ABSTRACT: Cultural, discursive, and technological differences notwithstanding, the peripheralization effects of plantation agriculture-based development pathways seem to be as vibrant today as during the height of the modern era’s imperialism. This, at least, is what Bosma suggests, and I fully agree with him. The plantation, that modern labour-expelling periphery-making machine, is alive and kicking hard amid convergent socioecological crises nowadays. And this is an analytically but also politically salient phenomenon. Most often, development models which rely on predatory extractivism not only leave the majority of the population behind the well-being bandwagon, thereby turning a deaf ear to the pledge of the 2030 Agenda for Sustainable Development to “leave no one behind”; they also erode the ecological base, socioeconomic fabric, and institutions that enable more just and environmentally sound life projects to blossom. Thus, the careful examination of the complex and generative interplay between the model and intensity of resource extractivism and the broader political economy, as developed by Bosma in The Making of a Periphery, calls into question any non-transformative climate stewardship and sustainable development efforts, like the “business as usual” one represented by the flex crops and commodities complexes of the twenty-first century.
INTRODUCTION

In The Making of a Periphery: How Island Southeast Asia Became a Mass Exporter of Labor, Ulbe Bosma’s inquiry on the process of peripheralization in Island Southeast Asia offers a thought-provoking genealogy of contemporary development trajectories in the region and beyond. These especially include dynamics of human mobility, migration/transmigration, and socio-ecological change; the vibrant plantation economy in and around which capitalist and non-capitalist relations of production coexist; the dual and contradictory role of the estate to facilitate capital accumulation while keeping a minimum degree of social legitimation; the limits of the macroeconomic and sectoral reforms following the neoliberal “trickle-down” policy dogma from the late 1970s onward; and, of course, the issues of labour regimes and labour surpluses which stem from, and simultaneously shape, all the previous dynamics. To carry out this historization of the present conjuncture so to speak, Bosma analyses “peripheralization as a global phenomenon, but from an interdisciplinary and comparative perspective”. This methodological approach, to which I personally subscribe too, allows Bosma to ground world-system bird’s-eye accounts of development trajectories in the longue durée on a diversity of geographically and historically specific units of analysis.

My contribution to this dossier reflects on the current world-historic conjuncture from the perspective of the argument put forward by The Making of a Periphery. Specifically, I discuss the making and remaking of resource extractivism, and plantation agriculture in particular, as a labour-expelling, ‘periphery-making machine’ under the converging global crises of the early twenty-first century. In 2008, climate, environmental, energy, food, and financial/economic crises took centre stage and have thrived ever since. In this conjuncture, global demand for primary commodities soars and natural resource extractivism regains momentum in business strategies, but also in policies of poverty alleviation and climate change adaptation and mitigation efforts. Natural resources are framed as a vehicle of transition to socially and environmentally sound forms of goods and energy production, prioritizing the needs of humanity and Planet Earth. Crops and trees quickly become one such transformational vehicle – particularly their newer and flexibly

interchangeable uses as carbon sinks and sources of bioenergy and biomaterials—complementing their traditional uses as food, feed, fibre, fuel, and timber. As a result, corporate “flex crops and commodities complexes” consolidate and upgrade within former strongholds, and expand to new territories to tackle the convergent crises. In so doing, they contribute to a large extent to the latest global resource rush in old and newer “oil palm landias”, as Bosma puts it, as well as “soybean landias” and “sugarcane landias” across the world.

My examination of these converging phenomena in Guatemala since 2005 offers a series of insights that resonate elsewhere, including present-day Island Southeast Asia. Specifically, flex sugarcane and oil palm complexes thrived from 2005 onward under the auspices of a favourable world-historic conjuncture and a powerful Guatemalan post-colonial oligarchy with thick ties to international financial capital. Paradoxically framed as a silver bullet for sustainable development, the ways in which labour, land, financial capital, knowledge, and non-human nature are mobilized into cane and palm commodity production result in a predatory, life-purging model of agrarian extractivism. This is because the flex cane and palm complexes drive a social and ecological purge of the countryside which adversely affects friends and foes alike, regardless of species, social class, gender, ethnicity, or livelihood. However, in the densely populated, structurally unequal and largely job-scarce Guatemalan context of the early twenty-first century, which might resonate in many parts of Island Southeast Asia today, the purge is especially hard on the thousands of working families (and particularly on women) who are deemed redundant for the new development model. Additionally, they also suffer most from resource depletion and contaminants and waste transfer by cane and palm companies.

