Chinese Investment into Tissue-Culture Banana Plantations in Kachin State, Myanmar

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Case Study
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Cover image: The plantation workers are maintaining the banana. (photo: Ko Lwin)
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Executive Summary

In 2006, commercial tissue-culture banana technology was first introduced into Kachin State, northern Myanmar, through China’s Opium Substitution Programme. Since 2015, there has been significant growth in the number of plantations. Cultivars of the Cavendish sub-group are planted and can be harvested after 11 months. Although banana can be grown year-round, the main period of harvesting in Kachin State is between January and May, when prices are higher in China due to a dearth of other seasonal fruits. The main focus of this study is on investment into the cross-border tissue-culture banana value chain, how land is accessed to set up plantations, and how production conforms to the Union legal and regulatory system. The study takes the view that banana production is not a new, isolated phenomenon, but has emerged out of existing structures of power, conflict and trade.

Within Kachin State, most plantations are located in Waingmaw Township, but they are also found in Myitkyina, Bhamo, Mansi, Momauk and Shwegu. Although this is the core area of production in Myanmar, government land records indicate that there are significant tissue-culture areas focused on the Chinese market in Shan State, Ayeyarwady, and Sagaing Regions, with new plantation areas emerging in Tanintharyi and Mandalay Regions, and Kayin State. In Kachin State, the output is transported by truck for export through the nearby border gates of Kanpaikti, Laiza (from areas controlled by the Kachin Independence Organisation), and Lwegel, then passing through the market hub of Tengchong City, Yunnan Province. A study conducted by the Kachin State Department of Agriculture identifies plantations on more than 60,000 acres (24,300 ha) in Waingmaw Township and more than 100,000 acres (40,500 ha) in government-controlled areas of the State. However, research in 2019 by the Land Security and Environmental Conservation Networking Group (LSECNG) claims that plantations occupy more than 170,000 acres (68,800 ha), with 142,961 acres (57,854 ha) found in Waingmaw Township alone. The latter figures also tally closely with unpublished records of the Kachin State Hluttaw (Parliament).

Banana produced in Kachin State is generally considered to be second grade quality, recently commanding a price of around 3-4 CNY/kg (compared with 6-7 CNY/kg for high quality produce). Nevertheless, in a cost-benefit assessment conducted especially for this report, it is identified as a highly valuable crop, showing a net profit of 4,383 USD per ha (almost 2.4 million MMK per acre) in the mother plantation season, and 5,648 USD per ha (over 3 million MMK per acre) in subsequent seasons (known as ratoons). With strong demand from China, the presence of cheap land and labour, fertile soils, favourable climatic conditions, and a proximity to Yunnan Province, the high potential net return of banana over a short period of time explains the rapid expansion of the crop and the related rush to acquire land.

Export data from Kanpaikti border gate and the whole country show a sharp upturn in the volume of trade from below 100,000 tons in 2015-16 to 733,949 tons in 2019-20. A 22-wheel truck leaving Myanmar arriving at Kanpaikti and Lwegel border gates carries about 25 tons of banana. The official tax and duty per truck comes to 572,000 MMK (424 USD), of which 300,000 MMK (222 USD) covers a 2 percent withholding (income) tax, in addition to a range of locally collected formal and informal charges. With an estimated withholding tax income of 6.52 million USD for fiscal year 2019-20, there is a clear incentive for the government to maintain trade. However, if taking the estimated area of land use for plantations as mapped by LSECNG in 2019 for Kachin State (170,000 acres) and a low-end estimated yield of 10 tons per acre, this suggests an output of 1.7 million tons, which exceeds national-level export data by more than 100 percent. There is a chance that the full amount and value of produce is not being registered and so the government is missing out on a significant level of taxation from exports. Furthermore, the other fees collected at the border gate, such as for immigration, labour, plant protection and road use, represent a low rate in comparison with the profitability of the crop and the environmental costs.
Although the customs tariff on banana has been reduced to 0 percent via the ASEAN-China Free Trade Area, the crop is not listed for inspection and quarantine by Chinese customs authorities. As a result, a border residents’ trade agreement is utilised on the Chinese side of the border, where local citizens can freely trade about 4 tons of banana per day. This is a highly organised process, involving 66,000 residents in 2016.

There are two types of Chinese investors, namely agribusiness companies and small-scale entrepreneurs. In 2019, two companies cultivated banana through the Opium Substitution Programme. 13 company members of Tengchong International Chamber of Commerce operated through Kanpaikti border gate, while at least one other company operated through Lwegel. With a presence in the State for a number of years, many of these companies have established business networks, including links to figures from State government, the military, and militia groups. There are known plantations on land under the jurisdiction of the Kachin Independence Organisation (KIO), the Border Guard Force (BGF), and the militia group Lasang Awng Wa. In the case of the KIO, the organisation has called for an end to banana production in its areas of control since 2014. However, the profitability of the crop, alongside high demand from China, its main trading partner, locks in a dependency on its continued production. As with the rest of Kachin State, there are competing forces looking, on the one hand, to limit banana due to negative social and environmental impacts, but on the other hand to maximise its high profitability. Meanwhile, small-scale Chinese investors either sub-lease land from agribusiness companies, or seek out Myanmar-based intermediaries. A list of 36 local companies involved in banana plantations was drawn up for this report. On the whole, business relationships are not formally registered at State or Union level, but are maintained through mutual benefits, where the broker arranges land, while the investor controls the flow of capital, inputs and output.

Legislation applicable to banana involves land and investment laws, underpinned by environmental regulation. The Investment Law and its accompanying Rules detail how investors can apply for a permit or endorsement to operate in Myanmar, and Land Rights Authorisation: three ventures had received endorsements up to the publication of this report. They can then access various categories of land, including vacant, fallow and virgin (VFV) lands, and farmland. However, most Chinese investors are not registering their commercial presence and use of land in Kachin State, thereby operating illegally according to investment laws. The working conditions for plantation labour frequently contravene labour laws in terms of...
contracting, wage rates and when they are paid, working hours, leave, health and safety, child labour, and living conditions. Furthermore, although fertilisers and some saplings undergo formal protocols for commercial use, it is uncertain whether all imported inputs used (including pesticides) follow the necessary regulations and are registered or taxed.

The rise of banana plantations in Kachin State is compounding land conflicts. While some smallholders benefit from a direct rental payment, other agreements are obtained through coercion, involving pressure from community leaders, or misleading information such as the unfulfilled promises of Form 7 farmland certificates. Many smallholders lose their land altogether without consultation, particularly in cases of land left empty by internally displaced persons (IDPs). The intensive use of chemical fertilisers and pesticides in banana cultivation is leading to major environmental impacts. Soil degradation and erosion can occur even after three years, leaving the land unusable for several years afterwards. Chemical run off is entering water sources, affecting the health of humans, livestock and local biodiversity. This biodiversity is further impacted by landscape changes through forest or scrubland clearances, or the diversion of water courses for irrigation needs in plantations. In 2017, a strain of Panama disease (Fusarium wilt) was found in Myanmar, most likely introduced from Yunnan Province. Once infected, this fungus can stay in the soil for years, and although not affecting other crops, can spread to indigenous banana varieties.

In response to the environmental and social impacts of banana plantations, village communities have taken part in numerous protests by letter and through marches. In 2020, a special Kachin Investigation Committee was looking into the case of banana, and the Kachin State government has drafted a Standard Operating Procedure in order to register companies and plantations, regulate plantations, collect commercial taxes and reduce the environmental impacts. There is some evidence of cross-border coordination to address issues in the banana trade, looking to set up a Myanmar-China Joint Economic Supervision Team and a bilateral agreement on legal trade and plant quarantine standards. In the light of these responses, a set of recommendations are put forward to promote more responsible investment in banana plantations, the rights of local land users, and more sustainable production practices. The highlights are provided below.

1. A moratorium on new banana plantations would provide some breathing space to assess those that already exist and apply existing regulations to their operations. As part of this process, all existing plantations can be required to undergo an environmental assessment.

2. Disputes can be avoided through a prohibition against plantations in village areas without the consent of land users operating under customary forms of tenure. This includes IDPs.

3. There is much circumstantial evidence relating to the environmental impacts of banana plantations. Further research is needed to make an inventory of the chemicals used in production, combined with soil, water and human health tests to measure their effects.

4. There is an opportunity for the government to clarify commercial taxes and thereby enable more effective enforcement and collection of tax revenues. Due to the amount of banana that is possibly not being recorded for export, and the low value of present commercial taxes, Union and State governments are missing out on a significant revenue stream compared with the profitability of the crop. An improved system of taxation and collection can link to land use, import and commercial use of fertilisers, pesticides and saplings, the amount of harvested crop, export levies, and environmental degradation. It could help to fund the human resources needed to monitor and enforce regulations relating to banana.

5. The ASEAN-RAI guidelines can help to frame a national response in Myanmar to tissue-culture banana cultivation, which respects
the rights of local communities, promotes clear and transparent means for investment, provides fair dispute resolution mechanisms where grievances do occur, and looks to safeguard the environment.

6. The proposed Standard Operating Procedure (SOP) on banana could offer a unifying set of steps to solve many issues surrounding the inclusiveness and sustainability of banana investments. To ensure the adequacy of the content of the SOP, the process requires careful consultation among all stakeholders.

7. Contract models can be introduced to better account for Chinese investors when land is obtained for plantations. There is a need for greater transparency over the presence and conditions for both domestic and foreign workers on plantations. This includes Chinese managers, workers, and truck drivers obtaining appropriate immigrant status to work in Kachin State.

8. Chinese agribusiness companies are looking for clear regulations to operate in Kachin State. This should be encouraged as part of a multi-stakeholder approach to develop responsible lines of investment and sustainable production practices.

9. A proposed upgrade to Kanpaikti border crossing presents an opportunity to improve inspection facilities for collecting revenues on imported chemicals and saplings, to check on permits and enforce immigration requirements relating to commercial agribusiness ventures.

10. A National Water Law is currently being drafted, and it is hoped that a National Land Law will follow. Both can unify and clarify multiple strands of legislation relating to banana.

11. Union and Kachin State governments will benefit from their support for local farmer groups, religious NGOs and think tanks in monitoring and identifying commercial and environmental violations on the ground. CSOs could also support an independent system of complaint and investigation.

12. The government could make data about plantation operators and the areas under cultivation publicly available. Satellite imagery can help to identify plantation areas throughout the whole of Kachin State, and could also clarify the presence of plantations in protected and reserved forest. This represents a good opportunity for government and civil society to work together.
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
</tr>
<tr>
<td>ASEAN-RAI</td>
<td>The ASEAN Guidelines on Promoting Responsible Investment in Food, Agriculture and Forestry</td>
</tr>
<tr>
<td>BGF</td>
<td>Border Guard Force</td>
</tr>
<tr>
<td>CNY</td>
<td>Chinese Yuan</td>
</tr>
<tr>
<td>CPC</td>
<td>Communist Party of China</td>
</tr>
<tr>
<td>CFS-RAI</td>
<td>Committee on World Food Security’s Principles for Responsible Investment in Agriculture and Food Systems</td>
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<tr>
<td>DALMS</td>
<td>Department of Agriculture Land Management and Statistics</td>
</tr>
<tr>
<td>DICA</td>
<td>Directorate of Investment and Company Administration</td>
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<tr>
<td>DoA</td>
<td>Department of Agriculture</td>
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<tr>
<td>EAO</td>
<td>Ethnic Armed Organisation</td>
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<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>EMP</td>
<td>Environmental Management Plan</td>
</tr>
<tr>
<td>FPIC</td>
<td>Free, Prior and Informed Consent</td>
</tr>
<tr>
<td>GAP</td>
<td>Good Agricultural Practices</td>
</tr>
<tr>
<td>IDP</td>
<td>Internally Displaced Person</td>
</tr>
<tr>
<td>IEE</td>
<td>Initial Environmental Examination</td>
</tr>
<tr>
<td>LSECNG</td>
<td>Land Security and Environmental Conservation Networking Group</td>
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<tr>
<td>LUC</td>
<td>Land Use Certificate</td>
</tr>
<tr>
<td>KCWG</td>
<td>Kachin Conservation Working Group</td>
</tr>
<tr>
<td>KIA</td>
<td>Kachin Independence Army</td>
</tr>
<tr>
<td>KIO</td>
<td>Kachin Independence Organisation</td>
</tr>
<tr>
<td>LRA</td>
<td>Land Rights Authorisation</td>
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<tr>
<td>MIC</td>
<td>Myanmar Investment Commission</td>
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<tr>
<td>MMK</td>
<td>Myanmar Kyat</td>
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</table>
Conversions

1 acre = 0.40 hectare
1 hectare = 2.47 acres

The currency exchange rates – for the Chinese Yuan (CNY), Myanmar Kyat (MMK) and US Dollar (USD) - provided below are based on the prevalent rate in Myanmar in July 2020, at the time of the latest research for this report.

<table>
<thead>
<tr>
<th>CNY</th>
<th>MMK</th>
<th>USD</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>200</td>
<td>0.148</td>
</tr>
<tr>
<td>6.75</td>
<td>1350</td>
<td>1</td>
</tr>
</tbody>
</table>
An aerial view of a banana plantation in Kachin State (photo: Hkun Li)
1. Introduction

Since 2015, there has been significant growth in the production of tissue-culture banana in Kachin State, northern Myanmar. The tissue-culture production method takes cuttings from successful plants, which are sterilized and cloned, placed in nurseries and then transplanted to fields (Hein Ko Soe and Dunant, 2019). The idea is to produce consistent, uniform, disease-free crops. Plantations are set up in Kachin State by Chinese investors, using tissue culture saplings that are cultivars of the Cavendish sub-group (Pwint Phyu Phyu Lwin, 2019; Zheng et al., 2018). These plantations are placed close to the border allowing for easy transportation of the crop back to China.

