard wood markets where it is relatively undifferentiated from other wood sources, but at the higher value end of the market it can be used to grow niche markets in instruments or quality flooring. It can be appealing through both a discursive value attributed to the story of how the wood was lost and rediscovered, and a material value that derives from, for some, better visual and acoustic quality of the wood. Underwater wood can thus be a distinctive product particularly if it happens to have come from a rare, mature tree that, if it were on land, would no longer be permitted for felling. This highlights the importance of stories about this wood in creating and managing the value of the market, an important component we argue in enabling the industry to create and meet financial expectations.

In this paper, we aim to demonstrate that the ability of capitalism to remake value from productive capacity (in this case, that of the dam) is driven as much by stories as it is by a purely rational economic logic. We draw on our personal encounters with key actors in the sector whose stories illustrate the different forms in which expectations for and of the industry are established and stabilized. Without the stories, underwater logging is simply another forestry operation like any other; rediscovered wood aids marketability that adds value to this commodity in a crowded marketplace. Consideration of the performativity of expectations thus needs to be at the heart of understanding why some capitalist natures are enacted while others are not. To illustrate this argument we first provide a literature review that explores the argument that underwater logging reflects a capitalist requirement of value-creation, before moving onto examine debates in economic geography and sociology that have considered the role of expectations and discourses in shaping economic activity. We argue that there are three types of expectations that are important in underwater logging: first an economic expectation that is about the potential value of underwater wood; second how expectations need to be materialized through proving the usability and ecological suitability of the operations; and third how expectations are maintained through retaining control of the story-line. We conclude by suggesting that expectations are temporally and spatially specific, tying histories and futures together in diverse ways, that add to our knowledge of how innovations are enacted within resource-intensive industries.

2. Expectations and the forestry industry

Planning for the future is central to the forestry industry with a production model that is based on planting trees in the present to generate a profitable yield in future decades. Plantation forests are organized around the economic logics of the forestry industry: investing money in ensuring that the best varieties are chosen, sufficient care is given to maximizing growth rates and there are efficient logging and marketing operation at the end of the cycle. Improving, intensifying, and accelerating the production cycle of trees as 'organic machines' (Prudham, 2005: 113) is central to enhancing financial expectations in the industry. Prudham (2005), further, demonstrates the importance of biotechnological interventions that enhance the commercial availability and profitability of timber. Yet as the critical literature on sustainable yield forestry has demonstrated (e.g. Demeritt, 2001; Prudham, 2005, 2007), trees are not infinitely malleable to capitalist imperatives with sustained yield sometimes failing on ecological and, later, economic grounds. Expectations are thus at the heart of the forestry industry as efficient trees are imagined, researched, trialled and, eventually, enacted.

The forestry industry highlights the importance of the time–spaces of capitalism as capital is tied up for decades in living organisms in anticipation of delivering future economic value. More broadly, Castree (2009) has argued that capitalism seeks out investment opportunities in infrastructure when surplus money is available, but that they often fail to deliver a satisfactory rate of return leading to a remaking of that capital in a different form. As he puts it: "Great splurges of fixed capital investment come back to haunt capitalism 25–35 years later." (Castree, 2009: 51). Dam projects are an example of infrastructure that haunts capitalism, because they are often constructed in an era of capital availability (this was particularly the case from the 1950s into the 1970s) as a means to generate new forms of cheap electricity and sometimes ensure water availability. These projects had significant environmental and social consequences with displaced communities and with much of the *in situ* vegetation left standing when the land was flooded.

One such example of a large dam is the Nechako reservoir in northern British Columbia constructed in 1952. After removing First Nations people from their land, a private company reversed the flow of one of the rivers and created a new tunnel for the river. Mistakes in calculation, however, led to a large vertical drop for the river from the tunnel. The river was a perfect opportunity for a hydroelectric power plant so they built a dam and installed power lines across the coastal mountains to power a new aluminium smelter on the coast. Given that bauxite is not produced locally, the smelter also needed raw materials shipped in from across the Pacific Ocean. The dam itself resulted in a new lake within which were an estimated 15 million trees and several floating islands. At the time, the value of the timber for these trees was very low and they were simply abandoned in the desire to extract economic value from the water in the form of energy. The initial capital investment, however, proved to be rather less attractive over time not least because the primary justification for it, namely powering the smelter, became less economically appealing. The capital investment began to look haunted to borrow Castree's (2009) descriptor.

In the 1980s and especially the 1990s, things began to change and a new investment cycle was started to accrue economic value from the dam. This was driven by a change in the economic value of timber, which soared largely owing to increased timber prices in the USA (Buongiorno et al., 1988). The USA is the most significant market for Canadian timber, accounting for four fifths of all Canada's forest products (Canadian Forest Service, 1999). With increased prices and environmental concerns about deforestation, 15 million forgotten trees underwater represented a significant economic resource that was not apparently subject to environmental restrictions and concerns, and the reservoir owners, Alcan, pushed for the re-capturing of this lost value in the lake. This established a new productive circuit within the same infrastructure (the dam) to turn the environmental consequences of the initial capital investment into opportunities for new investment.