In what follows, I compare these claims of what is happening nowadays in Guatemala with similar ones by Bosma in The Making of a Periphery.


5. A. Alonso-Fradejas, “Sons and Daughters of the Earth”: Indigenous Communities and Land Grabs in Guatemala (Oakland and Amsterdam, 2013).

I organize the discussion along three sets of criteria to examine the intensity of resource extractiveness of a mode/form of production. For the case at hand, the first set includes criteria related to whether, how, and to what extent external nature is exhausted, or the breadth of the “metabolic rift” between agriculture and non-human nature. The focus is on the “social metabolism” of the flex cane and palm complexes, meaning “the manner in which human societies organize their growing exchanges of energy and materials with the environment”. The socio-metabolic perspective also includes labour dynamics. But considering the centrality of the labour question in sustainable development, and for explanatory purposes, I analyse labour issues separately.

Thus, a second set of criteria focuses on labour and “labour regimes”, and includes three specific criteria. The first relates to the implications of the rise of the flex cane and palm complexes for employment numbers. The interest here is on jobs in cane and palm companies and in the broader economy. The second criterion involves wages and working conditions in cane and palm companies. The third concerns whether, how, and to what extent cane and palm companies rely on the appropriation of what can be considered neither hired nor paid labour, and is generally family labour.

My third set of criteria to examine the intensity of resource extractiveness of cane and palm companies delves into the question of control over value and capital flows. It includes criteria regarding whether, how, and to what extent land’s ground-rent, financial interest, royalties from intellectual property rights, and payments for environmental services, as well as state subsidies, are crafted, extracted, and appropriated by the owners of cane and palm companies for productive purposes. This means that rather than appropriating them for consumption purposes, those owners reinvest the flows of capital, or a significant part thereof, to strengthen the productive capacity and profitability of their businesses. This is a key aspect, for it is in the productive use of the revenues appropriated by non-direct producers that the key lies to differentiating “extractivist” from merely “rentier” forms of accumulation.

I then turn to twine together key insights from the separate analysis of the three sets of criteria into a comprehensive argument about why flex cane and palm complexes-driven development can be categorized as life-purging agrarian extractivism. I conclude with a reflection on the implications of the
renewed traction of resource extractivism, including plantation agriculture, in Central America, Island Southeast Asia, and elsewhere for the broader political economy, ecology, and sociology of sustainable development today.

CONTROL OVER VALUE AND CAPITAL FLOWS BY CANE AND PALM COMPANIES

Cane and palm companies craft, extract, and appropriate an increasingly diverse mix of capital flows stemming from state revenues and cane and palm commodity value portions. Exceptions notwithstanding, cane and palm companies hoard ground-rent from farmland, interest from investments (in real estate or financial assets for example), royalties from intellectual property rights (over plant varieties and transformation processes and technology for instance), and payments for ecosystem services (including biogas generation from palm oil mill effluent (POME)). They additionally enjoy tax exemptions, preferential cheap funding through national and international public moneys, as well as state subsidies for infrastructural mega-projects in energy and transport, and public social grants for workers and their families. As a result, cane and palm companies can either limit or eliminate external rent claims, such as interest from financiers, ground-rent from landlords, or taxes from the state, and reap super-profits in return. Furthermore, cane and palm companies almost completely eliminate any potential spill-over effect of their wealth concentration in the local economy. They siphon off much of these capital flows from their operating areas to Guatemala City and overseas, as was also the case in the plantation belts of Java, Northern Philippines, and Malaysia which Bosma studies in *The Making of a Periphery.*

THE LABOUR REGIME OF CANE AND PALM COMPANIES

The expansion of cane and palm companies from 2005 onward made employment numbers on cane and palm plantations initially grow. But these started to shrink after the companies achieved world-record productivity gains from 2012 onward. Higher labour productivity means fewer workers are needed. For instance, the number of cane cutters in Guatemala fell from 65,000 in 1990 to 35,000 in 2012, even though the area under cane cultivation doubled during the same period. Higher labour productivity is the outcome of a labour regime fix by cane and palm companies that swaps better wages and to a lesser extent improved working conditions for harder, longer, and more

casual working days. Since mechanization of cane and palm cultivation tends to be costly, unfeasible, or both, companies depend on the extension and intensification of the working day to hike labour productivity. Hence, labour productivity increases rely on flex and piecemeal work.