Since the increase in cultivation, numerous media stories have drawn attention to negative impacts on local populations and landscapes. In 2016, Reuters reported on land conflicts between villagers from Naung Chain, about 40 minutes’ drive from the Kachin State capital of Myitkyina (Thin Lei Win, 2016). Residents claimed that without consultation their own village authorities converted the status of their land to that of grazing ground, in order to profit from its rental to a Chinese company and use as a banana plantation. In June 2018, the Myanmar Times highlighted how banana plantations take up border land left empty as residents flee fighting between the Tatmadaw and the Kachin Independence Army (Chan Thar, 2018). The article observed plantations that ‘stretch as far as the eye can see near the China-Myanmar border, which were a battleground in the past’ (ibid.). In January 2019, Frontier Myanmar published an in-depth exposé (Hein Ko Soe and Dunant, 2019). The article corroborated the issues outlined above, and added further concerns over unlicensed production, and the contamination of soil and water from intensive chemical use.

Despite the extensive media attention, it is hard to assemble a clear picture of the full extent of banana production, particularly with conflict ongoing in Kachin State, and different areas under the control of government, military and militia groups. In early 2019, the Land Security and Environmental Conservation Networking Group (LSECNG), an alliance of 15 local and national NGOs, mapped out some production areas and looked into the impacts of plantations upon communities and the environment (LSECNG, 2019). Later the same year, the Humanity Institute (HI) produced a report focusing on the laws and policies connected to banana investment and cultivation (HI, 2019). This report builds on these previous studies by examining the historical conditions from which tissue-culture banana cultivation has expanded, the present scale of production, and the impacts on the livelihoods of local land users, in social, economic and environmental terms. The approach considers how banana has emerged out of existing structures of power, conflict and trade, utilising the shared border between Kachin State and Yunnan Province in China. It is not concerned with the growth of numerous indigenous varieties or plantains that are cultivated throughout the country for domestic markets and home consumption. The study focuses on investment into the cross-border value chain, how land is accessed to set up plantations, and how production conforms to Union laws and regulations. This includes the working conditions for plantation workers and how far they conform to Myanmar labour laws. A cost-benefit analysis is provided with which to assess the economic profitability of the crop in Kachin State. The report concludes with a set of recommendations that promote more responsible investment, the rights of local land users, and more sustainable production practices.
2. Methodology

An initial phase of research leading to this report took place in early 2019, supported by Oxfam in Myanmar. During this period a literature review helped to collect information about the history of trade between Kachin State and Yunnan Province, China, and about conflict in Kachin State. It also provided a review of laws relating to land, investment, and social and environmental regulations that are relevant to banana production, as well as an overview of the impacts of plantations on communities and local ecosystems. The review gathered information not only about Kachin State, but also about Myanmar as a whole, and about cases in neighbouring countries, particularly Lao PDR. It included academic studies and NGO reports, production data, trade statistics, media reports, and government statutes. Ten structured interviews were then held in Kachin State involving trade associations, State government officials connected to agriculture and investment, and local NGO/CSOs.

From this knowledge base, further research took place during the first half of 2020, supported by MRLG. Trade and production data were updated, and knowledge gaps from the first research period were identified for further investigation, such as an agro-economic perspective on banana, the view of Chinese investors, and conditions for plantation labour. Due to the onset of COVID-19, other respondents were spoken to online using semi-structured interviews. These included legal specialists for Myanmar, labour activists, journalists, and a number of NGO/CSOs with an interest in banana. In China, Mr Yang Bin, a PhD candidate at Yunnan University, spoke with a Chinese banana investor, and members of the Tengchong City government and agribusiness sector. In Myanmar, the study has been greatly enriched by a cost-benefit analysis led by national consultant Mr Ko Lwin. He conducted interviews with five banana investors, and ten informants from key relevant governmental and non-governmental organisations. Finally, the Kachin-based human rights organisation Humanity Institute conducted in-depth interviews and gender-specific focus groups with local and migrant plantation workers, local residents and elders of two villages where land had been converted to banana, and interviews with a head of daily-wage plantation workers and an official from a local banana association in Waingmaw. Findings from this additional research have been integrated throughout the study. An interview list is found in Appendix 1.

During research for this report, secondary data were sourced on the area of land used for banana plantations, and banana export volumes. There are various sources of conflicting data, and the report attempts to navigate some of these inconsistencies. There is no aim to provide a definitive viewpoint. Instead, the contradictions demonstrate the opaque nature of tissue-culture banana production, trade and investment in Kachin State.
Chinese Investment into Tissue-Culture Banana Plantations in Kachin State, Myanmar

3. The emergence of trade and investment relations between Kachin State and China

Tissue-culture banana production has emerged from a legacy of conflict and business enterprises connecting State military forces (hereafter referred to as Tatmadaw), militia groups, commercial entrepreneurs, and Chinese investors. In domestic terms, political and territorial control in Kachin State involves competition between Tatmadaw, paramilitary forces aligned to the State, and ethnic armed organisations (Burke et al., 2017; Woods, 2019). Cold War-era battles over communist insurgency later morphed into struggles for Kachin ethnic autonomy after support from the Communist Party of China (CPC) faded (Han, 2017). In 1994, the Tatmadaw agreed a ceasefire with the Kachin Independence Army (KIA), the armed wing of the Kachin Independence Organisation (KIO). The ceasefire opened up space for numerous capitalist ventures focused on resource exploitation, particularly in concessions for jade mining, timber extraction and rubber production (Jones, 2016; Kiik, 2016). This has allowed for both military State-building by the Tatmadaw, and income generation to support militia groups such as the KIA (Woods, 2016).

Economic relations overlap between different military and militia groups, and business elites at local and national levels. Roles are interchangeable (for example, a military leader might also act as a capitalist land broker) and motivations move between ideological aims for territorial and political power, and economic opportunity. In 2011, the Union-KIA ceasefire broke down, with the KIA refusing to join the State military structure as a Border Guard Force (BGF) (Han, 2017; Jones, 2016). Land remains under the control of either: i) the State; ii) ethnic armed organisations; or iii) is mixed control in contested areas. There is a complex movement between territories of conflict and territories of capital, described by Kevin Woods as a ‘multi-layered territorial patchwork of authority’ (Woods, 2019, p. 3).

Although there are many small armed groups operating around Kachin State, the main groups whose members have a direct connection with banana production are:

- **The Kachin Independence Organisation/Army (KIO/A):** Formed in 1961, the Kachin Independence Organisation is the largest ethnic organisation in Kachin State, and has long sought division of power in a federal Myanmar (South, 2018). Its armed wing remains in conflict with the Tatmadaw.

- **The Border Guard Force (BGF):** In the late 2000s, various militia groups became units within the Tatmadaw military structure, and were given border areas in Chipwi, Tsaw-law and Waingmaw Townships in which to operate. The most notable group involved is the New Democratic Army-Kachin (NDA-K), a communist splinter faction of the KIO.

- **Lasang Awng Wa:** Named after its founder who split from the KIO in 2004, Lasang Awng Wa entered a ceasefire agreement with the Tatmadaw (Buchanan, 2016). Operating as a pro-government militia, the group controls land in Waingmaw Township.

In 1994, the same year as the Tatmadaw-KIA ceasefire, Myanmar and China signed a border -trade agreement (Kudo, 2010, p. 272), facilitating Chinese involvement in programmes of resource extraction. Three border gates were established between Kachin State and Yunnan Province, namely Kanpaiktai, Lwegel and Laiza (Figure 1). As an additional strategy to formalise trade, since the early 2000s China adopted a ‘going out’ strategy, led by corporate investment rather than foreign aid (Grimsditch, 2017, p. 4). Chinese investors worked not only with Tatmadaw forces and local or national business elites, but also with paramilitary forces and ethnic armed organisations, in order to acquire land and boost the cross-border trade of agricultural commodities (Hein Ko Soe and Dunant, 2019; Kramer and Woods, 2012; Woods, 2015, 2013). On the other side of the border, the prosperous town of Tengchong acts as a key hub for investors, through which agricultural and non-agricultural...
commodities from Myanmar will pass (Fresh Plaza, 2019; Liu and Li, 2018). China has become the top foreign investor in Myanmar (Grimsditch, 2017, p. 7; IDI, 2016, p. 10). After the post-2010 reforms, which ended the international isolation of Myanmar, China’s influence remains, particularly in border areas, with intensified investment through the Belt and Road Initiative, albeit not as successfully as in other countries. It has taken an active role in peace negotiations between Myanmar State authorities and the KIO, expressing a concern over US-UK involvement and the ‘internationalisation’ of the Kachin conflict (Jones, 2016).

In 2006, the Opium Substitution Programme was instigated by Yunnan Province, with a focus on the resource-rich northern areas of Myanmar and Lao PDR. The primary activity involved the conversion of opium-growing lands to rubber, but other crops included rice, cassava, maize, sugarcane and watermelon (Kramer and Woods, 2012; Woods, 2015). The programme also brought the entrance of commercial tissue-culture banana technology into Kachin State, from its outset in 2006 (Chan Thar, 2018). Trade was supported by the opening in April 2007 of the Tengchong-Myitkyina highway via Kanpaikti border gate. Production under Chinese investment, using pre-selected companies, was supported with subsidies, preferential loans, and a tax-free import quota. Contracts were signed involving Union-controlled areas, but also with the KIO and NDA-K. By 2010, 91,732 acres (37,122 ha) were part of the programme in northern Myanmar, including areas of Kachin and Shan States (Woods, 2015, p. 45). At this time, banana had already started to dominate production practices in Waingmaw Township.

Figure 1: Kachin State, with Waingmaw Township, the centre of banana production, border gates to China, and the market town of Tengchong
(Chan Thar, 2018). The Opium Substitution Programme also became a major source for concessionary land use (Kramer and Woods, 2012, p. 3). In 2012, local research identified agricultural concessions – not necessarily developed yet – in Kachin State totalling 93,000 hectares for a mix of rubber and timber trees, 3,600 ha monoculture rubber, 24,000 ha banana, and 8,000 ha paddy (ibid., p. 53).

With agribusiness interests crossing lines of conflict, banana plantations are found in both government and non-government areas of Kachin State. Areas of Laiza, the headquarters of the KIO, are known to include banana plantations (Woods, 2013, p. 84). Box 2 (p. 26) highlights the involvement of a KIA officer in acquiring land that was later used as a plantation. Since 2014, the KIO has announced the wish to cease banana cultivation in areas under their control, although plantations are still found today. In an interview for this report, a representative of the KIO explained that a substitute for banana had not been found. This underlines how the profitability of the crop, alongside high demand from China, its main trading partner, locks in a dependency on its continued production. The plantations also serve as a vital income source for IDPs (Internally Displaced Persons) based in the area, who make up the bulk of required labour. Meanwhile, some of the earliest plantations from the late 2000s were identified in an area controlled by Lasang Awng Wa. There are also areas in use around the Waingmaw-China border, under the control of the former NDA-K, now operating as Border Guard Force (see figure 2 p. 20) (Chan Thar, 2018). As with the rest of Kachin State, there are competing forces looking, on the one hand, to limit banana due to negative social and environmental impacts, but on the other hand to maximise its potential to generate profits. Furthermore, Chinese authorities outwardly promote peace to stabilise economic activities and avoid hostilities spilling over the border. Yet private Chinese investment feeds into the coffers of armed groups, potentially contributing to prolonged fighting (South, 2018).

A wider view of banana production in Southeast Asia helps to nuance a historical perspective of its growth in Kachin State. The role of the Philippines is significant, as the largest exporter of banana to China. Between 2012 and 2014, imports from this country were restricted by China as a consequence of disputes over territorial rights in the South China Sea (Friis and Nielsen, 2017; Global Times, 2018). In response, new territories of production emerged around mainland Southeast Asia. The chief beneficiary here was Lao PDR, with tissue-culture banana also introduced through China’s Opium Substitution Programme, and then a surge in new investment around 2012. Yet media and academic attention highlighted damaging outcomes of banana production, both to the environment and human health (Grimsditch, 2017, p. 53; Parameswaran, 2017). As a result, a 2014 government ban on banana production in paddy fields was used by Bokeo and Luang Namtha Provinces to call a total ban on new banana investment. By 2016 the central Lao government announced a review of existing investments (Grimsditch, 2017, p. 57), with 18 Chinese-backed plantations in Bokeo Province suspended due to violations (Parameswaran, 2017). The restrictions in Lao PDR contributed to new investments in Myanmar, with increases also noted in Thailand and Cambodia. However, since late 2018 it seems that the Lao bans are no longer in operation in favour of attempts to instil Good Agricultural Practices (GAP) in the industry (Inkey, 2019). In 2019, the export value of banana from Lao PDR rose to a high of 198 million USD (The Star, 2020).
4. The cultivation process

A typical banana-growing season involves the movement of labour and inputs from Yunnan Province across the border to Kachin State, the provision of land within the State and further labour from around Myanmar. Then the output is exported back to China. With the principal growing area found in Waingmaw Township, Kanpaikti is the commonly used border gate. Towards the south of the State, Lwegel in Momauk Township is also used. In between, Laiza serves areas under the control of the KIO, being the site of their headquarters. Various types of workers can be found on a plantation (HI, 2019, p. 66). From China there are investors/plantation managers, and technicians/chemical formulators. From Myanmar there are middle-men/translator, labourers and security guards. Plantation labourers consist of local villagers and internal migrants particularly from Bamar areas of Myanmar (such as the Magway and Ayeyarwady Regions) and Rakhine State (Hein Ko Soe and Dunant, 2019; Htun Khaing, 2018; Moe Myint, 2017). Labourers include long-term staff living onsite, who comprise individuals, a couple or a family, and daily labourers who are brought in for particularly intensive tasks such as carrying banana bunches from the field, and then boxes of bananas to trucks.  

