Apples in action: Territoriality and land use politics of mountain agriculture in Taiwan

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Abstract: This essay outlines the symbolic and material transformation of mountain agriculture in Taiwan by tracing the historical trajectories of temperate fruit production, and of apple growing in particular. Specifically, we look at the area of Lishan, a major production centre for apples and other temperate fruits in Taiwan’s Central Mountain Range in order to explore the relationship between the mountain agriculture and the politics of territorialisation. Focusing on the post-war era, we argue that the development of mountain agriculture in Taiwan, and upland fruit growing in particular, has operated as a ‘more-than-human political technology’. The territory of Lishan is not just a passive geographical space, but engaged in a process of becoming, which re-makes the mountain areas of Taiwan into ‘apple zones’ both spatially and socially. The spatial dimension centres on processes of political territorialisation, economic deterritorialisation and combined reterritorialisations whereby apple plantations have transformed the landscape from one focused on strategic politics to one embedded within development and market frameworks which entail their own particular forms of politics. The social dimensions are centred on the politics of forging connections among different elements circulating through the mountain areas of Taiwan, including apples, soldiers, transport infrastructures and agricultural policies.

Keywords: assemblage, Kuomintang veterans, mountain agriculture, Taiwan, territory

Introduction

In Taiwan, ‘mountain agriculture’ (gaoshan nongye) has various, sometimes contradictory, connotations. On one hand, especially during the post-war era, mountain agriculture has symbolised the modernisation of Taiwan’s agricultural sector. For many, the transformation of mountain areas from rugged wilderness into modern farms has been a source of national pride (Liu, 1974). Opposed to this is a view of mountain agriculture as a source of environmental degradation. This view frames the environmental problems of mountain areas – such as landslides, soil erosion and water eutrophication – as side effects of mountain agriculture (Hu, 1988). Recently the view regarding mountain agriculture as a sign of environmental degradation has intensified and this debate continues.

These conflicting representations of mountain agriculture do not, however, tell the full story. Mountain agriculture in Taiwan has never been purely a matter of economic development versus environmental conservation. Rather, today’s mountain landscapes are also the product of past strategies of the state to exert political control over upland areas. Agriculture has never been a simple matter of transforming rugged mountains into productive farmlands, but has also served as a way of integrating the mountain areas under state sovereignty and territorial control. Accordingly, while any account of mountain agriculture must address the conflict between economic development and environmental conservation, this paper seeks to move beyond this binary opposition. Specifically, we aim to understand mountain agriculture from the perspective of territorial politics.

This paper outlines the symbolic and material transformation of mountain agriculture in Taiwan by tracing the historical trajectories of temperate fruit production, and of apple growing in particular. Specifically, we look at the area of Lishan, a major production centre for apples and other temperate fruits in Taiwan’s Central Mountain Range, to explore the relationship between mountain agriculture and the politics of territorialisation. Focusing on the post-war era, we argue that the development of mountain agriculture in Taiwan, and upland fruit growing in
particular, has operated as a ‘more-than-human political technology’ (Hung and Baird, 2017).

To mount this argument, we first proceed from the view that territory as a political technology (Elden, 2010) encompasses both a political-legal dimension whereby the state enacts its power to maintain order within its zone of territorial sovereignty, and also a political-technical dimension whereby surveying and mapping techniques produce a ‘legible’ territory for both political control and the operation of the market economy. Then, we proceed with idea of assemblage (Deleuze and Guattari, 1987; see also DeLanda, 2006) taking apples as the agent which puts territoriality in the process of becoming.

After this introduction, we will outline our theoretical approach and explain how viewing territory as a more-than-human political technology offers new insights into the role of apples (and temperate fruits in general) in the development of Taiwan’s mountain areas. Next, we briefly explain our research methods. The remainder of the paper looks at three post-war historical epochs and their corresponding territorial politics. First, we examine the phase from the early 1950s to the early 1960s. After the Chinese civil war, the Republic of China’s (ROC) Chinese Nationalist Party (Kuomintang or KMT) government retreated to Taiwan from China, bringing in its wake a large number of soldiers and other refugees. We show how during this period, the Nationalist government used mountain agriculture as a vehicle for a process of political territorialisation that transformed demobilised soldiers into farmers. Next, we look at the period from the late 1960s to the late 1970s. By investigating the changing representations of apples, we show how political territorialisation also led to stronger connections between mountain areas and the market economy, earlier political territorialisation paving the way for a new phase of market territorialisation. Finally, we explore how, more recently, environmental governance has spurred a form of reterritorialisation that mixes state power and market forces to recontest the politics of land use in mountain agriculture zones.

 Territory as a more-than-human political technology

Territory has long been an important analytical concept in political geography and beyond (Delaney, 2005). In line with the greater attention being paid to relational flows of populations and goods, geographers (and social scientists in general) have urged scholars to reconsider the previous conceptions of territory as a boundary-fixed space and reservoir of state power (Allen and Cochrane, 2007). For example, scholars working on critical geopolitics (e.g. Ó Tuathail, 1996; Dodds and Atkinson, 2000) have argued that the received view of territory as a pre-given ‘container’ (e.g. Mackinder, 1904; Cohen, 1973) implies a form of environmental determinism. In addition, the static and bounded concept of territory has been de-emphasised in human geography and other social sciences over recent years as increasing attention is given to issues such as migration, diaspora, displacement and movement (Escobar, 2008). These trends are in line with a shift in disciplinary focus from stable and bounded conceptions of territory to dynamic flows of populations that live lives in relational connection (Amin, 2002; Murdoch, 2006).