Following the labour regime fix, risky and increasingly strenuous work on cane and palm plantations can have a serious, and sometimes fatal, effect on the health of workers – especially when piecework wages are tied to working more and faster.\(^\text{12}\) Palm harvesting entails chopping down palm fruit bunches that weigh up to forty kilograms, and letting them freefall fifteen to twenty-five metres. Reports of workers hit by falling palm fruit bunches are common. Fruit bunches are then loaded into water-buffalo carts and transported to the roads where trucks heading for the mill await. A truck can carry about 3,000 fruit bunches that need to be uploaded manually from the water-buffalo carts. Bruises and sprains are routine injuries for those charged with this task. In other cases, workers are asked to apply between fifteen and twenty sacks of fertilizer, each one weighing around fifty kilos. Even the most experienced workers report eye and respiratory disorders and skin rashes following fertilizer application. In addition to physical exhaustion from lifting heavy palm fruit bunches or fertilizer bags under demanding tropical conditions marked by heat and humidity, there are the risks of cuts from thorny fronds and snakebites while walking around in the underbrush on the palm plantations. Harsh work characterizes cane harvesting too. “A worker cutting 6 tonnes of cane a day in a 200-by-6 metre area walks approximately 4.4 kilometres and is required to make around 66,666 machete hits and body flexions”.\(^\text{13}\) Dehydration-related disorders are also reported by palm plantation workers, though these seem to be less severe than those affecting cane cutters. Initially documented in Nicaragua, a fatal dehydration-related chronic kidney disease (Mesoamerican nephropathy) is killing cane cutters by the hundreds in Central America.\(^\text{14}\)

Additionally, the flex and piece-rate based plantation labour regime from 2012 onward increased the appropriation for free of the productive and reproductive labour of the plantation workers’ families by cane and palm companies. The question of subsistence farming subsidizing rural wage-work is also addressed in *The Making of the Periphery*, although on a more positive note than my findings.

\(^\text{12}\) In 2015, the Office of the United Nations High Commissioner for Human Rights (OHCHR) in Guatemala observed that there is “the practice of conditioning salaries on reaching productivity goals imposed unilaterally by the companies. As a result, overtime is not remunerated, and workers’ physical integrity and health have been affected”. UNHRC, *Annual Report of the United Nations High Commissioner for Human Rights, Addendum: Report of the United Nations High Commissioner for Human Rights on the Activities of His Office in Guatemala* (Geneva, 2015), pp. 1–21, 16.

\(^\text{13}\) F. Alves, “Por que morrem os cortadores de cana”, *Saúde e Sociedade*, 15:3 (2006), pp. 90–98, 94–95.

suggest. On the one hand, cane and palm companies appropriate the unpaid productive labour of children and women assisting wage-earning adult men in piece-rate plantation work. This is nothing new to the gender and generational divisions of labour in the Guatemalan northern lowlands. But there are meaningful differences with respect to how this works under a time-rate wage system. For instance, unpaid family labour would traditionally support wage-earning men under a time-rate wage system to finish their daily job assignments faster so they could dedicate the remaining part of the workday to the family farm. Children’s labour would usually perform as a reinforcement once school was out, and women’s labour would be devoted mainly to reproductive tasks, often including tending an orchard at home. But in current plantation work under piecemeal wage systems, for many men unpaid family labour becomes essential to achieve the equivalent of a legal minimum wage. Were it not for the support of their partners and children, plantation wage-workers would have either had to allocate extra time for this task or hire an assistant. This is why many children quit school during the periods their fathers work for palm companies.

On the other hand, cane and palm companies can keep piece rates low thanks to the unpaid productive and reproductive labour of women, children, and elders in the wage-earning workers’ households. In families whose male members migrate for plantation work or stay but are employed in jobs demanding long working days, women take over family farming tasks and responsibilities. For many women this means having to extend already long and overloaded working days. Mingorría et al. explain that, in Guatemala, members of “households working in oil palm plantations, and particularly women, have no time for community activities, personal care, or resting, even when they desire so, since they prefer saturating their time than abandoning or significantly reducing maize cultivation”. Children wake up at four a.m. to fetch water and collect firewood so women can prepare coffee and warm up tortillas on the “comal”, before men head to the plantation by five a.m. And especially when head-of-household women need to take over the family farm work, family elders keep working until their last breath in a diversity of tasks such as water and firewood collection, cooking, weaving, cleaning, and taking care of children, the sick, and the injured.