Bananas are the fruit of a giant herbaceous plant. The plant can replace itself through a shoot leading off from the mother plant at ground level (Banana Link, 2020; Conçalves and Kernaghan, 2014). Table 1 shows the main stages of the production process. After three months setting up the plantation (clearing and preparing the land, readying the saplings), harvesting of the fruit takes place around 11 months after the transplanting of saplings. A similar time-span is needed for subsequent harvests (known as ratoons) using off-shoots of the mother plant. The number of ratoons in a single cycle before replanting depends on continued soil nutrition, which relies on factors such as the density of the plant population and the intensity of input application (particularly chemical fertiliser and pesticides). In an interview for this study, a Deputy Chief of the NDA-K (now Border Guard Force) claimed involvement in tissue-culture banana since 2012, and that one of his farms had managed eight years of a single cycle without replanting. This would certainly represent the upper scale, with most plantation cycles maintained for a shorter period. This is suggested by the fact that most rental contracts for land vary between two and five years. Banana can be grown and harvested all year round, but in Kachin State the main period of harvesting is between January and May, when prices are higher in China due to a dearth of other seasonal fruits.

1 Further detail and perspectives of plantation workers are provided under ‘Labour Conditions’, pp35-37.
### Table 1: Stages and principal activities of banana cultivation during new plantation and ratoon seasons

<table>
<thead>
<tr>
<th>Stage</th>
<th>Month</th>
<th>Mother plantation activities</th>
<th>Ratoon plantation activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing a plantation</td>
<td>i-iii</td>
<td>• Land clearing • Ploughing and harrowing • Installing drip irrigation system • Nursery management and transplanting of saplings</td>
<td></td>
</tr>
<tr>
<td>Vegetative development stage</td>
<td>1-4</td>
<td>• Weeding • Application of fertiliser and pesticides • De-leafing and mulching • De-suckering • Earthen up (adding earth to support plants)</td>
<td>• Cleaning land after harvest of the mother plant • Weeding • Application of fertiliser and pesticides • De-leafing and mulching • De-suckering • Earthen up</td>
</tr>
<tr>
<td>Flowering stage</td>
<td>5-6</td>
<td>• Pruning of leaves • Retention of best sucker • Weeding • Application of fertiliser and pesticides • De-leafing and mulching • Earthen up • De-flowering and de-budding • Propping up plants to bear weight</td>
<td></td>
</tr>
<tr>
<td>Fruit development stage</td>
<td>7-9</td>
<td>• Bagging bunches to maintain temperature and protect from the wind, birds and insects</td>
<td></td>
</tr>
<tr>
<td>Harvest stage</td>
<td>10-11</td>
<td>• Harvesting • Weighing, de-handling, washing, sorting, grading and packaging • Transportation</td>
<td></td>
</tr>
</tbody>
</table>

Fertilisers and pesticides used in banana cultivation are commonly imported from China. Seventeen Kachin-based companies officially import compound fertilisers under a variety of Chinese brand names, although domestic products have been widely used since 2019. Organic manures are also used, including produce of a Yunnan biotech company. Chemical input use includes paraquat, a herbicide that is already banned in 40 countries and known to affect human respiratory and nervous systems. A commonly used insecticide against banana weevil borers is carbofuran, a chemical toxic to humans and animals, particularly birds, and also banned in multiple countries. Chemical usage is intensive and has been linked to the pollution of water sources in the vicinity of plantations, and the impact it has on human and livestock health (see the Section on Impacts for further details).

The yield of banana plantations significantly varies between 25 and 50 metric tons per hectare (10.1 to 20.2 tons per acre). Permanent plantation labourers harvest the crop, after which temporary workers carry the heavy 20-30 kg bunches from the field to the packaging house. A careful packaging process takes place at the plantation site, requiring skilled labour, so that the transported crop conforms to market regulations and can easily enter supermarket chains in China. It is then loaded onto trucks for export.

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2 Paraquat remains legal in Myanmar, whereas carbofuran was banned in the country from January 2020.
5. Scale of production

Data on banana production in Myanmar are scarce. The Myanmar Statistical Information Service produces a national Statistical Yearbook. It carries extensive agricultural data, and details fruit and nut production for 18 varieties over four-year periods. Yet banana has been placed in the ‘other’ category rather than gaining its own specification (Central Statistical Organization, 2018, pp. 309–12; MMSIS, 2019). Within datasets of the Food and Agriculture Organisation of the United Nations, there is production information on banana from 1960 onwards for Cambodia, Lao PDR, Thailand and Vietnam, but nothing for Myanmar.

![Figure 2: Townships in Kachin State with tissue-culture banana production, including plantations in control areas of militia groups](image)

The core centre of tissue-culture banana production is in Waingmaw Township, where the crop is transported for export through Kanpaikt border gate. Other Townships known to have plantations are Myitkyina, Bhamo, Mansi and Monmauk, with Shwegu showing signs of production since 2019 (Khin Su Wai, 2018; Soe Min Htike, 2018). All of these Townships carry three advantages for production: they contain non-mountainous terrain; they are located in proximity to the Chinese border; and they have road networks to reach border gates (Figure 2). In December 2018, a study conducted by the Kachin State Department of Agriculture (DoA) identified plantations on more than 60,000 acres (24,300 ha) in Waingmaw Township and more than 100,000 acres (40,500 ha) in government-controlled areas of Kachin State (Chan Thar, 2018; Hein Ko Soe and Dunant, 2019). However, research by the Land Security and Environmental Conservation Networking Group (LSECNG), an alliance of 15 local and national NGOs, claims that more than 170,000 acres (68,800 ha) are being used (LSECNG, 2019). These figures also tally closely with unpublished records of the Kachin State Hluttaw (Parliament), which gave the figure of 169,425 acres in 2018.3 Using remote sensing satellite imagery, LSECNG identified 142,961 acres (57,854 ha) of banana plantation in Waingmaw Township alone (Figure 3). This represents 12 percent of the total land area in Waingmaw compared with 11 percent used for all other crops.

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Although it is the core area of production in Myanmar, Kachin is not the only State or Region cultivating tissue-culture banana. The Irrawaddy Publishing Group cites from government land records that there are significant tissue-culture production areas focused on the Chinese market in Ayeyarwady and Sagaing Regions, with new plantation areas emerging in Tanintharyi and Mandalay Regions, and Kayin State (Moe Moe, 2019). In interviews for this report, it also became clear that there are plantations along the Chinese border in Shan State, particularly close to crossing points. Once exported, the crop is transported to at least ten Provinces/Municipalities in China, reaching as far as the Russian border (Pwint Phyu Phyu Lwin, 2019).

According to UN Comtrade, in 2018 China was the third highest global importer of fresh or dried banana in terms of quantity (ITC, 2020), bringing in over 1.5 million tons or 7 percent of registered international imports. In that year, trade figures stated that 98.8 percent of Myanmar banana exports went to China, but undervalued the quantity at 120,000 tons (ITC, 2020). As a comparison, in a 2019 edition of the Myanmar Farmer Journal (Pwint Phyu Phyu Lwin, 2019), data were provided over the past nine years for exports through Kanpaikti border. Table 2 places these figures together with country-wide export data from MYANTRADE under the Ministry of Commerce. Looking at the Kanpaikti border figures, trade is seen to drop by half in 2011-12 after the ceasefire ended.

Figure 3: GIS mapping showing land use type (left) and banana plantation areas (right) in Waingmaw Township (source of map: LSECNG, 2019, p. 23)
During the following year, a bridge on the road to the border point was destroyed due to fighting between the Tatmadaw and KIA, hence the dramatically lower recorded quantity for 2012-13. Hostilities have died down in Waingmaw Township since then, and there has been a sharp upturn in trade each year since 2015. For the year 2017-18, where there are figures from both sources, Kanpaikti is seen as the principal point of export, accounting for 76 percent of total banana exports through all border gates. The export quantity has continued to rise up to 2020, with more than 700,000 tons now exported from Myanmar as a whole. These figures roughly correlate with claims of the Deputy Minister at the Ministry of Agriculture, Livestock and Irrigation (MoALI) for the 2018-19 fiscal year (Moe Moe, 2019), and also with the amount of banana arriving at Houqiao Port, Tengchong, from Myanmar during the first ten months of 2019 (Fresh Plaza, 2019). However, the estimated area of land used for plantations as mapped by LSECNG in their 2019 report for Kachin State alone (170,000 acres) and the lowest estimated yield of 10 tons an acre, suggests an output of 1.7 million tons. This exceeds the most recent national-level export data by more than 100 percent. Such a gap brings into question the credibility of the border trade data, either in the process through which it is collected, or in the fact that much exported banana is avoiding formal registration. In the latter case, if the real export volumes are higher than those reported, a significant amount of banana is avoiding taxes, and the government is missing out on a sizeable income from its trade.

Table 2: Myanmar tissue banana exports through Kanpaikti border crossing and for the whole country (Sources: MYANTRADE; Nyein Nyein, 2020; Pwint Phyu Phyu Lwin, 2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Kanpaikti Border Gate</th>
<th>All Myanmar Border Gates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Export Quantity (tons)</td>
<td>Export value (million USD)</td>
</tr>
<tr>
<td>2010-11</td>
<td>51,400</td>
<td>5.84</td>
</tr>
<tr>
<td>2011-12</td>
<td>25,880</td>
<td>3.146</td>
</tr>
<tr>
<td>2012-13</td>
<td>5,129</td>
<td>0.840</td>
</tr>
<tr>
<td>2013-14</td>
<td>26,405</td>
<td>4.048</td>
</tr>
<tr>
<td>2014-15</td>
<td>33,770</td>
<td>4.982</td>
</tr>
<tr>
<td>2015-16</td>
<td>81,340</td>
<td>25.729</td>
</tr>
<tr>
<td>2016-17</td>
<td>176,570</td>
<td>55.226</td>
</tr>
<tr>
<td>2017-18</td>
<td>266,450</td>
<td>78.858</td>
</tr>
<tr>
<td>2018-19</td>
<td></td>
<td>670.632</td>
</tr>
<tr>
<td>2019-20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The rise in the amount of banana exported is closely matched by a rise in price per ton, with two significant increases in 2015-16 (to over 300 USD per ton) and 2018-19 (to nearly 400 USD per ton). Price rises are linked to other factors that have contributed to the increase in production in Kachin State:
Chinese Investment into Tissue-Culture Banana Plantations in Kachin State, Myanmar

- Rising consumer demand in China, where the desire for fresh fruit has tended to increase with economic growth (Eurofresh, 2015).

- Land for banana production is scarce in China, with only limited areas lending optimal growing conditions. This contrasts with high land availability in Kachin State, with fertile soils, favourable climatic conditions, and the possibility for year-round production.

- Following the breakdown of the ceasefire in Kachin State, a perennial crop such as banana represents a safer investment compared with rubber, which takes six years to harvest after planting. Rubber lost further interest as a crop for investment due to a significant decrease in prices on the world market in 2008.

- The legacy of trade relations means that Chinese investors can access a strong agribusiness network to obtain land and workers (see the following sections). The proximity of Kachin State to Yunnan Province reduces transport costs.

- Following limitations on new investments in Lao PDR, investors switched their attention to Myanmar. The extent to which increased production is dependent upon this factor is unclear.

In early 2020, the first cases of COVID-19 were reported in Wuhan Province, China. The pandemic spread worldwide and was first detected in Myanmar on 23 March. There is some evidence of bananas being dumped due to delays at the border. However, on the whole, exports have continued (Fresh Plaza, 2020; Jangma, 2020), with the Yunnan government taking an active role to maintain trade in the crop (National Port Administration Office, 2020). In response to the COVID-19 pandemic, the government has extended a nationwide exemption of the 2 percent withholding tax (see Section 7 below) until December 2020.

On 26 April, a Pandemic Prevention and Protection Committee for the KIO published an official statement that, due to the pandemic, the transportation of banana within their areas of control was not permitted. However, a representative of the KIO confirmed that trade in the crop continues.
6. **Cost-benefit analysis**

Research for this report included a cost-benefit assessment of tissue-culture banana production in Kachin State. Data were collected from five companies, with one company selected as the most representative example in terms of plant density, labour use, inputs and productivity (Table 3). This company currently owns 2,300 acres (930 ha) of land over five sites, of which 1,550 acres (627 ha) have been planted with banana. Productivity is 17.6 tons/acre (43.5 tons/hectare). The analysis is calculated in terms of Myanmar Kyat (MMK) for one acre of land use, and converted to USD for one hectare. Table 3 presents a breakdown of costs in terms of labour, inputs, transportation, and tax/duty, comparing the mother plantation with a ratoon season of production. It must be recognised that profitability will vary depending on factors such as the type of land (topography, level of soil fertility), the density of saplings planted, and the changing market prices of both inputs and output. However, the analysis offers a useful marker for both domestic and Chinese investors as to the economic attraction of growing banana in Kachin State.