Yet taking a relational approach need not be in conflict with territorial thinking (Jones, 2009) and rethinking received definitions of territory does not mean that we can ignore the role of the state as it enacts political operations to territorialise its otherwise abstract sovereignty (Jonas, 2012). Instead, as Elden (2013) argued, territory remains a ‘political technology’ employed by the state to survey its land and control its terrain. Territory, as a ‘political technology’, must be understood, then, through its relation to both land and terrain. Elden (2013: 804) defines land as ‘a relation of property, a finite resource that is distributed, allocated and owned, a political-economic question’. By contrast he defines terrain as ‘a relation of power, with a heritage in geology and military, the control of which allows the establishment and maintenance of order’, and therefore a ‘political-strategic question’ (Elden, 2010). Moreover, Elden pushes further to argue that ‘land’ and ‘terrain’ are necessary, but not sufficient, to thoroughly capture the meanings of territory. Instead, ‘measure[ment] and control – the technical and the legal – need to be thought alongside land and terrain’ (Elden, 2010: 811–812). In other words, territory as a political technology requires a political-legal state apparatus that can enact power to maintain order inside its
territorial zone of sovereignty. But as a political technology, it also comprises the political-technical techniques of surveying and mapping that produce a ‘legible’ territory in the first place (Scott, 1998).

While acknowledging the significance of taking territory as a political technology that controls and measures geographical space, Antonsich (2011) points to the importance of agency to the production of territory. Antonsich (2011: 424) argues that territory is a ‘social space, produced by specific social practices and meanings which turns territory into both a “semiotised” and a “lived” space’. As Jonas (2012: 270) argues, geography requires a combination ‘both of relational thinking about territorial politics and of territorial thinking about relational processes’. To this end, recent scholarship has started to reconceptualise territorialisation as a relational process containing both human and nonhuman elements. For example, Dittmer (2014) has applied the concept of assemblage (Deleuze and Guattari, 1987; see also DeLanda, 2006) to propose ‘geopolitical assemblages’ of territorialisation and deterritorialisation. Such a geopolitical assemblage of territory emphasises a relational ontology that configures agencies in the context of interactions between multiple powers issuing from both the state and the market.

Assemblage, though defined and applied in diverse ways, in general foregrounds ‘multiplicities irreducible to a single sense, structure or logic’, and spans ‘the divide between nature and culture, humans and nonhumans’ (Moore, 2005: 24). As a result, recent scholarship has applied assemblage to think about non-human agency. For example, Jane Bennett (2010: 35) proposes a congregational agency originating ‘from the very disposition of things’. In other words, agency, human or non-human, is not self-contained or independent, but congregational work based on the relational connections and arrangement between human and non-human factors.

To reconsider territory with assemblage and non-human agency, the notion of territorial assemblage is viewed as being ‘contained within it impulses of deterritorialisation and reterritorialisation, lines of flight away from locality and rootedness, as well as emplaced reconfigurations of arrangements within specific sites’ (Moore, 2005: 332, note 116). However, critiques concerning assemblage point to its frequent occlusion of ‘power relations, historical sedimentations and their forceful effects’ (Moore, 2005: 24). Here, it is useful to reconsider Elden’s (2013) proposal of territory as a political technology, which significantly emphasises the political, economic, legal and technical powers, as well as the historical accounts in understanding territory. Therefore, territory as political technology and the assemblage approach with attention to non-human agency complement each other in understanding territorial politics.

This paper takes territory as a more-than-human political technology while recognising the role of both human and non-human agency in producing territory. By thinking of territory as a more-than-human political technology, we intend to better understand territorial politics. Specifically, we argue that mountain agriculture in Taiwan has operated as a more-than-human political technology that has forged territories for both the state and the market. By understanding the changing symbolic meanings and material landscapes of apples and other temperate fruit, we can, in turn, shed light on how the territorial politics of the state is enacted in relational connection with market forces.

Throughout our analysis, we intend to understand how the development of mountain agriculture aimed not only to produce apples and other temperate fruits, but was also a political project that sought to convert unruly mountain landscapes into a legible and controllable agricultural territory. The story of apple plantations around our field site of Lishan illustrates the relationship between mountain agriculture and the enhancement of Taiwanese state control over its Central Mountain Range area, a process of political territorialisation. Additionally, we argue that this political territorialisation process has also led to processes of economic deterritorialisation and reterritorialisation by which Taiwan’s Central Mountain Range areas have been connected to the global market economy. These processes of political territorialisation and economic deterritorialisation, and the ensuing combination of both state and market reterritorialisation, serve as valuable illustrations of the dynamic relationship between nature and society in Taiwan.
Methods

We used archival research, in-depth interviews and participant observations to collect our data. For archival research, our main sources were old newspapers and governmental documents dating from the 1950s to the present. We have paid particular attention to documents concerning road construction, veteran re-settlement and the images and rhetoric surrounding apple and other temperate fruit plantations.

In addition to archival research, we conducted field research in the town of Lishan. It is located on Taiwan’s Central Mountain Range and is a major centre for mountain agriculture in Taiwan (see Fig. 1). We conducted our field research from June 2014 to April 2015. During that period, we visited Lishan six times and interviewed 27 persons in total, including veterans and their children, orchard owners and workers, people who run agro-tourism, residents and Forest Bureau staff members. From among those we interviewed, we identified several key informants, especially ROC army veterans who retreated to Taiwan from China after 1949 and their descendants. During our stay in Lishan, we also conducted on-site observations of how people work in the orchards and market their produce.