THE SOCIAL METABOLISM OF CANE AND PALM COMPANIES

Cane and palm companies appropriate and use many natural resources and services, and dispose of large amounts of contaminant waste, at zero cost.

On the one side, the transformation of nature into cane and palm commodities requires large amounts of energy and materials from within and outside the agroecosystem. Land use associated with a total clearing of land to make way for cane and palm plantations demands a major appropriation of environmental resources and services. Cane and palm farming and the concomitant changes to the land similarly involve extremely large quantities of soil and water nutrients. Hence, in addition to stockpiling those nutrients that exist in a plantation’s agroecosystem, chemical fertilizers are applied to the soil, while streams are diverted and underground water is pumped into cane and palm fields.

On the other side, the brunt of waste and pollutants generated throughout the process of cane and palm commodity production is transferred gratuitously to human and non-human nature in the production areas and beyond. Most often, land use for cane and palm plantations limits the capacity of agroecosystems to perform as carbon sinks (through deforestation and peatland drainage for instance), and thereby leads to higher carbon dioxide emissions. Cane and palm farming and transformation into different commodities are also polluting and waste-heavy processes. The soil itself serves as a dumping site, and among the many forms of waste and pollutants it absorbs those resulting from agrochemical input use are striking. Freshwater bodies likewise act as carriers and depositories of pollutants and waste when cane and palm are farmed and processed.

LIFE-PURGING AGRARIAN EXTRACTIVISM

The development model brought about by the flex cane and palm complexes in Guatemala from 2005 onward has positive implications for the few who have been able to capitalize on the sale or lease of their land, and/or to get a relatively stable and remunerative job. But as the previous sections make clear, it yields adverse consequences for many, and for non-human nature. The flex cane and palm complexes constrain the scope for other livelihoods in agriculture, forestry, fishing, or tourism to thrive in their areas of operation and beyond, regardless of whether these are subsistence- or business-oriented livelihoods. This strongly resonates with Bosma’s argument that “plantation economies can be a powerful source of economic growth but usually only temporarily, as they offer limited opportunities for skilled employment. Likewise, they offer little in terms of local economic diversification”.16

On the one hand, as I flagged earlier, especially after its fix from 2012 onward the labour regime of the cane and palm companies results in better paid jobs for some, but at the same time in less and worse employment for

most plantation workers. On top of this, cane and palm are much less labour intensive than the crops commonly farmed by working people. For instance, cane and palm require just 36 and 52 working days per hectare/year, respectively, whereas maize demands 112 and chili 184 working days per hectare/year. The flex and piecemeal-based plantation labour regime increases the corporate appropriation of productive and reproductive labour of the plantation workers’ families for free. On the other hand, cane and palm companies grab control over large tracts of land, restructure the local labour regime, and hoard financial capital, land’s ground-rent, royalties from intellectual property rights, payments from environmental services, and state revenues. They can do so as part of almighty oligarchic family business groups with high political leverage over the state, as was the case with the Dutch East India Company (VOC) and the foreign – and later, gradually domestic – planters figuring in The Making of a Periphery.

Furthermore, the flex cane and palm complexes create toxic landscapes and waterscapes. This is an issue The Making of a Periphery does not really delve into. Indeed, Bosma does not need to in order to make a convincing argument about the labour-expelling plantation economies he analyses. But I would argue that looking at the socioenvironmental effects has become essential following the worldwide, yet uneven, spread of agrochemical input-dependent agriculture throughout the twentieth century, with its negative effects on human and non-human nature and the planet’s temperature. In present-day Guatemala, the land-use changes associated with expanding plantations and the hyper-intensive forms of cane and palm commodity production shape the weather (rain and rainfall) and constrain the abilities of the plantation agroecosystem to renew its stocks of energy and materials (soil nutrients). Hence, cane and palm companies search for ways to increase their resilience to climate variability and environmental disruption, while at the same time increasing productivity and reducing production costs so they can stay in business and remain successful. As a result, they adopt soil conservation, biological pest control, and other so-called “sustainable intensification” and “climate-smart” agricultural practices.