<table>
<thead>
<tr>
<th>Production component</th>
<th>Detail</th>
<th>Mother plantation</th>
<th>Ratoon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MMK for one acre</td>
<td>USD for one hectare</td>
</tr>
<tr>
<td>Land Rental</td>
<td></td>
<td>300,000</td>
<td>549</td>
</tr>
<tr>
<td>Labour</td>
<td></td>
<td>2,320,000</td>
<td>4,247</td>
</tr>
<tr>
<td>Plantation labourers</td>
<td></td>
<td>2,104,000</td>
<td>3,851</td>
</tr>
<tr>
<td>Technician</td>
<td></td>
<td>120,000</td>
<td>220</td>
</tr>
<tr>
<td>Translator</td>
<td></td>
<td>48,000</td>
<td>88</td>
</tr>
<tr>
<td>Machine operator</td>
<td></td>
<td>48,000</td>
<td>88</td>
</tr>
<tr>
<td>Inputs</td>
<td></td>
<td>3,162,000</td>
<td>5,788</td>
</tr>
<tr>
<td>Saplings</td>
<td></td>
<td>495,000</td>
<td>906</td>
</tr>
<tr>
<td>Drip irrigation</td>
<td></td>
<td>500,000</td>
<td>915</td>
</tr>
<tr>
<td>Fertiliser</td>
<td></td>
<td>760,000</td>
<td>1,391</td>
</tr>
<tr>
<td>Pesticides</td>
<td></td>
<td>97,000</td>
<td>178</td>
</tr>
<tr>
<td>Fuel</td>
<td></td>
<td>120,000</td>
<td>220</td>
</tr>
<tr>
<td>Propping, bagging and other materials for plant protection</td>
<td>350,000</td>
<td>641</td>
<td>350,000</td>
</tr>
<tr>
<td>Packaging materials</td>
<td></td>
<td>840,000</td>
<td>1,538</td>
</tr>
<tr>
<td>Total cost of production</td>
<td>5,782,000</td>
<td>10,583</td>
<td>4,387,000</td>
</tr>
<tr>
<td>Transportation</td>
<td>From Myitkyina to Tengchong, 0.70 truck (at 25 tons per hired truck)</td>
<td>2,000,000</td>
<td>3,661</td>
</tr>
<tr>
<td>Tax and Duty</td>
<td></td>
<td>383,240</td>
<td>701</td>
</tr>
<tr>
<td>Total cost</td>
<td></td>
<td>8,165,240</td>
<td>14,946</td>
</tr>
<tr>
<td>Gross income</td>
<td>17.6 tons per acre at 3 CNY/kg in Tengchong</td>
<td>10,560,000</td>
<td>19,329</td>
</tr>
<tr>
<td>Net profit</td>
<td></td>
<td>2,394,760</td>
<td>4,383</td>
</tr>
</tbody>
</table>
In this analysis, the price of banana was 3 CNY/kg (444 USD/ton), which represents the market price in Tengchong. Banana produced in Kachin State is generally considered to be second grade quality, for example compared with high-level produce from the Philippines or Ecuador. This is reflected in the market price. While top quality bananas can fetch up to 7 CNY/kg (1,036 USD/ton - a price-high reached just before the onset of the COVID-19 pandemic), bananas from Kachin State commanded a relative price of around 4 CNY/kg (592 USD/ton), which fell to under 3 CNY/kg after the outbreak started. There is also a seasonal effect on price due to a higher demand from October to June. In interviews for this report, respondents suggested that improvements in post-harvesting activities could maintain a higher quality of banana and command a higher price.

The demands of setting up a plantation are reflected in the higher costs for the mother plantation season, both for labour and inputs. While labour generally constitutes 25.5-27.5 percent of production costs during the first season of the plantation, 13 percent of costs go towards intensified work activities to clear and prepare the land for banana cultivation. Together with the costs of initial inputs such as saplings and a drip irrigation system, this somewhat reduces the potential profit in the first year of production compared with subsequent ratoons. However, Table 3 shows that a significant profit is still achieved in the mother season, highlighting the potential for immediate returns from banana compared with crops that take longer to mature. Overall, the analysis shows banana to be highly profitable at 4,383 USD/ha in the mother season and 5,648 USD/ha for ratoons. By way of comparison, another well-established commercial crop in Myanmar is maize, which in Southern Shan State generates profits of just 303 USD/ha (Fang and Belton, 2020), while profits of up to 355 USD/ha are gained from paddy rice in the highest value Ayeyarwaddy and Yangon Regions (Cho et al., 2017). A comparable example of a rapid-return, cross-border boom crop involving Chinese investors is watermelon, with estimated exports to China worth 169 million USD in 2016. However, production costs are high and prices are volatile for watermelon, with profits reaching a maximum of about 1.7 million MMK/acre (3,110 USD/ha) in a good season, and losses in a bad season, according to 2015 data (Kobu, 2018). In sum, banana is clearly far in advance of other crops in terms of profitability, although not all investors succeed in achieving such high returns. Many small-scale investors take out loans (predominantly through other investors or their own family) to set up plantations, and so will have annual payments to temper initial profits. Indeed, small-scale investors have been known to walk away from plantations to minimise losses if the whole project proves economically infeasible or is otherwise under threat. Nevertheless, the potential net return over a short period of time explains the rapid expansion of banana and the related rush to acquire land.
7. Tax structure for banana exports

When leaving Myanmar, the banana crop is subjected to a 2 percent withholding (income) tax together with other fees, such as customs, immigration, labour, plant protection and road use (see table 4 below). This is based on its estimated weight per truck. In the case of Kanpaikti and Lwegel border gates, a 22-wheel truck is calculated to be carrying about 25 tons, in which case the official tax and duty per truck comes to 572,000 MMK (424 USD). Of this, 300,000 MMK (222 USD) covers the withholding tax (based on a price of 3 CNY/kg). This is collected on behalf of the Internal Revenue Department under the Ministry of Planning, Finance and Industry at Union level. If the exporter were to possess an official MIC (Myanmar Investment Commission) permit or endorsement, they would automatically acquire a seven-year exemption to this rule. Yet with only three ventures receiving such an endorsement, nearly all banana is subject to this tax. The other fees collected at the border gate on the Myanmar side total 272,000 MMK (201 USD), which is a low rate in comparison with the profitability of the crop and the environmental costs. Table 4 provides a breakdown of the taxes and duties per truck as identified in interviews for this report.

Table 4. Taxes and duties collected per truck entering Myanmar and exporting a full load of banana

<table>
<thead>
<tr>
<th>#</th>
<th>Tax and other fees</th>
<th>Collected by</th>
<th>Location</th>
<th>Amount (MMK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fees for entering from the border gate</td>
<td>Finance and Revenue Department</td>
<td>Myitkyina</td>
<td>60,000</td>
</tr>
<tr>
<td>2</td>
<td>Safe business licence fees</td>
<td>Township City Development Office</td>
<td>Waingmaw</td>
<td>80,000</td>
</tr>
<tr>
<td>3</td>
<td>Withholding Tax (2%)</td>
<td>Customs Department</td>
<td>Kanpaikti</td>
<td>300,000</td>
</tr>
<tr>
<td>4</td>
<td>Packing paper and tissue paper (import duty)</td>
<td>Customs Department</td>
<td>Kanpaikti</td>
<td>30,000</td>
</tr>
<tr>
<td>5</td>
<td>Stay in Myanmar territory (driver and truck)</td>
<td>Immigration Department</td>
<td>Kanpaikti</td>
<td>18,000</td>
</tr>
<tr>
<td>6</td>
<td>Border trade fees</td>
<td>Department of Consumer Affairs</td>
<td>Kanpaikti</td>
<td>2000</td>
</tr>
<tr>
<td>7</td>
<td>Labour fees</td>
<td>Labour Department</td>
<td>Kanpaikti</td>
<td>2000</td>
</tr>
<tr>
<td>8</td>
<td>Plant protection fees</td>
<td>Plant Protection Department</td>
<td>Kanpaikti</td>
<td>5,000</td>
</tr>
<tr>
<td>9</td>
<td>Municipal fees</td>
<td>Township City Development Office</td>
<td>Kanpaikti</td>
<td>5,000</td>
</tr>
<tr>
<td>10</td>
<td>Road use fees</td>
<td>Road Transport Administration Department</td>
<td>Kanpaikti</td>
<td>8,000</td>
</tr>
<tr>
<td>11</td>
<td>Donation</td>
<td>Transport Service Association</td>
<td>Waingmaw</td>
<td>2,000</td>
</tr>
<tr>
<td>12</td>
<td>Wheel tax</td>
<td>Regional Development Fund</td>
<td>Waingmaw</td>
<td>3,000</td>
</tr>
<tr>
<td>13</td>
<td>Office processing for Export Declaration</td>
<td>Customs Department</td>
<td>Kanpaikti</td>
<td>16,000</td>
</tr>
<tr>
<td>14</td>
<td>Office processing for Import Declaration</td>
<td>Customs Department</td>
<td>Kanpaikti</td>
<td>21,000</td>
</tr>
<tr>
<td>15</td>
<td>Bank</td>
<td>Myanmar Economic Bank</td>
<td>Myitkyina</td>
<td>10,000</td>
</tr>
<tr>
<td>16</td>
<td>Internal Revenue</td>
<td>Internal Revenue Department</td>
<td>Myitkyina</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>572,000</strong></td>
</tr>
</tbody>
</table>
Overall, following export data in Table 2, in the fiscal year 2019-20 the withholding tax brings in an estimated income of 6.52 million USD (2 percent of 733,500 tons at 3 Yuan/kg) for the government. Data are available for tax collected at Kanpak蒂 border gate in the fiscal years 2016-17 and 2017-18, which conforms with the corresponding values of banana export. Records of the Kachin State Hluttaw provide a further source of unpublished data, which, although differing from the above estimate, are nevertheless instructive. The records show a significant increase in withholding tax relating to banana from the fiscal year 2013-14 (23 million MMK or 17,037 USD) to fiscal year 2017-18, when it reached 2.27 billion MMK (1.68 million USD). In April-September 2018, this had already reached 1.95 billion MMK (1.44 million USD). Although still much less than the above estimate, these figures demonstrate both the rapid increase in tax receipts and the likely large gap in official records compared with actual trade value. There is thus a clear incentive for the government to maintain trade. However, based on the LSECGN mapping of land use for plantations, and the potentially higher level of output than is represented in official figures, there is a chance that the full amount and value of produce is not being registered: the government is, therefore, missing out on a significant level of taxation from exports. Additional information on the range of formal and informal charges on banana transportation was provided by agriculture officials in Kachin State, including fees for borderguards, militia groups, and multiple road checkpoints adding up to 300,000 MMK per truck. Development Affairs Office (DAO) fees are also paid at State and Municipal levels, amounting to 80,000 MMK and 50,000 MMK per truck, respectively. This further highlights the diverse range of actors receiving payments in the process of shipping banana, while formal tax receipts are significantly below trade volumes.

The ASEAN-China Free Trade Area (ACFTA) was operationalised in 2010, and the customs tariff on banana has been eliminated (reduced to 0 percent) (TransCustoms, 2020). There is also a VAT for both imports and domestic goods in China. For agricultural goods this has been set at 9 percent since 2018. However, the trade in banana from Myanmar to China has not been formalised. The crop is not listed for inspection and quarantine (General Administration of Customs of the People’s Republic of China, 2019), although discussions have been taking place to introduce the necessary procedures (Htoo Thant, 2019). As a result, a border residents trade agreement is being utilised on the Chinese side of the border, where those living close by can freely trade products across the border to a value of 8,000 CNY (1,100 USD) per day (Tengchong Government Office, 2017; Wen, 2017). This represents roughly four tons of banana exempted from any customs levies per person on a daily basis. As a result, there is a highly organised process to recruit and pay border residents, using their quota for the commercial import of products. In 2016, 66,000 residents were involved.

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4 Meeting records of 2nd Kachin State Parliament Special Meeting (1/2018) 28-30 November 2018. No official figure was available from the Internal Revenue Department to verify this.
8. Investor profiles

Chinese investors entering into banana production in Myanmar can be placed into two groups, namely larger agribusiness companies, and individual or family-based investors. Of the first group, agribusiness companies cultivate and/or organise large areas of land. The limited influence of the Opium Substitution Programme can be seen here. In 2019, 35 Yunnan companies operated under the whole programme, but only two of these included banana among their various activities, both operating in Kachin State (SWJ, 2018):

1. Yunnan Yuanyuan Trading Company
   - Registered capital – 3 million USD
   - Requested annual imports to China – 20,000 tons of banana and 500 tons of rubber

2. Yunnan Kyushu Jinke Investment Company
   - Registered capital – 10 million USD
   - Requested annual imports to China – 5,000 tons of banana, 300 tons of rice, and 500 tons of rubber

Outside the Opium Substitution Programme, a set of 13 companies have accessed land for banana plantations as members of Tengchong International Chamber of Commerce (TICC), operating through Kanpaikti border gate into Waingmaw Township. Based on data collected by TICC in 2018 and a conversation with Yunnan Jinxin Agricultural Company, these companies control up to 50,000 acres (21,840 ha) of land used for banana plantations. Although falling short of the 170,000 acres of plantations mapped out by LSECNG in Waingmaw Township, this nevertheless demonstrates a significant amount of land under the control of larger companies. The company with the highest use of land is Yunnan Jinxin Agricultural Company (see Box 1). Large tracts of land may be set up for multiple activities through contracts with Myanmar companies over an extended period of time, thereby ensuring long-term access. Having operated in the State for a number of years, many of these companies are likely to have established business connections, potentially including State government figures and military/militia networks (see the next Section). Certainly, in setting up plantations of a larger size, it is in their interests to acquire a letter from a local or State-level official as verification of their investment.