While acknowledging the critical relations between mountain agriculture and Indigenous land use politics, we do not focus on the Indigenous issues in this paper. We offer this paper as a complement to the existing literature concerning the relationship between the KMT authority and Indigenous peoples (e.g. Hsu, 2016; Sugimoto, 2017) and between mountain agriculture and Indigenous land use politics (e.g. Huang, 1981; Kuan, 2014).

Turning soldiers into farmers: Political territorialisation in the service of state sovereignty

The first plantings of temperate fruit trees in the area took place during the Japanese colonial period (1895–1945). During the Cold War era, the Lishan area emerged as the most important
site for the development of mountain agriculture under the KMT government. Among a variety of temperate fruits produced in Lishan, apples have served as symbols for the success, failure and the contested representations of mountain agriculture in general.

From 1895 to 1945, Taiwan was part of the Japanese Empire following its cession by the Qing Empire subsequent to the latter’s defeat in the Sino-Japanese War. After Japan’s surrender at the end of World War II, the KMT assumed control over Taiwan. While this paper does not cover in detail the territorialisation of Taiwan’s high mountain area during the period of Japanese rule, it is important to acknowledge that the KMT government’s political territorialisation of Taiwan’s mountain areas in the post-war era was built on foundations established by the Japanese colonial administration. For this reason, we will describe briefly Japan’s governance of Taiwan’s high mountain areas, and some of the effects this had on subsequent KMT control.

Historical context: Japanese governance of Taiwan’s mountain regions. Starting in 1898, the Japanese government investigated almost every detail of Taiwan, including the conducting of censuses, investigating landownership and recording folk customs (Wu, 2007). In addition to these large-scale surveys, many individual Japanese researchers conducted botanical, zoological, entomological, geological, anthropological and other kinds of modern scientific research in Taiwan. This research data, collected officially or personally, helped the Japanese government develop its plans to systematise information concerning Taiwan’s upland regions and extend its control over Taiwan’s Indigenous peoples. For example, in 1907 Sakuma Samata, the fifth Governor-General of Taiwan, initiated a five-year plan to consolidate Japanese rule over the island’s Indigenous people. He conducted two campaigns of aggressive suppression of Indigenous tribes from 1907 to 1912 and later from 1910 to 1915 (Fujii, 2001: 209–268). Having suppressed Indigenous resistance, Japanese officers were free to use surveying, mapping and photogrammetry to fill in the empty spaces on maps and to produce more information about Taiwan’s high mountain areas (Wei et al., 2008: 11–12, 39–40). After World War II, the Nationalist government inherited these surveys and maps, allowing it to enhance its own control over Taiwan’s central mountains. For example, the planning and construction of the Cross-Mountain Highway, to be discussed in greater detail below, was based on data collected during the period of Japanese colonial rule.

In 1949 the Chinese Communist Party established the People’s ROC, precipitating a retreat to Taiwan from China by the defeated Nationalist forces. Accompanying the Nationalist government was a troop population numbering over one million. These soldiers came from all over China, and they arrived in Taiwan with the hope of soon returning to China to ‘retake the mainland’ (fangong fuguo) from the new Communist government. The situation of these refugee soldiers was soon complicated by Taiwan’s involvement in the politics of the Cold War. Although the KMT was not to renounce its goal of retaking the mainland for several decades, the strategic reordering of East Asia under the conditions of the Cold War meant that the possibility of re-taking political control over mainland China diminished, and so the KMT required strategies both to consolidate its control over Taiwan and to resettle its troops on the island. We argue that the development of mountain agriculture in Taiwan was a strategy that contributed to both of these ends. Establishing mountain agriculture enterprises such as the apple plantations in Lishan achieved both an increase in the KMT’s territorial control over Taiwan’s mountain area and also facilitated the orderly demobilisation of surplus troop populations as soldiers took up new lives as farmers. To explain this process, we will consider two aspects of this territorialisation process: road construction and land distribution.

Road surveying and construction. Before agricultural enterprises could ‘go up’ to the mountains, it was imperative to establish transportation infrastructure. Lishan is located on the ‘Central Cross-Island Highway’, the first such highway which commenced construction (in 1956) using a labour force comprising over ten thousand military veterans. Building the Central Cross-Island Highway was not a matter of simply constructing a road but also served as a means of settling the large number of former Nationalist soldiers. Prior
to construction, surveys were carried out in order to define and align the route the road would take. This work drew upon existing Japanese plans for a cross-island highway, which did not reach fruition due to Japan's defeat in World War II but were revived under the auspices of the Nationalist government. According to an official report of the Directorate General of Highways of Taiwan (Directorate General of Highways, 1956), the final version of the route was decided in accordance with both military considerations and the need to resettle all participating construction workers. Plans for building these settlements included information regarding location, the number of potential new settlers and the prospective means for these settlers' livelihoods (Table 1). This in turn necessitated a series of surveys of potential locations for agricultural development, including apple plantations and other fruit farms.

Figure 2 and Table 2 illustrate the results of one such survey, conducted in 1956. The information collected included each site's location, altitude, soil composition, slope degree, vegetation and total area. Having identified potential arable lands along the highway, the road construction survey team next assigned potential crop types for each new settlement. As shown in Table 3 and Figure 3, different kinds of crops, including apples, pears, potatoes and rice, were assigned as the potential main agricultural products at each site.