Despite, and sometimes because of, these acclimatization and greening efforts, cane and palm companies trigger a series of adverse environmental impacts. Four such impacts stem from four separate mechanisms of dumping waste and contaminants into the soil. First, aerial spraying of agrochemicals over cane plantations adversely affects people, crops, livestock, and forests. Second, the use of glyphosate-based herbicide in plantations, as a broad-spectrum pesticide, negatively impacts the health of workers and nearby human dwellers and non-human species. Third, more sustainable
intensification of farming practices by cane and palm companies, such as biological pest control and the use of superfluous crop biomass and mill residues for soil fertilization, still involve the transfer of environmental burdens (for example, the proliferation of snakes and flies, respectively, which adversely affect people and cattle). Fourth, the process of rehabilitating the soil nutrients after decades of intensive cane and palm farming is a very costly and lengthy one, so over-exploited corporate plantations are simply left idle. Additionally, water flowing through intensely farmed plantations and from processing mills filters into underground aquifers and is released into rivers and streams, unleashing two further negative environmental impacts. The first one concerns the adverse implications for aquatic life and biodiversity. The UN in Guatemala labels the damage caused to the human use of water for productive and reproductive purposes such as cooking and fishing as “ecocide”. The second is the negative implications of polluted water on human health (when drinking or bathing for instance).

Therefore, the rise of the flex cane and palm complexes in Guatemala during the contemporary global crises results in a “purge” of human and non-human nature, which resonates with the cases examined in The Making of a Periphery. This purge adversely affects everything and everyone regardless of species, social class, gender, ethnicity, or livelihood. However, in the largely job-scarce, densely populated, and extremely unequal Guatemalan context of the early twenty-first century, the purge strikes particularly hard the thousands of working families (and particularly women) who are deemed redundant or “surplus” for the new mainstream development model. Once again, this is nothing new nor specific to Guatemala. For instance, as in many other places around the world during the onset of neoliberal globalization, the structural adjustment of the Guatemalan economy during 1986–2005 pushed many working people into the latent section of the relative surplus population, which “struggles to reproduce itself through farming and is always ready to provide the cheapest labour within a potentially expanded labour-force”. But the life-purging agro-extractivism of cane and palm companies from 2005 onward downgrades many working people from the latent to the stagnant section of the relative surplus population, “with extremely irregular employment [and] characterised by maximum of working-time and minimum


of wages”. Thus, the current rise of the flex cane and palm complexes swells the reserve army of labour while simultaneously pushing the relative surplus population to the limits of subsistence through the destruction of jobs and livelihoods, and the creation of toxic landscapes and waterscapes.

In this context, the main coping strategy of the masses of purged villagers – namely fleeing – is increasingly constrained. The Guatemalan agrarian frontier has been legally closed since 1990, and trespassers into the Mayan Biosphere Reserve and other nature conservation enclosures are criminalized as “eco-terrorists” or narco-collaborators. Guatemala City keeps hosting desperate newcomers in its sprouting network of violence-ridden and job-poor slums, resembling those in Jakarta or Manila nowadays. And the national security imperative following the 9/11 attacks in the US, together with the ensuing economic recession that began in 2008 there and the anti-immigration policy of Trump’s administration since 2017, are expressed through the tightening of border policing in this preferred destination of Guatemalan (and other) migrants. This results in the yearly expulsion of tens of thousands of unauthorized Guatemalan (but also Filipino and Indonesian) migrants living in the US.

CONCLUSION

Cultural, discursive, and technological differences notwithstanding, the peripheralization effects of plantation agriculture-based development pathways seem to be as vibrant today as during the height of the modern era’s imperialism, as Bosma suggests, and I fully agree with him. The plantation, the modern labour-expelling periphery-making machine, is alive and kicking hard amid convergent socioecological crises nowadays. And this is an analytically but also politically salient phenomenon. Most often, development models which rely on predatory resource extractivism not only leave the majority of the population behind the well-being bandwagon, thereby turning a deaf ear to the pledge of the 2030 Agenda for Sustainable Development to “leave no one behind”; they also erode the ecological base, socioeconomic fabric, and

institutions that enable more just and environmentally sound life projects to blossom.

Thus, the careful examination of the complex and generative interplay between the model and intensity of resource extractivism and the broader political economy, as developed by Bosma in *The Making of a Periphery*, calls into question any non-transformative climate stewardship and sustainable development efforts, like the “business as usual” one represented by the flex crops and commodities complexes of the twenty-first century.