Box 1: Yunnan Jinxin Agricultural Company

Yunnan Jinxin Agricultural Company is a conglomerate involved throughout the value chains of various crops, including inputs, production, transportation, processing and sales. The company has operated in Myanmar since 1991, a date that coincides with the release of the ‘Wasteland Instructions’ that instigated large-scale agricultural development in Myanmar. The firm was an early participant in the Opium Substitution Programme. The company claims to have control of more than 16,475 acres (6,667 ha) for banana plantations (Fresh Plaza, 2020). However, they have signed a contract with the Myanmar Changyingou Development Company allowing access to 49,420 acres or 20,000 ha (Wen, 2017). As well as banana, the company cultivates rubber, rice, corn and sugar cane. It has more than 700 trained workers in six agricultural bases in northern Myanmar (Liu and Li, 2018). Jinxin has also linked up with Hainan Agricultural Development Company to trade various inputs for banana production (Lin, 2019).

5 For a list of these companies, see Appendix 2.
Entering through Lwegel border gate in the south of Kachin State gives access to land in Bhamo, Mansi, Monmauk and Shwegu Townships. Although it is possible that TICC-affiliated companies operate here, the location is better suited to Chinese companies outside the administrative jurisdiction of Tengchong City, based in Longchuan County next to the border gate or nearby Ruili City. Most prominent here is Yunnan Ruili Xiangma Ltd., who claim to access 39,540 acres (16,000 ha) for agricultural activities in Bhamo Township, of which 6,590 acres (2,670 ha) is dedicated to banana (Yunnan Ruili Xiangma, 2020). As is the case with the use of border residents to help in importing banana into China, the corporate sector is highly organised. There is a strong support mechanism to provide chemical inputs and saplings for plantations, and the Chinese government has exempted tariffs on exporting fertiliser since 2018 (Lin, 2019). On June 15-16 2019, the ‘Fourth Southeast Asia (Tengchong) Banana Industry Value Chain Brands Gathering: Summit of Agricultural Investment in Myanmar and Lao PDR’ was held in Tengchong, bringing together more than 500 individual investors, companies, and other stakeholders involved in the production process. Panels and exhibitions looked at how to improve value chains, and technological and chemical usage systems in banana production.

The second group of Chinese investors involves family-based units or lone entrepreneurs, who come from all over China to set up and manage individual plantations. They represent newer entrants to the banana business in Kachin State, and commonly operate on less than 1,000 acres (405 ha). Some lease land from agribusiness companies. For example, Yunnan Jinxin Agricultural Company and Tengchong Hongda Trading Company have respectively 80 and 75 sub-contractors, most operating banana plantations. The companies can help with transportation and inputs. Small investors also seek out Myanmar-based intermediaries to provide them with land. These include local ethnic Chinese families who have lived in Kachin State for multiple generations, and Kachin elite business networks. As an example of the first category, the Myanmar publication Frontier highlights the conglomerate Ruby Dragon Group, which emerged after the 1991 ceasefire in Southern Shan State (Hein Ko Soe and Dunant, 2019). For this report, a list was made of 35 local companies involved in tissue-culture banana, with one further company operating in a KIO-controlled area. For example, Chang Yin Hku has already planted around 3,500 acres (1,416 ha) in Waingmaw Township with banana, and applied to access a further 10,000 acres (4,047 ha) of VFV land.

Small investors often cross the border on tourist visas to set up and run a plantation, even though an extended stay of many months, working on a commercial plantation, contravenes the conditions of their stay. They may seek out a broker after crossing the border, aided by advertising boards and information through local restaurants and shops. On the whole, business relationships here are not formally registered at State or Union level, but are maintained through mutual benefits, where the broker arranges land, while the investor controls the flow of capital, inputs and output.

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6 For a list of these companies, see Appendix 3.
9. Investment registration and regulation

Until recently, there were no specifications to supervise the rise of the crop in Kachin State. For example, the Agricultural Development Strategy and Investment Plan, the latest version of which covers the period 2018/9 to 2022/3, contains no specific references to banana (MoALI, 2018). Instead, the majority of plantations in Kachin State are not formally registered in terms of their operation by foreign investors. Therefore, legal provisions for banana are playing catch-up with production realities on the ground, although the Kachin State government is in the process of drawing up a Standard Operating Procedure (see Section 15 on Responses). This is despite the fact that Myanmar has actively courted both domestic and foreign investment since 2011, liberalising policy and promoting both multilateral and bilateral relations (Grimsditch, 2017, p. 58). In order to operate in Myanmar, foreign investors need a State-sanctioned permit. This is granted in accordance with the Investment Law (2016)7 and its accompanying Investment Rules (2017). Permits are required for projects involving more than 1,000 acres (405 hectares) with a capital outlay of over 5 million USD and covering a lease of land for at least five years. Applications are handled by the Myanmar Investment Commission (MIC) at Union level. Most individual banana plantations are less than 1,000 acres, although an agribusiness company may have control over a larger tract of land. For the smaller investments, a simpler ‘approval order’ or endorsement allows for a long-term land lease authorisation or a tax exemption. For an endorsement, an application is made to the Directorate of Investment and Company Administration (DICA) at State or Regional level, and a formal approval must be given within 30 days. A foreign investor also has to apply for a Land Rights Authorisation (LRA) and a permit to lease a specified land type. The Investment Law allows for 50-year leases with the possibility to extend for two further ten-year periods.

Since commencing operations in July 2017, the DICA office in Kachin State has approved three applications for banana plantation under the new Investment Law:

- Kachin Star Group and Chinese investors set up a joint venture under the name Kachin Tian Hu Company Ltd. Endorsement was given on 29 March 2019 for 188.7 acres (76 hectares) in Waingmaw Township. It includes authorisation to import saplings, with the company transporting them by air from Brazil.

- Sin Kyaing Company Ltd received an endorsement to cultivate banana in Myitkyina Township in a wholly Myanmar-owned venture. Permission was given on 7 July 2020. No details on the land size were available at the time of the research.

- Htein Min Company also received an endorsement in July 2020, although no further details were available at the time of the research.

7 The new Investment Law combines the Foreign Investment Law of 2012 and the Citizens Investment Law of 2013, and represents an attempt to align domestic and foreign investment following international standards (San Thein et al., 2018, p. 22). Implementation is carried out through the Myanmar Investment Commission (MIC) and the Directorate of Investment and Company Administration (DICA).
Chinese Investment into Tissue-Culture Banana Plantations in Kachin State, Myanmar

**10. The acquisition of land**

Investors can access various categories of land, including Vacant, Fallow and Virgin (VFV) land, farmland under a usage certificate (Form 7), land under community forestry programmes, State forestland, and land under the control of Ethnic Armed Organisations (EAOs). However, it must be acknowledged that despite this framework, joint ventures for banana are not formally registered, and Chinese investors are not applying for investment permits/endorsements, Land Rights Authorisations (LRAs), or permits to operate on specified types of land. In this sense, the majority of plantations operate illegally according to investment laws.

The **Vacant, Fallow and Virgin Lands Management (VFV) Law** (2012, amended in 2018) states that land classed as vacant, fallow or virgin can be leased to citizens, companies, government entities, and NGOs for purposes such as agriculture or mining. The controversy lies in the fact that much of identified VFV land may belong to smallholders or other community users, farmed under informal or customary tenure systems that are not documented or legally recognised. Moreover, 82 percent of VFV land is situated in ethnic nationality States. As of October 2016, a total of 9.4 million acres (3.8 million hectares) in Kachin State had been designated VFV land. This is 42.8 percent of the State’s total land area, the highest proportion for any State or Region in Myanmar (San Thein et al., 2018, p. 28). On 11 September 2018, an amended VFV Law was enacted, whereby those without land use permits after 11 March 2019 could be treated as criminals and served with eviction notices (Dunant, 2018). There is an exemption for customary land, but there is no framework to clarify what qualifies in this category. The law could be used to punish unregistered plantations, but it has been suggested that the authorities will use it to legalise existing plantations, bringing them under regulatory control (Hein Ko Soe and Dunant, 2019). The revision calls for VFV land not in productive use to be taken back by the government, incentivising military and elite figures who have acquired land to ensure it is formally registered and put into use.

The **Farmland Law** (2012, amended in 2020) offers land-use certificates to farmers through the application of Form 7 (San Thein et al., 2018, p. 6; Woods, 2014). Article 50b of the Investment Law states that foreign investors can lease land from owners of private land if they have received a permit or endorsement from DICA. If the transaction is formally registered, tax will be paid on it between the broker and the owner of a Land Use Certificate (LUC). The law is primarily focused on farming in lowland and permanently cultivated areas (Boutry et al., 2018, 2017; Faxon and Spectrum SDKN, 2015). It is generally not applied in upland and remote areas of Kachin State, and where rotational agroforestry and shifting cultivation are practised. The law also does not apply to areas placed under forestry management regimes even if the forest has long since disappeared. Similar to the VFV Law, a new amendment from 2020 potentially criminalises anyone cultivating land without the necessary certificate, and there is no exemption for areas under customary tenure. The ruling in theory should apply to unregistered plantations.

Banana plantations have proven contentious through encroachment on forest and protected areas (Moe Myint, 2017). According to the **Forest Law** (1992), permission to do so should be sought from the Forest Department, but this has not always been the case. For instance, a 2017 news story claimed that some villagers in Myitkyina Township were fencing off plots within protected forestland adjacent to their village area, in order to sell or rent to banana investors, with officials claiming to represent the Forest Department asking 250,000 MMK as an (informal) fee for each deal (Eleven Myanmar, 2017). In May 2019, Kachin State Forestry Department filed charges against five Chinese investors for accessing forest land without the necessary certificate.
investors and their company manager for expanding plantations in Waingmaw Township into protected forests (Jangma and Thant Zin Oo, 2019). Further arrests of Chinese nationals were made that month linked to encroachment in Nantwah and Washuang forest reserves. This follows the Forestry Department suing two other companies in 2018 for planting banana trees on plots totalling 900 acres (364 ha) within a forest reserve area, having also illegally logged the area. There are no clear figures showing how much forestland has been converted into banana plantations. Through conversations with the Kachin Conservation Working Group (KCWG), it was claimed that in 2019 Myitkyina Forestry Department estimated that there were 6,000 acres (2,428 ha) of plantations in the protected and reserved forest areas of Myitkyina and Waingmaw Townships. According to local observers, this figure is likely to be substantially underestimated.

Generally, the closer the land is to municipal centres, such as Myitkyina or Waingmaw Towns, or to primary roads, the more likely it is to carry a formal status. The further away from such points, into upland areas, the more likely it is to be held under customary tenure, while also designated as VFV land by Union or Regional government. Land may be acquired via leasehold or sale, at times without the permission of the land owner/user. For sales, brokers may purchase land-use certificates (LUC/Form 7), and then lease that land to Chinese investors. On the whole, this is not the ideal arrangement, given that intensive chemical use on plantations may degrade the soil within five years, so diminishing productivity. It seems that for brokers, outright purchases are not the preferred method of acquisition.

Chinese investors cannot officially rent land unless they are part of a joint venture with a formal land rights authorisation. Instead, Myanmar brokers will organise the leasehold, although many small-scale investors sub-lease from Chinese agribusiness companies. Brokers can accumulate land in advance, or seek an acquisition directly following an enquiry from the investor, by approaching religious or other community leaders, local authorities, village chiefs, military figures or villagers themselves. For many local farmers and land users, the offer of a lump sum of money is attractive. For example, according to a Frontier magazine report, one third of the 80 households in Aung Myay One and Aung Myay Two Villages, Waingmaw Township, signed up to rent out land with encouragement from a Baptist church leader (Fishbein, 2019). In this case the annual rental figure stood at 200,000 kyat per acre (366 USD per hectare) for a three-year contract. However,
after a year nothing had been paid to the community. Annual rental fees range from 100,000 to 700,000 kyat per acre (183-1,281 USD per hectare), depending on the gradient of the land, its fertility, and transport access. Contracts vary between formal and informal unwritten agreements, lasting between two and five years. In 2019, LSECNG conducted 50 interviews in six villages of Waingmaw Township (LSECNG, 2019), and 39 percent of respondents claimed that they had experienced a mixture of coercion and threats in providing land for banana plantations. These included the pressure of surrounding fields already being leased, or misleading information such as promises of receiving Form 7. Perhaps one of the groups most vulnerable to pressurisation is that of Internally Displaced Persons (IDPs). There are nearly 100,000 displaced people in Kachin State (OCHA, 2019). Chinese investors and their representatives travel to refugee camps and make contact with IDPs about renting their land. They argue that the refugees can benefit financially from the transaction, and that the establishment of a plantation means their land will not be grabbed by other forces (Chan Thar, 2018; Hein Ko Soe and Dunant, 2019; Htun Khaing, 2018).

Much land acquired for banana plantations bypasses consultation with local farmers (Box 2). Contracts are made with village authorities, businessmen and other local elites, after which land users, including IDPs, find themselves evicted. In the 2019 LSECNG survey, 20 percent of respondents whose land was used for banana plantations claimed that it had been grabbed without their permission. The land might be held under communal arrangements or within areas used for shifting cultivation practices.

Much land has also been acquired by military and EAO officials despite the claims of other users, and subsequently offered to banana investors, creating resentment among the local population (Buchanan et al., 2013, pp. 17–21).

The Irrawaddy Publishing Group (Moe Myint, 2017) received documents from the Department of Agriculture Land Management and Statistics (DALMS) showing that between 2013 and 2014, 170,000 acres (68,800 ha) of VFV land in Waingmaw Township (13.7 percent of the whole Township area) was handed over to various companies and individuals. They included a former State chief minister, senior KIA officials and the National Democratic Army of Kachin (NDA-K).