One thing that should be noted is that, according to Table 3 and Figure 3, apples were not assigned as the primary crop to plant in the Lishan area, or along most of the Central Cross-Island Highway. Rather, as we will show further below, apples gradually became the dominant crop due to other significant cultural and social factors. Our immediate point here is to demonstrate that highway construction precipitated the large-scale collection of information concerning the Taiwan's mountain areas through which the highway would pass. This collected information then became crucial when it came time for the Nationalist government to distribute land to construction workers, most of whom were demobilised Nationalist soldiers. The next section outlines how this process of land distribution took place.

**Table 1.** Agricultural resource development migration estimation (the table is translated from Chinese (original source is from Ministry of Economic Affairs, 1956)

<table>
<thead>
<tr>
<th>Location</th>
<th>Migration capacity</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dajia</td>
<td>230</td>
<td>Fruit trees: 30 ha and 90 persons; rice and cereal total 55.5 ha and 111 persons. Total 201 persons.</td>
</tr>
<tr>
<td>Kayo basin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slamaw</td>
<td>184</td>
<td>Fruit trees: 40 ha and 120 persons; rice and cereal total 32 ha and 64 persons. Total 184 persons.</td>
</tr>
<tr>
<td>(Lishan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tabuk</td>
<td>130</td>
<td>Fruit trees: 30 ha and 90 persons; cereal total 20 ha and 40 persons. Total 130 persons.</td>
</tr>
<tr>
<td>Sqoyaw</td>
<td>302</td>
<td>Fruit trees: 70 ha and 210 persons; rice and potato total 46 ha and 92 persons. Total 302 persons.</td>
</tr>
<tr>
<td>IuShiyou</td>
<td>150</td>
<td>Fruit trees: 50 ha and 150 persons.</td>
</tr>
<tr>
<td>Total</td>
<td>996</td>
<td></td>
</tr>
</tbody>
</table>

In order to provide for veterans engaged in road construction, the Veterans Affairs Council of the Executive Yuan, will construct 110 houses in Sipao, Lishan and other districts along the Cross-Island Highway for the use of veterans engaging in agriculture. ... Construction costs for each house will total NT$12000. After construction they will be transferred to veterans who will repay the loan costs in annual instalments over ten years. As well as a house the grant will comprise five fen [approximately half a hectare] of land. (Military News Agency, 1959)

Under this policy, the mountain landscape alongside the highway was depicted not just as a natural landscape but also as a natural resource. As such, the Central Cross-Island Highway was depicted as leading those who
travelled along it to a place with abundant resources ripe for utilisation, as the following excerpt illustrates:

Cut off from the rest of the world, this landscape abounds in vistas and resources, which will be ripe for human enjoyment and development after this superhuman feat of road construction. Thus, the construction of the Cross-Island Highway is vital for both the development of the tourist industry and the growth of agricultural production in the province [Taiwan]. (Zhang, 1959)

To realise the development of agriculture in these regions, however, required the government to assign a particular piece of land to each veteran. According to the Act Governing the Farmland Grants to Anti-Communist and Anti-Soviet Union Soldiers, every veteran had the right to a piece of land in the mountain areas of Taiwan. The specific location of the land was assigned by the Executive Yuan. In addition, the Veterans Affairs Council – a unit directly under the Executive Yuan – also established and operated farms along the cross-island highways staffed by military veterans. Fushoushan and Wuling are two well-known examples of such veteran-operated farms in the Lishan area. Being directed by the Veterans Affairs Council, these farms had close relationships with the central government of the Nationalist Party and possessed great propaganda value for those seeking to promote the success of Taiwan’s mountain agriculture policies.

Although the Nationalist government granted the former Nationalist soldiers lease rights or even property rights in return for their highway construction labour, most of the land granted was covered by forest. Thus, most of these soldiers-cum-farmers did not have access to lands ready for crops to be planted. One of the major tasks for the Veterans Affairs Council, then, was to transform these forests into