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**Box 2: Wu Yang Village in Waingmaw Township, Kachin State**

Located around 24km from the State capital of Myitkyina, Wu Yang Village consists of around 240 households. Residents are primarily of Kachin ethnicity but the village also contains Chinese, Burmese and Shan inhabitants. It is claimed that, in 1997, a piece of land estimated to be 1,500 acres (607 ha) in size was seized from residents by local elites, including a high-ranking KIA officer. It was first used as a sugar plantation, before a later conversion to banana cultivation. This is run as a joint venture with the Chinese company U Nyun Aung. In protest, local residents sent letters to both the Kachin State Chief Minister and KIO. The latter organisation requested compensation from the Chinese company, to which there has been no response, although a small section of the land has since been returned to the community. As a further issue from the banana plantation, residents have suffered from downstream water pollution, water shortages for irrigation, and the death of livestock who have been affected by chemical use in the banana production process. The case highlights the precariousness of land ownership in the State, with such grabs impeding residents’ efforts to acquire Form 7 land-use certificates. The fact that they had to lobby more than one authority demonstrates the fragility of their position and the complexity of political control.

Note: this case study refers to Faxon, H. & Spectrum SDKN, 2015, pp. 11-13.
Using details provided in this and the previous Section, Table 5 sums up the various means through which land may be acquired for banana plantations, and their legality. Figure 4 shows the relationships between different actors that enable Chinese investors to acquire land and set up a banana plantation. Smaller Chinese investors can either lease land from larger agribusiness companies or approach Kachin-based middlemen to source it for them. Agribusiness companies, on the other hand, have a larger network of Kachin intermediaries that may include political and military figures. They might have agreements with such actors to provide large tracts of land over a long period of time, and have the option to formalise a plantation through registration in a joint venture. The various intermediaries frequently interact in seeking out land. They are also able to allocate land directly, whether formally through the appropriation of VFV land, or informally by, for instance, taking land left empty by IDPs.10 Finally, at the local level, village leaders are frequently consulted and directly find land for investors, which could be under their own jurisdiction or that of other community members. This means the smallholders themselves may be left out of the process altogether, and are only occasionally approached by middlemen.

10 For further discussion about the legality of acquisitions relating to IDPs’ lands of origin, see KBC, Metta Development Foundation et al 2018.
Table 5: Means of land acquisition for banana plantations and their legality

<table>
<thead>
<tr>
<th>Mode of land acquisition</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtaining a VFV concession through the Department of Agriculture Land Management and Statistics (DALMS)</td>
<td>Legal, but with a risk of encroachment on customary land and land belonging to IDPs</td>
</tr>
<tr>
<td>Leasing registered farmland through land brokers</td>
<td>Legal, but sometimes obtained through coercion</td>
</tr>
<tr>
<td>Buying or leasing unregistered farmland through land brokers, sometimes in community forest areas</td>
<td>A mix of legal and illegal</td>
</tr>
<tr>
<td>Obtaining a land concession in a military- or militia-controlled area</td>
<td>Outside of any legal provisions, but often found on customary land belonging to IDPs and in forest areas</td>
</tr>
<tr>
<td>Occupation of forest and/or protected land through the support of local leaders</td>
<td>Illegal, and unlikely to gain permission of Forest Department</td>
</tr>
</tbody>
</table>

11. Labour conditions

Plantation labour largely consists of landless local villagers and internal migrants from other States and Regions of Myanmar (Hein Ko Soe and Dunant, 2019; Htun Khaing, 2018; Moe Myint, 2017; Travers and Falcone, 2020). An estimated 70-80,000 migrants work in banana plantations (HI, 2019), representing more than 90 percent of the labour force, mainly travelling from outside of Kachin State. Most migrant workers hear about plantation jobs through their networks of friends, family or other acquaintances (Travers and Falcone, 2020). They are recruited through Chinese plantation managers, Burmese labour brokers (taking a possible 10 percent cut of their wage), or by other contracted plantation workers. Some receive an official written contract, while others work without any formalised deal. The wages on offer act as a catalyst to migrate, as they are higher than those available at home, where there might be a dearth of other employment opportunities while farming fails to provide an adequate livelihood. Migrants usually travel for employment as a couple or accompanied by children. The main workforce of a plantation typically comprises a combination of contract workers, daily wage workers, and the more experienced heads of daily workers. Companies allocate an average of about 3,000 banana trees to an individual contract worker, who will stay at the site for the entire season. Since many contract workers work as couple or family, 5,000-15,000 banana trees may be assigned to their care, covering 7-15 acres depending on the size of family group. A common arrangement is for contract workers to receive a share of the profits from the investor after the harvest, with an advance of 80,000-100,000 MMK (59-74 USD) per month for living expenses, which is recouped from their share of the profits. Although payments vary based on the number of members, according to interviews, typical payments for a family group of contract workers may be up to 7 million MMK (5,185 USD), given as a lump sum at the end of the season.

During peak labour tasks such as harvesting, contract workers recruit daily wage workers to keep up with production requirements, and some also recruit two or three such daily workers year-round as extra support. These workers are not paid by the plantation owners but by contract workers themselves, often using another advance payment from the investor. Many daily workers move between different banana plantations, with year-round employment possible based on the variable timing of production cycles, and typically work an eight-hour day (as opposed to contractors, who are incentivised to work longer hours to reduce the need to sub-hire daily workers). They are paid around 6,000 MMK (4.4 USD) per day and are brought in for particular intensive tasks such as carrying banana bunches from the field, and then boxes of bananas to trucks. Skilled labour for tasks in post-harvesting such as weighing,
grading and packaging, command a higher rate of over 10,000 MMK (7.4 USD) per day. Daily workers may also travel at different points in the year to fulfil labour needs at home, such as harvesting rice, although plantations make fewer provisions for them, and they often live in poorly made dormitories and shelters. Not all plantations have a head of daily workers, but where they exist this is a salaried position to manage the daily workforce, address problems such as illness and lack of food (later recouped from workers’ wages), and resolve disputes with contractors. For this they receive 300,000-400,000 MMK (222-296 USD) per month. A translator receives a higher rate of approximately 400,000 MMK (296 USD) per month (Travers and Falcone, 2020, p. 63).

Numerous concerns have been raised over living and working conditions at banana plantations, which contravene a number of labour laws in Myanmar (HI, 2019; LSECNG, 2019; Travers and Falcone, 2020). The main legal articles are provided in Table 6. When recruiting new workers, managers frequently do not disclose a full description of the required tasks. Many workers do not receive a written contract. Even when this is provided, it may lack details about the working hours, a specified wage, the number of days off and conditions for overtime. For long-term workers, monthly allowances are below the national minimum wage, as stipulated by the Minimum Wage Law (2013) and presently set at 4,800 MMK (3.56 USD) per day (Travers and Falcone, 2020, p. 67). The allowance is barely enough for basic subsistence, and the workers are effectively forced to remain onsite at the plantation, since any absence risks forfeit of their salary at harvest time (Box 3). In interviews for this report, there were cases of workers reporting that they did not leave the plantation site for upwards of two years. A further threat relating to loss of income is that workers are not paid for output deemed below the standard necessary for sale to China, even though this may be due to the failure of investors to provide adequate technical guidance and inputs, or contract workers being unable to afford sufficient daily workers. This concern was raised in interviews, where workers felt at risk of being left with nothing after many months of labour. The threat of financial penalties or dismissal means that workers are coerced into unpaid overtime, and there are no grievance mechanisms to which workers can resort. In a study by the workers’ rights organisation, Verité, all 13 migrant plantation workers interviewed claimed they exceeded the official eight-hour working day on a regular basis, with one respondent allowed only two rest days in the whole year (ibid., p. 72-73). A further means of restricting worker movement involves with holding ID cards.

Health and safety is a deep concern for workers, given that they lack any social security or compensation against injury and illness. In particular, there are health risks through contact with chemical pesticides and fertilisers, especially for pregnant women and children. Workers are not provided with adequate protection (such as appropriate clothing or masks), and children under the legal age of 16 are applying pesticides (ibid., p. 79). Indeed, while some children attend nearby village schools, others remain and may even work at the plantation. Workers living onsite may not have access to sanitary facilities, while their housing comprises flimsy dwellings, constructed without support from plantation owners.
Chinese Investment into Tissue-Culture Banana Plantations in Kachin State, Myanmar

Table 6: Labour laws and Articles that would apply to banana production

<table>
<thead>
<tr>
<th>Law</th>
<th>Year</th>
<th>Article</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shops and Establishments Law</td>
<td>1951 (Amd. 2016)</td>
<td>11, 13, 14</td>
<td>The basic working week carries a maximum of 8 hours a day for 6 days, totalling 48 hours a week. Overtime limited to 12 hours for one week (16 hours under special cases). Children under 14 cannot be employed. Those aged 14-16 can work 4 hours a day under medical certification.</td>
</tr>
<tr>
<td>Leave and Holiday Rules</td>
<td>2018</td>
<td>3, 16, 29, 36, 50</td>
<td>One day leave per week. Casual leave of 6 days per year; earned leave of 10 days (after 12 months of continuous service); provisions for medical and maternity leave, and public holidays.</td>
</tr>
<tr>
<td>Payment of Wages Act</td>
<td>2016</td>
<td>4</td>
<td>Payment period may not exceed 1 month.</td>
</tr>
<tr>
<td>Minimum Wages Law and Rules</td>
<td>2013</td>
<td>5, 8</td>
<td>Authority to set the minimum wage given to National Committee. In May 2018 a rate of 4,800 MMK (3.55 USD) per 8-hour working day was made effective.</td>
</tr>
<tr>
<td>Employment and Skills Development Law</td>
<td>2013</td>
<td>5</td>
<td>Following a contract template, a copy of the employment agreement must be sent to the relevant employment exchange office.</td>
</tr>
<tr>
<td>Labour Disputes Law</td>
<td>2012 (Edited 2014)</td>
<td>3, 6</td>
<td>There must be representatives for both workers and employers to settle and formally report labour disputes.</td>
</tr>
<tr>
<td>Social Security Law and Rules</td>
<td>2012</td>
<td>11, 13, 26, 28, 38</td>
<td>Following registration with the Social Security Board, workers have rights to medical treatment and benefits in the event of illness, accident or invalidity.</td>
</tr>
<tr>
<td>Occupational Health and Safety Law</td>
<td>8, 26, 28, 38</td>
<td></td>
<td>Businesses must be registered; employers must provide safe working conditions with appropriate safety equipment, and pay medical expenses for workers not covered under the Social Security Law; site must be available for inspection.</td>
</tr>
</tbody>
</table>

Box 3: Plantation workers, Waingmaw Township

A female plantation worker (32 years old) lived in an IDP camp for nearly eight years with her husband and four children. Together with her brother-in-law, they now manage around 9,000 banana trees over an area of ten acres in Waingmaw Township. This requires that the family must remain onsite over the whole cultivation season. The work is intensive, beyond a regular working schedule, demanding the employment of extra daily waged workers. They have not been provided with sufficient inputs (seeds, pesticides, fertiliser) to fulfil the task, meaning they must contribute their own finances. Yet the Chinese manager and his translators frequently monitor the site, bringing a constant demand to maintain the high workload.

‘I regret that I have come to work at this banana plantation. I thought my family might save something at the end of the season. However, as we have used our own money during production, there will not be enough to save anything. I wish that we were just farming rice as we used to do.’

11 The implementing agency for labour laws is the Ministry of Labour, Immigration and Population (MoLIP).
12. Social and environmental regulations

The Investment Law and Rules stipulate social and environmental conditions when undertaking a venture, although a further notification would be needed to apply them specifically to banana. Article 36 of the Investment Law states that a venture should not have a large impact on the environment or the local community, with such cases needing MIC approval (Pyidaungsu Hluttaw, 2016, p. 12). Article 5c of the Investment Rules gives details, specifying that a significant impact on the community involves the relocation of, or restrictions to occupy for at least 100 or more people in an area at least 100 acres (40.5 hectares) (MOPF, 2017, pp. 6–7), while Article 41c of the Investment Law prohibits a project that may affect the cultures and customs of ethnic groups (Pyidaungsu Hluttaw, 2016, p. 14). Article 41a-b prohibits investment which may bring or cause ‘hazardous or poisonous wastes’ in Myanmar, and ‘technologies, medicines, flora and fauna and instruments which are still being tested abroad or which have not obtained approvals to use, plant and cultivate’ being brought into the country. This brings into question the import of tissue culture saplings, and whether they are being registered for commercial use.

Any land-related investments which might have an impact on the environment require an assessment (Investment Law, Article 65g). According to the Environmental Impact Assessment Procedure (2015), which accompanies the Environmental Conservation Law (2012), there are various types of assessment that demand increasing gradients of information and cost as the project size increases (MoEC, 2015, p. 36):

- Up to 200 hectares: EMP – Environmental Management Plan (organised at State or Regional level)
- 200–500 hectares: IEE – Initial Environmental Examination (organised at Union level)
- Above 500 hectares: EIA – Environmental Impact Assessment (organised at Union level)

Despite the legal system covering many aspects of agricultural production, there is a clear question over enforcement in the case of banana production. Notification No. 96/2015, issued by the Ministry of Commerce, says that foreigners can trade in products such as fertilisers, seeds and pesticides when they are part of a joint venture. However, these partnerships are not being registered, and so would not qualify for this exemption.

There is, however, a degree of leeway in how these assessments are applied in practice. For example, the official endorsement for Kachin Tian Hu Company Ltd. involved just 76 hectares, and so in theory demanded an EMP. However, because of concerns about the potential impact, an IEE was requested at the cost of more than one million MMK (650 USD).

There are numerous other laws that could be applied to the environmental impacts of banana production, even if they do not specifically refer to the crop (Table 7). The legal stipulations are particularly relevant in the following ways:

- Seventeen Kachin-based companies are licensed to import compound fertiliser from China into Myanmar, while two companies (Sin Kyaing and Kachin Star) can import saplings. It is not clear whether these official imports serve all plantations in Kachin State, or that other imports are taking place without being registered or taxed for commercial purposes. There are no companies importing pesticides under commercial regulations, although domestic products are also available for use. A simple check involves the labelling, since licensed formulations of pesticides must be labelled in Burmese.
- The chemical content of production inputs (fertilisers, pesticides) is entering into soils, waste water and the crop itself (see Section on Impacts for further details).
- The setting up of banana plantations changes the natural landscape and impacts ecosystems, particularly in protected areas.
### Table 7: Social and environmental laws and articles that would apply to banana production

<table>
<thead>
<tr>
<th>Law</th>
<th>Year</th>
<th>Implementing Agency</th>
<th>Article</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Conservation Rules</td>
<td>2014</td>
<td>Environmental Conservation Department, MoNREC</td>
<td>69</td>
<td>Activity cannot pollute or damage the natural environment</td>
</tr>
<tr>
<td>Conservation of Biodiversity and Protected Areas Law</td>
<td>2018</td>
<td>Department of Forestry, MoNREC</td>
<td>35, 39, 40</td>
<td>Fines or imprisonment must be levied against those who dig and/or cultivate land (35c), pollute water soil and air (39d), or destroy the ecosystem by encroaching (40c) within a protected area</td>
</tr>
<tr>
<td>Fertiliser Law</td>
<td>2002 (Amd. 2015)</td>
<td>Department of Agriculture (DoA), MoALI</td>
<td>31</td>
<td>No-one can produce, import, or export fertilisers for commercial purpose without a registration certificate</td>
</tr>
<tr>
<td>Pesticide Law</td>
<td>2016</td>
<td>DoA, MoALI</td>
<td>24</td>
<td>Formulated pesticides should be labelled in the Myanmar language</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31-33</td>
<td>Unregistered and hazardous chemicals prohibited from importation or use</td>
</tr>
<tr>
<td>Plant Pest Quarantine Law</td>
<td>1993</td>
<td>DoA, MoALI</td>
<td>4</td>
<td>Import certificate and inspection required to import plant, plant products, pests, beneficial organisms or soil</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>Inspection needed of crop to be re-exported</td>
</tr>
<tr>
<td>Seed Law</td>
<td>2011 (Amd. 2015)</td>
<td>DoA, MoALI</td>
<td>8</td>
<td>Importing a new plant variety for commercial purposes requires a recognition certificate from the National Seed-related Committee</td>
</tr>
<tr>
<td>National Environmental Quality (Emissions) Guidelines</td>
<td>2015</td>
<td>MoNREC</td>
<td>Annex 1 1.2, 2.2.1</td>
<td>Inventory provided of permitted chemical levels in wastewater from production systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Inventory provided of permitted chemical use in commercial plantation crops, including banana</td>
</tr>
<tr>
<td>Prevention of Hazard from Chemical and Related Substances Law</td>
<td>2013</td>
<td>Directorate of Industrial Collaboration, MoI</td>
<td>13, 26</td>
<td>A person wishing to operate a chemical and related substances business must apply for a licence to the Central Supervisory Board</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any licensed business that is hazardous to humans, animals, or the environment, should be prohibited</td>
</tr>
<tr>
<td>Law on the Protection of the Rights of Ethnic Nationalities</td>
<td>2015</td>
<td>Ministry of Ethnic Affairs, MoEI</td>
<td>22</td>
<td>No-one should prohibit the rights and privileges of ethnic groups without credible reason</td>
</tr>
<tr>
<td>National Water Law</td>
<td>Draft in 2020</td>
<td>National Water Resources Committee, Ministry of Transport and Communications</td>
<td>-</td>
<td>Details as yet unknown</td>
</tr>
</tbody>
</table>
Regional policy frameworks can help to guide a response to understand and address some of the issues surrounding tissue-banana plantations identified in this report. In particular, the 10-point ASEAN Guidelines on Promoting Responsible Investment in Food, Agriculture and Forestry (ASEAN-RAI) aim to improve sustainable practices across the agricultural sector. Adopted by ASEAN countries, including Myanmar, on 11 October 2018, the guidelines ‘are part of a broad range of initiatives aimed at ensuring that investments in agriculture meet global standards and promote responsible and sustainable investment’ (ATWGARD, 2018, p. 3).

They are intended to align with the Committee on World Food Security’s (CFS) Principles for Responsible Investment in Agriculture and Food Systems (CFS-RAI), the CFS Voluntary Guidelines on the Responsible Governance of Tenure of Land, Forests and Fisheries (VGGT), as well as regional experiences and best practices. The guidelines view a stronger, more equitable regulatory environment as a precondition to more beneficial agricultural investments and better socio-economic and environmental outcomes. They also acknowledge the need to balance the common target of many ASEAN countries for large-scale agricultural investment with the interests of multiple stakeholders, such as local and indigenous communities, smallholders and vulnerable or marginalized groups (ATWGARD, 2018, p. 6).

The guidelines highlight six key challenges: (1) food security; (2) land rights; (3) jobs and livelihoods; (4) environment; (5) technical and institutional capacity; and (6) project failure. Subsequent sections of this report highlight how banana production impacts each of these thematic areas in different ways. Concerning land, ASEAN-RAI calls on all parties to respect tenure rights, including and understanding local customary systems, as well as applying the principles of Free, Prior and Informed Consent (FPIC) towards communities in the setting up of investment projects on their land (ATWGARD, 2018, p. 16). The guidelines also discourage any actions causing unnecessary displacement of the population, calling for improved information for communities about their tenure rights, backed up by the use of satellite data. Concerning the environment, the guidelines promote inter-ministerial coordination to plan against and monitor risks to air, land and water resources. The setting up of investments calls for ‘an inclusive, accessible, and transparent manner at all stages of the investment cycle, to level the playing field between investors and affected communities, mitigate potential conflicts, and facilitate monitoring of investment projects and their compliance with contractual and community agreements’ (ATWGARD, 2018, p. 20). As well as the screening and monitoring of investors, affected communities need access to effective mediation, grievance, and dispute resolution mechanisms.

Although the guidelines are voluntary, they are intended to support the strengthening of regulatory environments at the national level (ATWGARD, 2018, p. 6). As a result, they do not specify a pathway of action, nor do they contain any direct focus on banana as a crop. However, they offer a useful reference to how banana production could:

- align with sustainable practices as recognised at the ASEAN level
- develop equitable contracting systems between investors and landholders
- utilise fair dispute resolution mechanisms where grievances do occur
- connect new policy with international mandates promoting responsible investment practices.

Although the investment environment in Kachin State is complicated by localised dynamics of power and conflict, it is notable that Myanmar has actively adopted ASEAN-RAI to help improve its own regulatory structures. The guidelines can on this basis provide a reference to develop legislation that aims to address the social and environmental impacts of plantations, in which a first attempt is the planned Standard Operating Procedure on banana (see the Section on Responses, p. 44).

In relation to practicalities of production, ASEAN has also produced a Standard for Banana, based on various attributes outlining parameters for form, size, packaging, labelling and contaminants (ASEAN, 2012).
14. The impact of plantations

The rise of banana plantations in Kachin State is compounding land conflicts, particularly among smallholders who lose or give up their land. Small-scale farmers might initially be attracted by the income from leasing their land to Chinese investors. Some will benefit from reliable rental payments, and the ability to invest in farm or non-farm activities. There are also potential knock-on benefits such as improved roads to reach farmland areas and possible contributions to health and education facilities (HI, 2019, p. 30). However, rental agreements are sometimes delayed or unpaid. Many agreements are obtained through coercion, involving pressure from community leaders, or misleading information such as unfulfilled promises of farmland land use certificates (Form 7). There is little equity on display in the bargaining power between investors and farmers, where a lack of secure tenure can be manipulated to obtain low rates of rent on land. This extends to differing outcomes within communities, disrupting social cohesion (Box 4).

Box 4: Disrupting community cohesion

The acquisition of land for banana plantations can cause friction within communities. For example, residents of Naung Chain Village, Waingmaw Township, have entered a legal battle with their own village authorities who have designated part of the surrounding area as grazing land (Thin Lei Win, 2016). Some villagers claim this includes parts of their own land, and represents a ploy to rent it out to a Chinese company for a banana plantation. The authorities state that they have operated within the law, and that any land rental will generate income for the whole village.

It is also possible that villagers themselves organise rental contracts to hand over land for banana production. In Ding Jang Yang Village, Waingmaw Township, 30% of residents have rented land around the village to corporations. This counters recommendations from the village authorities, with the resulting plantation having a negative impact on access to water, and the cultivation practices of families retaining their land (MNJ, 2018).

Many smallholders lose their land altogether in deals where they have not been consulted. They might be driven further away from their villages to seek out new plots, or forced into waged employment (LSECNG, 2019). In particular, the land of IDPs might be seized by military or business actors and used for agribusiness in their absence (Box 5). They have not been able to register their land as demanded in the revised VFV and Farmland Laws, thereby reducing their chances of support from the legal system. This is a system that has marginalised customary practices in favour of commercial agriculture or other land uses by domestic and foreign investors. Indeed, even if some landholders profit from leasing out their land, the principal beneficiaries are military, political elites, and domestic business partners doing deals to provide land and commercial partnerships for Chinese investors. With militia groups potentially using revenue from land deals to fund their military capacities, the case of banana adds weight to the argument that stable and secure land rights for all users are essential in the drive for peace.
A major impact on local communities and the environment derives from the intensive use of chemical fertilisers and pesticides in banana cultivation. First, the consistent application of chemicals can cause significant loss of soil fertility and erosion even after three years (MNJ, 2018), leaving the degraded land unusable for several years after that. These chemicals can enter and pollute the water table (HI, 2019; LSECNG, 2019; Box 6). The disposal of chemical containers may further enter water sources, scattered plastic waste disrupts local ecosystems, and burnt containers emit toxic fumes. The chemical impacts have affected the health of humans, livestock and local biodiversity, including people working on plantations and those in the vicinity or downstream. Reported symptoms include dizziness, headaches, skin rashes, vomiting and diarrhoea (HI, 2019).

Plantations are also causing widespread changes to the surrounding landscape in Kachin State, because of the clearing of forest or scrubland, and as water courses are set up or diverted to feed the irrigation needs of banana production (Hein Ko Soe and Dunant, 2019). This can cause water shortages for downstream users. The setting up of plantations is

**Box 5: IDPs**

*Frontier* magazine tells the story of U Dashi Lamaing, who has lived in an IDP camp in Myitkyina Town since June 2011 (Htun Khaing, 2018). His village in Waingmaw Township borders China, and on a recent visit he discovered a banana plantation established on part of his 8 acre (3.2 ha) orange orchard. He acknowledged that he is powerless to stop the whole orchard being taken over. The article also recognises that much land around the Waingmaw-Bhamo road has been acquired to lease for banana investors, after residents fled fighting between government forces and the KIA.

The fear of losing land can also be a catalyst to take out land rental agreements with brokers. Daw Ywal Gyi is a refugee whose village, Gar Yar Yan Village, is located 28 miles from Waingmaw Town (Chan Thar, 2018). She claimed that companies are renting land around the village for 100,000 Kyat per acre (183 USD per hectare), warning the IDPs that if they do not sign up, the government will establish an industrial zone there. As a result, Sein Nagar Company, which is Yangon-based, has planted 1000 acres of banana in the village.

**Box 6: Polluted streams and fish deaths**

There have been a number of reports linking polluted water sources with the use of chemical fertilisers and pesticides in nearby banana plantations. In February 2019, the Kachin News Group reported about two streams that serve Aung Myay One and Two villages, supplying water for humans and livestock to drink, and for daily household use (Fishbein, 2019; Kachin News Group, 2019). Dead fish were found and testing conducted by the Environmental Conservation Department found the water to be contaminated. Villagers attributed the pollution to a 100-acre plantation in Aung Myay Two village, and demanded action to clean the water. They claimed that when renting out land, they were not informed about its use, and instead expected the cultivation of cassava or watermelon. Unfortunately, the testing did not include an inspection of the plantation to verify the source of pollution. The villagers fear further plantation expansion.
also contributing to deforestation in the State, particularly when they encroach upon designated forest areas. Together with the use of chemicals, landscape changes are playing a role in the decline of bee pastures, with wider implications for biodiversity (Tun Lin Aung, 2018).

In the last 50 years, a strain of Panama disease (Fusarium wilt), a soil-borne fungus known as Tropical Race 4 (Foc TR4), has spread across Southeast Asia, its expansion encouraged by banana plantations of the Cavendish variety (Zheng et al., 2018). Management of this disease, which threatens the global industry, is notoriously difficult, and prevention is identified as the best course of action. In 2017, the disease was found in Myanmar, with the identifying study concluding that it was probably introduced from Yunnan Province (ibid.). The FAO Food Chain Crisis Early Warning Bulletin for January-March 2020 signals a moderate warning for Panama disease during 2020 (FAO, 2020). Once infected the fungus can stay in the soil for years, and although not affecting other crops, can spread to indigenous banana varieties.
15. Responses

In response to the environmental and social impacts of banana plantations, there have been cases of civil dissent. In February 2018, the Myanmar Times reported on a protest by 200 villagers in Waingmaw Township over land and environmental violations (Khin Su Wai, 2018). This was backed up by letters of objection signed by 800 local residents and sent to the State Chief Minister.