Figure 2. An investigation report about the potential arable land for mountain agriculture along the Central Cross-Island Highway (Ministry of Economic Affairs, 1956)
<table>
<thead>
<tr>
<th>Place</th>
<th>No</th>
<th>Location</th>
<th>Land belonging</th>
<th>Elevation (m)</th>
<th>Geomorphological Grade</th>
<th>Aspect</th>
<th>Soil property</th>
<th>Vegetation</th>
<th>Area estimated (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ta-chia Kayo basin</td>
<td>1</td>
<td>Northern Kayo, right bank of Ta-chia River</td>
<td>Ta-chia working circle, forest compartment No. 11</td>
<td>1700</td>
<td>Mountain top flat land</td>
<td>Southeast</td>
<td>Sandy loam</td>
<td>Alpine silver grass</td>
<td>30</td>
</tr>
<tr>
<td>Kayo</td>
<td>1</td>
<td>Northern Kayo, left bank of Ta-chia River</td>
<td>Indigenous land</td>
<td>1400</td>
<td>River side flat land</td>
<td>Southeast</td>
<td>Sandy loam</td>
<td>Alpine silver grass</td>
<td>1.5</td>
</tr>
<tr>
<td>Kayo</td>
<td>2</td>
<td>Northern Kayo, right bank of Tai-ka-li-jiao River</td>
<td>Ta-chia working circle, forest compartment No. 12</td>
<td>1600</td>
<td>Hillside flat land</td>
<td>Southeast</td>
<td>Sandy clay loam</td>
<td>Alpine silver grass/forest range</td>
<td>10</td>
</tr>
<tr>
<td>Kayo</td>
<td>2</td>
<td>Northern Kayo, left bank of Tai-ka-li-jiao River</td>
<td>Indigenous land</td>
<td>1500</td>
<td>Terrace slope</td>
<td>Southeast</td>
<td>Sandy loam</td>
<td>Alpine silver grass/forest range</td>
<td>44</td>
</tr>
<tr>
<td>Subtotal Slamaw (Lishan)</td>
<td>3</td>
<td>Northwestern Lishan, left bank of Ta-chia River</td>
<td>Indigenous land</td>
<td>1400</td>
<td>River side flat land</td>
<td>—</td>
<td>Gravel sand</td>
<td>Alpine silver grass</td>
<td>45.5</td>
</tr>
<tr>
<td>Slamaw (Lishan)</td>
<td>4</td>
<td>Northeastern Lishan, right bank of Ta-chia River</td>
<td>Ta-chia working circle, forest compartment No. 13</td>
<td>1560</td>
<td>Valley flat land</td>
<td>—</td>
<td>Gravel sandy loam</td>
<td>Alpine silver grass</td>
<td>19</td>
</tr>
<tr>
<td>Slamaw (Lishan)</td>
<td>3</td>
<td>Eastern Lishan, left bank of Hehuanshi River</td>
<td>Ta-chia working circle, forest compartment No. 51</td>
<td>1700</td>
<td>Ridge slope</td>
<td>3</td>
<td>Gravel light clay</td>
<td>Alpine silver grass/forest range</td>
<td>50</td>
</tr>
<tr>
<td>Subtotal Tabuk</td>
<td>4</td>
<td>Eastern Tabuk, left bank of Hehuanshi River</td>
<td>Ta-chia working circle, forest compartment No. 50</td>
<td>1700</td>
<td>Ridge slope</td>
<td>5</td>
<td>Gravel light clay</td>
<td>Alpine silver grass/forest range</td>
<td>22</td>
</tr>
<tr>
<td>Sqoyaw</td>
<td>5</td>
<td>Northwestern Sqoyaw, right bank of Yi-ji-lang River</td>
<td>Ta-chia working circle, forest</td>
<td>1600</td>
<td>Gentle slope</td>
<td>5</td>
<td>Gravel sandy loam</td>
<td>Alpine silver grass</td>
<td>2</td>
</tr>
</tbody>
</table>
farmlands (Fig. 4) by demarcating the exact area granted to each former Nationalist soldier, and constructing the required infrastructure that would make possible the introduction of new crops. In this fashion, the introduction of apple plantations and other crops substantially changed the mountain landscape by reconfiguring transportation mobility and agricultural plantation capacity of the Lishan area.

As well as transforming the land, developing mountain agriculture also required a transformation of former Nationalist soldiers into farmers. This achieved not only the training of a labour force for mountain agriculture but also the demobilisation and disarming of a military trained population so as to ensure they did not later become a source of political instability. The Nationalist government, accordingly, directed the Provincial Agriculture College (now National Chung-Hsing University) to investigate the suitability of Taiwan mountain regions for growing temperate fruits. Around Lishan, Fushoushan and Wuling farms became learning centres where former Nationalist soldiers could acquire the required skills and know-how for growing apples and other temperate fruits.

The construction of the Central Cross-Island Highway and the ensuing land distribution for mountain agriculture constituted, therefore, a process of political territorialisation aimed at enhancing and securing the Nationalist government’s control over Taiwan’s mountain areas. Road construction and agricultural development was not just a matter of introducing new crops and the cultivating agricultural expertise. Instead, it entailed a series of activities designed to transform the rough mountain terrain into farmland landscapes, and soldiers into farmers. Road construction and the establishment of apple plantations and other agricultural enterprises in areas like Lishan area have substantially changed the landscape of Taiwan’s mountains. More importantly, the processes of road construction and agricultural development produced detailed information about the mountain areas through surveying (Figs 2,3), clearing forests (Fig. 5), land distribution, land entitlement and so on. In this way, the previously ‘natural’ yet ‘murky’ forest landscape was gradually transformed into a visible landscape of roads, fruit plantations and other farms. Or to use James Scott’s (1998) terms, this was a process of

<table>
<thead>
<tr>
<th>compartment</th>
<th>slope</th>
<th>elevation</th>
<th>area</th>
<th>land type</th>
<th>vegetation</th>
</tr>
</thead>
</table>
| No. 15      | Gentle slope | 1600 | 110 | Gravel clay loam | Alpine silver grass-
forest range |
| No. 39      | Tchia working circle, forest compartment | 1900 | 6 | Gravel clay loam | Alpine silver grass-
forest range |
| No. 28,29   | Tchia working circle, forest compartment | 1850 | 50 | Flat land | Alpine silver grass-
range |

**Table 2 Continued**
transforming the mountains into a territory ‘legible’ to the Nationalist government’s sovereign gaze. Here, apples are not just apples. Rather, they have also epitomised the process of transforming the mountain landscape for political purposes. Nevertheless, even if they were introduced into Taiwan’s mountains for political purposes, apples were to become, equally, a commodity that would connect the Lishan area to broader regional and global markets, as outlined in the next section.

Table 3. English translation of Figure 3 (only the upper side)

<table>
<thead>
<tr>
<th>Location (Dajia basin)</th>
<th>Location (Lishan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kayo</td>
<td>Slamaw</td>
</tr>
<tr>
<td>30.00</td>
<td>40.00</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Slamaw</td>
<td>Tabuk</td>
</tr>
<tr>
<td>40.00</td>
<td>30.00</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Tabuk</td>
<td>Sqoyaw</td>
</tr>
<tr>
<td>30.00</td>
<td>70.00</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Sqoyaw</td>
<td>InShiyou</td>
</tr>
<tr>
<td>/</td>
<td>50.00</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>InShiyou</td>
<td></td>
</tr>
<tr>
<td>/</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>100.00</td>
<td>120.00</td>
</tr>
</tbody>
</table>

The ‘Golden Ten Years’: Prosperity and market deterritorialisation

After completing road construction and distributing land entitlements, the Nationalist government commenced trials of various temperate fruits in the Lishan area. Pears, peaches and apples were the three main kinds of temperate fruits trialled, with pears as the project’s initial focus. However, the market price of apples increased much faster than that of pears.
According to one Lishan farmer, ‘originally, we grew apples and pears, but the price of apples began to skyrocket overnight’. Statistics on the price and yield of peaches, pears and apples for 1973 (the first year of that data for apples is available) show that peaches were priced at NT $4047 per ton, pears at NT$8721 per ton and apple at NT$29 994 per ton. The price commanded by apples was thus more than seven times that of peaches, and more than three times the price of pears. The price of apples increased even more between 1973 and 1980 (Fig. 6).

The high price of apples led more and more people in Lishan to start planting apples rather than pears or peaches. Additionally, growing demand for apples attracted more people to move to the Lishan area to take up apple cultivation. In this way, the growth of temperate fruit agriculture around Lishan, and apple growing in particular, integrated Lishan into Taiwan’s fruit markets. That is, the demand for apples deriving from increased consumption in distant urban markets substantially re-oriented land use patterns in the Lishan area. However, we argue that these connections were dependent on the prior construction of the Central Cross-Island Highway and the subsequent grants of land to Nationalist veterans. Put another way, the political territorialisation wrought by road construction and land distribution also enabled Lishan to be incorporated into more distant markets for apples and other fruits. Thus political territorialisation served as the precursor for a subsequent market-led deterritorialisation of the Lishan area.

The process of market deterritorialisation did not occur spontaneously. Instead, increasing
market demand for apples, we argue, stemmed from both cultural and social factors that conditioned this fruit market value in Taiwan. Pre-war plantings of apples in Lishan by the Japanese colonial administration were sparse and sporadic, meaning that apples were not readily available except via import. Accordingly, after World War II and during the early Cold War era, apples were not commonly consumed in Taiwan. Instead, they were considered to be an exotic, rare and expensive import.

The received representation of apples as an exotic and rare treasure was significantly enhanced during the early Cold War due to Taiwan’s receipt of economic aid from the United States. As a member of the anti-communist bloc led by the United States, the ROC was a recipient of aid from the United States through the Military Assistance Advisory Group. Under this programme, many American military personnel resided in Taiwan. Arriving in a post-war Taiwan still mired in poverty, these Americans brought financial and military resources that created ‘another world’ inside Taiwan. And with American soldiers living in close proximity to locals, many Taiwanese inevitably became aware of contrasts between the lifestyle of American soldiers and that of most Taiwanese people. Their houses were thought to be more beautiful than ordinary Taiwanese dwellings, and their food and daily necessities (including apples) were directly imported from the United States. Apples, somehow, became an unlikely symbol of the disparity between each group’s standard of living. The renowned Taiwanese writer Chun-Ming Huang’s (1972) well-known work, The Taste of Apples, focuses on this contrast. Huang identifies various differences between American and Taiwanese ways of life. For example, while many Taiwanese worked as

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**Figure 6.** Prices of pears, peaches and apples. *Source: Taiwan Agricultural Yearbook, 1959, 1962, 1965, 1974, 1977 and 1981. [Colour figure can be viewed at wileyonlinelibrary.com]
low-wage manual labourers, Americans drove Mercedes Benz cars; while Taiwanese rarely had access to good medical treatment, Americans could easily visit clean and well-equipped modern hospitals. While Taiwanese families had scarce resources to raise children, American kids were provided with educational opportunities and plenty of resources. Huang uses apples to illustrate this final contrast, emphasising that an apple was a common and unremarkable object to an American, but to receive an apple as a gift was considered an unexpected and surprising stroke of good fortune by most Taiwanese families. Eventually, this image of apples as an exotic, rare and expensive item led to the fruit coming to represent social progress and an advanced modern lifestyle, as epitomised by the American way of life.

In the Lishan area, similarly, apple plantations were depicted as a means for people to ‘progress’ to a better quality, modern way of life. According to a United Daily News article looking back at the history of apple farming in Lishan:

Writing in 1973, Lin Yuanlin, a consultant at the Taiwan Forestry Research Institute, described the incipient “Golden Age” of apple growing: “For the past four or five years the lives of inhabitants of the upper reaches of the Dajia River have undergone a startling transformation. Jiayang, Lishan, Songmao and Huan-shan are all fairly well-off [now]... In Huanshan, for instance, there are less than a hundred households, but the village already has over ten cars. In my neighborhood in Taipei, even with neighbors working in various levels of management positions, there is not a single car amongst seventy households. Looking at the interiors of the villagers’ houses, the fit out is already approaching the standard of a good hotel. They have fridges, washing machines, televisions and carpeted living rooms. It’s all quite high-end.” (Lin, 1996)

Apples were thought of as ‘gold’ especially during the so-called ‘the golden ten years’ of apple growing in Lishan from 1970 to 1979. During this time, the representation of apples as an exotic and rare good associated with a sense of progress and modernity stoked demand for (and prices of) apples. In turn, the apple ‘gold rush’ motivated people around Taiwan to move to the Lishan area to participate in apple production. As a result, the flow of people and goods due to apple plantations integrated Lishan area into a wider network of production and consumption, binding Lishan to the market economy. We argue therefore that the state-driven process of political territorialisation in Lishan led, subsequently, to a process of deterioralisation and market integration.