The State and Union-level governments have shown some initiative in addressing the issues brought to light. In March 2019, the Kachin State Minister for Agriculture, Livestock and Irrigation announced that a special committee would be set up to look into illegal plantations, the rights of labourers, the environmental impacts, and the immigration of Chinese workers (Nan Lwin, 2019). In December 2019, the Upper House of Myanmar’s Parliament passed a proposal from Khun Win Thaung, a Kachin State MP, to regulate plantations, collect commercial taxes and reduce the environmental impact (Moe Moe, 2019). As a result, a Kachin Investigation Committee, comprising different government departments and technical experts, has been looking into the case of banana, raising particular concerns over chemical pollution and labour rights. From this investigation, the State government is drawing up a Standard Operating Procedure (SOP) in order to better formalise and regulate banana plantations. The document had not yet been finalised at the time of writing this report. As a note of caution, even if clear guidelines are drawn up, government actors seem wary about enforcing regulations on informal plantations, such is their contentious and politicised nature, and prefer to divert responsibility either to a different tier of authority (Union or State), or to a different Ministry or department. Despite many proclamations of political will to deal with banana plantations, there is a risk of inertia to avoid antagonising military and business elites, including vested interests within the State government. In this sense, the development of SOPs represents an important step towards clarifying roles and obligations, improving practices and achieving their acceptance.

However, it will not be sufficient to ensure that action is taken against illegal practices.

There is some evidence of cross-border coordination to address issues in the banana trade. Despite the fact that banana is not listed for formal import into China, the Yunnan government is actively involved in promoting production, as witnessed by their direct intervention to urge continued border trade during the COVID-19 pandemic (National Port Administration Office, 2020). In March 2019, a call was made to set up a Myanmar-China Joint Economic Supervision Team (Asia Fruit, 2019). This includes the involvement of TICC, who have already been in discussion with Kachin State Crop Growers Association to self-regulate within the banana sector and achieve a coordinated management regime (Gebu, 2019). However, there is a risk that self-regulation favours corporate interests and legalises plantation activities, but provides no action to support and protect the rights of smallholders and labourers, or the environment. In 2020, the State government invited Chinese technicians into plantation areas, discussing means for a bilateral agreement on trade and plant quarantine standards (Ni Ni Aung, 2020).
16. Conclusion and recommendations

The rise of tissue-culture banana plantations in Kachin State can best be understood as a continuation of historical cross-border trade relations between Kachin State and Yunnan Province. Agribusiness ventures and other extractive programmes surged after the 1994 ceasefire between the Tatmadaw and the KIA, involving military, militia, government and commercial figures. Tissue-culture banana was introduced alongside the Opium Substitution Programme in 2006, yet the crop has boomed only since 2015. Banana is highly profitable and provides fast returns compared with other crops, as demonstrated by the cost-benefit analysis for this report, leading to a rush for land in Kachin State. New investors are attracted by cheap land and labour, fertile soils, and its border with Yunnan Province.

Only three banana ventures have received official endorsements. Yet most plantations are not formalised following the Myanmar Investment Law, working conditions for plantation labour frequently contravene labour laws, and questions must be asked about whether the use of inputs adheres to commercial, trade and environmental regulations. In terms of revenue collection from plantations, environmental impacts from land use change and chemical use, and the enforcement of land laws, both Union and State-level governments are playing catch-up to realities on the ground. The range and extent of impacts, the fact that tax revenues are likely to be far below the actual value of banana trade, and that investors continue to seek fast profits while placing most risks in the hands of the weakest actors in the value chain, point to an urgent need to strengthen the regulatory environment for banana investments. Doing so might also have wider benefits in terms of placing responsible agricultural investment practices higher on the domestic policy agenda, with the potential to draw on emerging regional policy approaches such as ASEAN-RAI. Although it must be acknowledged that the investment environment for banana plantations in Kachin State is particularly complex in terms of the dynamics of power and conflict, Myanmar has actively adopted the ASEAN-RAI principles to help strengthen its regulatory structures. Having looked at the status of tissue-culture banana plantations in Kachin State, the actors involved, and how practices measure up to statutory law, a set of recommendations are put forward below. These recommendations are geared to promote more responsible agricultural investment, support the rights of local land users, and lead to sustainable production models that reduce negative social and environmental impacts.

1. A moratorium on new banana plantations would provide some breathing space to assess those that already exist and apply existing regulations to their operations. As part of this process, all existing plantations can be required to undergo an EIA, and a special plantation board could be set up to implement monitoring and evaluation.

2. Disputes can be avoided through a prohibition against plantations in village areas established without the consent of land users operating under customary forms of tenure. This includes IDPs.

3. There is much circumstantial evidence about the environmental impacts of banana plantations. Further research is needed to make an inventory of the chemicals used in production, combined with soil, water and human health tests to measure their effect.

4. There is an opportunity for the government to clarify commercial taxes and thereby enable more effective enforcement and collection of tax revenues. There are various forms to address, with exemptions or reductions an option should the investor receive the appropriate permissions to operate a plantation. Due to the potential amount of banana not being recorded for export, and the low value of present commercial taxes, Union and State governments are missing out on a significant revenue stream compared with the profitability of the crop. An improved system of taxation and collection could help to fund the human resources needed to monitor and enforce regulations relating to banana. The following
could be considered:

a. A tax on land use for a commercial venture
b. A tax on the import of all commercial inputs, including fertilisers, pesticides and saplings
c. Commercial tax on the output by weight
d. Customs duty
e. An environmental tax to cover any potential degradation.

5. The ASEAN-RAI guidelines can help to frame a national response in Myanmar to tissue-culture banana cultivation, which respects the rights of local communities, promotes clear and transparent means for investment, provides fair dispute resolution mechanisms where grievances do occur, and looks to safeguard the environment.

6. The proposed Standard Operating Procedure on banana could offer a unifying set of steps to solve many issues surrounding the inclusiveness and sustainability of banana investments. To ensure the adequacy of the content of the SOP, the process requires careful consultation among all stakeholders.

7. The registration of Chinese investors has to be better accounted for, and not rendered invisible behind Myanmar-based intermediaries. To help with this process, contract models can be used through which investors obtain land for plantations. There needs to be greater transparency over the presence and conditions for both domestic and foreign workers on plantations. This includes Chinese managers, workers, and truck drivers obtaining appropriate immigrant status to work in Kachin State.

8. Chinese agribusiness companies are looking for clear regulations to operate in Kachin State. This should be encouraged as part of a multi-stakeholder approach to develop responsible lines of investment and sustainable production practices.

9. In March 2020, Kachin State government signed an MoU with a China-Myanmar joint venture to develop a business park around Kanpaikti border crossing (Chan Mya Htwe, 2020). The project would involve a major upgrade of the border gate. This represents an opportunity to improve inspection facilities for collecting revenues on imported chemicals and saplings, checking permits and enforcing immigration requirements relating to commercial agribusiness ventures.

10. A National Water Law is currently being drafted, and it is hoped that a National Land Law will follow. Both can unify and clarify multiple strands of legislation. For the new Water Law, there is an opportunity to include Articles that account for chemical use in banana production, and how irrigation is set up for plantations. For a future Land Law, the rights of local land users must be addressed, and the law could build on the 2016 National Land Use Policy in recognising customary land use systems.

11. Union and Kachin State governments could benefit from their support to local farmer groups, religious NGOs and think tanks. Such groups offer the best means to monitor what is happening on the ground with the setting up of new banana plantations, and help to identify potential violations of commercial rights or negative environmental impacts. They could also support an independent system of complaints and investigation.

12. Understanding the dynamics of banana production and trade requires quality data that can be verified. The government could make data about the operators and the areas under cultivation publicly available. Modern technologies can help to access more reliable data. The LSECNG alliance has done excellent work using satellite imagery to identify plantation areas around Waingmaw Township. Follow-up work could map out the rest of Kachin State, and could also clarify the presence of plantations in protected and reserved forest. This represents a good opportunity for government and civil society to work together.
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Ni Ni Aung, 2020. More than 480,000 tons of banana have been exported within the first 5 month period of financial year. Farmer Journal. 27.


Pwint Phyu Phyu Lwin, 2019. The increase in tonnage of tissue banana export to China through Kanpate Tee border during the last nine-year period. Farmer Journal. 23 (337) p. 34.


Appendix 1: List of interviews

The following list puts together all interviews conducted as part of this study. Specific names have been omitted for confidentiality, with the institutional affiliation of each interviewee given.

**February 2019**

- Myanmar Fruit, Flower and Vegetable Producer and Exporter Association (MFFVPEA)
- Environment and Conservation Department, Ministry of Natural Resources and Environment Conservation, Kachin State Government
- Department of Agricultural Land Management and Statistics (DALMS), Ministry of Agriculture, Livestock and Irrigation, Kachin State Government
- Land Securities & Environmental Conservation Networking Group (LSECNG)
- Border Trade Chamber of Commerce Association, Kanpaikti
- Directorate of Investment and Company Administration (DICA), Ministry of Investment and Foreign Economic Relations, Kachin State Government
- Ministry of Agriculture, Livestock and Irrigation, Kachin State Government
- Kachin State Chambers of Commerce and Industry
- GRET Myanmar
- Oxfam in Myanmar

**April-August 2020**

- Verité
- EarthRights International
- Various independent consultants operating in Myanmar
- Independent journalist
- Mekong Economics
- Health Poverty Action
- Asia Foundation
- Kachin Independence Organisation (KIO)
- Oxfam in Myanmar
- Land Securities & Environmental Conservation Networking Group (LSECNG)
- Yunnan Jinxin Agricultural Company
- Independent Chinese banana investor
- Tengchong Agriculture Bureau
- Loi Ngu Bum Co., Ltd
- Sut Bum Co., Ltd
- Sin Kyaing Co., Ltd
- Htain Min Co., Ltd
- Kachin Star Co., Ltd
- Department of Agriculture, Ministry of Agriculture, Livestock and Irrigation, Kachin State Government
- Plant Protection Division, Ministry of Agriculture, Livestock and Irrigation, Kachin State Government
- Kachin Baptist Convention
- Kachin Conservation Working Group (KWCG)
- Myanmar Fruit, Flower and Vegetable Producer and Exporter Association (MFFVPEA)
- Labour agent, Waingmaw Township, Kachin State
- Agro-chemical retailer, Waingmaw Township, Kachin State
- Residents of two villages, Waingmaw Township
- Migrant and local plantation workers based in Waingmaw Township
Appendix 2: TICC members with banana plantations in kachin state

The following list provides company members of Tengchong International Chamber of Commerce (TICC), who control land for banana plantations in Kachin State.

1. Yunnan Jinxin Agricultural Ltd.
2. Tengchong Xinghua Trading Ltd.
3. Tengchong Senxin Timber Ltd.
4. Tengchong Hongda Trading Ltd.
5. Tengchong Hangfa Trading Ltd.
6. Tengchong Wangjia Trading Ltd.
7. Tengchong Misen Trading Ltd.
8. Tengchong Tianhu Trading Ltd.
9. Tengchong Wenshun Trading Ltd.
10. Tengchong Rongyao Trading Ltd.
11. Tengchong Jintai Trading Ltd.
12. Tengchong Haoxiang Trading Ltd.
13. Tengchong Xinyu Bio-tech Ltd.

(Source: TICC from data collected in 2018)

Appendix 3: List of myanmar companies operating in tissue-culture banana sector

1. Chang Yin Hku (Shan Yin Hku)
2. Loi Ngu Bum
3. Sut Bum
4. Sin Kyaing
5. Htein Min
6. Kachin Star
7. Bambuyaung
8. Maukkum
9. KMK
10. Bamaw Star
11. Ngwe Gon Kywe
12. Banmaw Shan Oosi
13. Seven Force
14. Kyauksein Yadanar Mawmyay
15. Shunttone
16. Aye Hteik San
17. Baung Heik
18. Yadanar Kyaw Zaw
19. Phue Pyae Hlyan
20. Tha Khin Sit
21. Pann Myat Marlar
22. U Aung Paing Company Ltd.
23. Generation Star Company Ltd.
24. Shein Thar
25. Mali Kha Dragon
26. Jingpho Nad
27. Northern Taw Win Myay
28. Ngwe Kyaw Phyu
29. Myay Thinn Yanant
30. Cannam Co., Ltd
31. Tawwin Ye Htut
32. Khant Nyar
33. Thee Sein
34. Royal Jade
35. Green Ye Htut
36. Sut Jat (in KIO-controlled area)
37. Kachin Tian Hu Company Ltd (joint Chinese-Myanmar venture)

(List compiled from multiple sources, including Kachin Department of Agriculture, the Crop Producers Association, and interview respondents)
Chinese Investment into Tissue-Culture Banana Plantations in Kachin State, Myanmar

Banana farm workers are maintaining banana (photo: Ko Lwin)
The Mekong Region Land Governance Project (MRLG) aims to improve the land tenure security of smallholder farmers in the Mekong Region and has been operating in Cambodia, Laos, Myanmar and Vietnam since April 2014.

MRLG is a project of the Government of Switzerland, through the Swiss Agency for Development and Cooperation (SDC), with co-financing from the Government of Germany and the Government of Luxembourg.

For more information on MRLG, please visit

www.mrlg.org

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