The ‘golden ten years’ ended in 1979. That year Taiwan began to import apples from the United States. By 1981, the United States was exporting more apples to Taiwan than to Canada. In 1983, 50 835 tons of apples were imported into Taiwan, with 90% of those apples from the United States (Central Daily Newspaper, 1983). Canada, Korea and Chile also began to export apples to Taiwan in the 1980s. As a result, apple producers in the mountain area of Taiwan met with competition from other players in an increasingly global market. The connection between the mountain area and the local market economy of apples had further deterrioralised as this local market deepened its connections with global markets.

Around the same time that local apple farmers began to face competition from foreign suppliers of apples, a new regime of environmental governance also emerged on the back of mounting public criticism of mountain agriculture’s environmental costs. The next section will examine how the connection to the global market economy intersected with the development of new, environmentally-oriented land use strategies for mountain agriculture.

Environmental governance: Combining state and the market reterritorialisation

In 1980, a debate erupted in the Legislature over the policy to open apple importation from other countries, particularly the United States. Legislators who opposed apple imports argued that they would harm the livelihoods of local apple farmers. Those in favour of imports countered that local farmers should abandon their mountain orchards if they were no longer able to turn a profit. Additionally, they argued that apple imports could combat the over-exploitation of mountain lands by farmers. Here we see that the landscape of mountain agriculture, including apple plantations, had by the
1980s increasingly become a symbol of environmental degradation. To briefly explain the apple’s transition from being symbol of progress to a symbol of environmental degradation, we need to outline the development of environmental movements in 1980s Taiwan.

Due to rapid industrialisation and economic development, by the 1980s Taiwan was grouped with South Korea, Hong Kong and Singapore as one of the ‘Four Tigers’ of East Asia. However along with industrial and economic growth, Taiwan also experienced increasing environmental problems, which were by this time attracting ever greater public concern (Ho, 2001). These concerns played out in campaigns against industrial pollution, dam and road construction in sensitive mountain areas, and nuclear power. Gradually, mountain agriculture in Taiwan, especially along the Central Cross-Island Highway, also became a target for activists who blamed it for hastening soil erosion and land degradation.

Increasing awareness of environmental issues, and particularly of the crucial need to protect catchment zones of reservoirs to reduce rapid sedimentation, led to the growth of representations and discourse critical of mountain agriculture in Lishan. For example, media in this era now began to discuss the landscape of mountain agriculture in Lishan in terms of ‘land overexploitation’ (chaoxian liyong), ‘illegal deforestation’ (lanken lanfa) and ‘land degradation’ (pohuai shuitu) (Zhuo, 1987; Huang, 1989). But even if its benefits were increasingly contested in the 1980s and 1990s, the Central Cross-Island Highway remained indispensable for the transport of people and goods required for mountain agriculture. However, the increasingly vocal criticism of farming practices in Lishan and mountain agriculture in general did not result in the institution of a new regime of land use governance in mountain areas. It would take an enormous natural disaster to shift the debate decisively.

On 21 September 1999, Taiwan was hit by a massive earthquake measuring 7.3 on the Richter scale (an event now known in Taiwan simply as ‘921’, jiù ěr yì). This disaster killed 2415 people, rendered over one hundred thousand people homeless and caused over NT$300 billion dollars worth of property damage. It also wiped out sections of the Central Cross-Island Highway. As a consequence, the transportation costs for agriculture products grown in the
Lishan area suddenly increased substantially. Those whose livelihood depended on mountain agriculture in Lishan urgently asked the government to rebuild the highway. Countering this, environmental NGOs, scholars and many pro-environment officials came out against rebuilding the highway. They used the slogan, ‘return it to nature’ (huangei daziran) to argue that the damaged highway should be left to recover without human intervention (Yu, 2000; Zhang, 2000). The increasing voices calling for ‘return it to nature’ significantly intensified the conflict over representations of mountain agriculture and its future in the Lishan area.

Mountain agriculture became increasingly controversial following a series of typhoons that hit Taiwan in the early 2000s. Although Taiwan is often affected by typhoons, in the 2000s greater attention was being paid to the scale of associated natural disasters (such as landslides in mountain areas) which seemed to intensify, allegedly due to global climate change. The deadly floods and landslides caused by the typhoons Mindulle in 2004 and Morakot in 2009 resulted in increasing public criticism of mountain agriculture, including that conducted in the Lishan area. Public opposition to the development of mountain agriculture grew due to media representations of such natural disasters. For example, the award-winning 2013 documentary Beyond Beauty: Taiwan from Above argued that mountain agriculture was a major cause of natural disasters that accompanied earthquakes and typhoons. Images of land degradation in mountain areas, in this film and elsewhere, galvanised public opinion against mountain agriculture and for a ‘return to nature’.

Accompanying this turn in public opinion was a strengthened land management regime on the part of the Forestry Bureau, a governmental unit under the Executive Yuan’s Council of Agriculture. Since 2005, the Forestry Bureau has gradually stepped up its practices of clearing land of temperate fruit trees, including apple plantations, in order to ‘plant back’ tree species indigenous to mountain areas (Fig. 7), such as ring-cupped oak, Taiwan incense cedar and Taiwan zelkova. The Forestry Bureau aims to restore a ‘nature’ of the past, a mountain landscape that pre-existed the establishment of farming around Lishan. To do so, according to one Lishan apple farmer, the Bureau offers ‘compensation’ of up to NT$200 000 for each jia (about 0.96992 ha) of land. However, most of the farmers in Lihan have not accepted this offer. Instead, many have resisted land acquisitions and protested against the policy.

Some of these farmers have also endeavoured to produce apples using ‘environment-friendly’

Figure 8. Honey apples (revamped photo from a calendar in one interviewee’s house). [Colour figure can be viewed at wileyonlinelibrary.com]

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methods to counter popular images and discourses increasingly critical of mountain agriculture. In contrast to negative representations of mountain agriculture and attempts by the government to return such farms to their previous state, agricultural products such as apples have more recently come to symbolize a revived interest in local agriculture on the part of Taiwanese consumers. Here, being ‘local’ (zaidi) has emerged as a sign of new, positive models for production and consumption. In Taiwan as elsewhere, ‘local’ has come to be seen by some consumers as a way of resisting negative impacts of the global food system. In Taiwan public alarm over issues of food safety and food security in the globalised food production chain has been particularly acute. Accordingly, local production and consumption have emerged as core values for alternative food systems in Taiwan (Tsai, 2016). In other words, ‘local’ food production and consumption in Taiwan signifies supporting local farmers and environment-friendly farming methods. As a result, farmers in Lishan and elsewhere have highlighted their ‘local’ status in the branding for agricultural products grown in Taiwan’s mountain areas.

An emblematic case study of such ‘local’ mountain agriculture is the ‘Honey apple’ (mi pingguo) grown in Lishan. Honey apples are not, in fact, a distinct variety of apple. Rather, they are apples harvested in deep winter, when apple trees reserve their energy in their fruits. This energy is converted to sugar that concentrates around the seeds of apples, resulting in their flesh having a distinctly darker colour than regular apples (Fig. 8).

Because of their darker flesh, in earlier times these apples were considered rotten. More recently though, the dark flesh has become a signifier of ‘authentic’ local production.

In Taiwan, the ‘local’ label also implies ‘environment-friendly’, and producers of honey apples in Lishan have been keen to encourage counter negative representations of upland fruit production by encouraging alternative narratives of environment-friendly local fruit. For example, the well-known Homemakers Union Consumers Co-operative, a major force promoting local and environment-friendly agriculture in Taiwan, has actively promoted honey apples. In 2013, it published an article on its website lamenting the disappearing honey apples of Taiwan. According to the article (Shi, 2013):

... the farmers whose land is going to be reclaimed by the Forest Bureau can only await their final harvest. The Forest Bureau has taken the orchards back and planted small native trees in their place. I cannot help but wonder if those small trees will survive the cold winter and if they can truly achieve the promised water and soil conservation. This policy not only risks further soil erosion on bare land where fruit trees have been cleared, but also deprives farmers of their hopes, after so many years spent working in these mountains ...

The article explicitly questions the Forest Bureau’s policy of clearing fruit trees, including apple trees, and replanting the area with native trees. Instead it argues, echoing the view of many farmers in Lishan, that fruit orchards have actually protected mountain lands from landslides and other forms of degradation. In other words, fruit plantations such as honey apples not only represent local agricultural production in Taiwan, but also symbolise environment-friendly modes of land use, in contrast to widespread negative representations of mountain agriculture.

Conclusion

We have argued that the process of turning forests into farms and soldiers into apple farmers has been closely linked to territorialisation. In doing so, we have argued that if territory is both political and economic, it is also about the gradual transformation of identities. Apple growing, and mountain agriculture in general, represents one important way that territorialisation has been realised. We regard apples as agents in this territorialisation process, rendering the murky border landscape into a ‘legible’ terrain and landscape. Our case study highlights two intertwined dimensions of the production of territory: apples as agents of political territorialisation and apples as agents of market de- and re-territorialisation. In the former, apples are linked to political actions designed to bring about territorialisation that serves state sovereignty. It transforms the murky ‘natural’
Dovey and Wan between apples, soldiers and territoriality in Taiwan’s mountain areas

The concept of territory based on the relation of economic forces and the notion of becoming ‘land’ is creative, rather than defensive, a form of becoming produced by creative forces that render territoriality a form of becoming. Specifically, through apples, the territory of Lishan is not just a passive geographical space, but engaged in a process of becoming, a process which re-makes the mountain areas of Taiwan into ‘apple zones’ both spatially and socially. The spatial dimension centres on processes of political territorialisation, economic deterritorialisation and combined reterritorialisations whereby apple plantations have transformed the landscape from one focused on state power to one embedded within development and market frameworks which entail their own particular forms of politics. The social dimensions are centred on the politics of forging connections among different elements circulating through the mountain areas of Taiwan, including apples, soldiers, transport infrastructures and agricultural policies. Therefore, territoriality in the mountain area of Taiwan becomes a creative force in integrating the spatial and social dimensions of Lishan and constituting it as an ‘apple zone’. To see Lishan as an ‘apple zone’ in this sense aligns our argument with Dovey’s sense of ‘becoming’: Lishan exemplifies a form of becoming produced by creative forces of territoriality that have materialised via the processes of turning soldiers into farmers and forests into orchards.

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Notes

1 Investigators in Taiwan included Ino Kanori (1867–1925) and Torii Ryuzo (1870–1953), who used anthropological methods to investigate the aboriginal in Taiwan. Mori Ushinosuke (1877–1926) dubbed ‘the premier exponent of Taiwan aboriginal investigation’. Kawakami Takiya (1871–1915) and Sasaki Sunichi (1888–1961) were botanists. Kano Tadao (1906–1945) was a zoologist (Digital Taiwan – Culture and Nature. Retrieved 29 March 2017, from Website: http://digitalarchives.tw/Exhibition /1603/1.html).

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