
RUBBISH JUSTICE:

A POLITICAL ECOLOGY OF TIBAR'S DUMPSITE-TO-LANDFILL UPGRADE
IN DILI, TIMOR-LESTE



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COVER IMAGE: APPROACHING TIBAR DUMPSITE, TIMOR-LESTE
SOURCE: AUTHOR'S OWN
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ABSTRACT

In pursuing significant infrastructural upgrades to solid waste management systems, how do decision-makers balance social safeguarding with wider system improvements? What are the implications for justice, if the people most affected by the development, have been providing unrecognised labour within the same system? Adopting an intentionally political lens, this thesis presents an analysis of power and justice within the case study of Tibar's dumpsite-to-landfill upgrade, in Timor-Leste.

This research was conducted at a critical time while the upgrade was developing. Through a political ecology framework, supported by environmental justice, it emerges that there is a disconnect between stakeholders' and decision-makers' intentions versus their ability to act on these intentions. Several systemic barriers exist in waste-pickers' justice being met. In some instances, these barriers constitute such injustices. This thesis further evidences the claim that the impacts of the growing waste problem are not evenly distributed throughout society.

Tibar dumpsite is established as a political space where the intersection of waste and labour is dynamic and changing, brought to light by the proposed dumpsite-to-landfill upgrade.

KEYWORDS: waste, justice, solid waste management, Timor-Leste, political ecology, environmental justice, waste labour

WITH THANKS

I had initially written an acknowledgement section worthy of its own thesis.

I'll try to keep this one short.

This thesis would not exist without the hard work, support, and trust of my friends and colleagues at UNDP, Timor-Leste. Particularly mana Berta, mana Dircia, maun Julio and maun Rei. Obrigada barak.

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ABBREVIATIONS

ADB – Asian Development Bank

GoTL – Government of Timor-Leste

NG/IOs – Non-governmental / international organisations

LMICs – Low-to-middle income countries

SWM – Solid Waste Management

UN – United Nations

UNDP – United Nations Development Programme

UN-HABITAT – United Nations Human Settlements Programme

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CHAPTER ONE

INTRODUCING THE RESEARCH: WASTE JUSTICE AND TIBAR DUMPSITE

1.1 INTRODUCTION: THE WASTE ISSUE - OUT OF SIGHT, OUT OF MIND

For many, waste does not exist in our daily lives beyond putting rubbish bags out on the street, or flushing the toilet. Certainly, the very nature of solid waste management is concerned with how best to remove waste from society. In Aotearoa New Zealand, along with many other high-income countries, solid waste goes to landfills - tucked away, out of sight. Yet landfill is finite, and waste is becoming increasingly difficult to ignore; global solid waste generation is increasing at an unprecedented rate. In 2016, annual municipal solid waste figures reached 2.01 billion tonnes, this is anticipated to reach 3.4 billion tonnes by 2050 (Kaza et al., 2018).¹ As of 2018, 55% of the total global population now lives in cities, which is projected to reach 66% by 2050 (United Nations Department of Economic and Social Affairs, 2018). With urbanisation on the rise, global solid waste generation is anticipated to increase exponentially, enabled by increased industrialisation (which has accelerated the global production of material goods). By 2050, the rate of solid waste production is projected to overtake the rate of urbanisation (Kaza et al., 2018). Indeed, the impacts of solid waste are visible and growing: escalating amounts of solid waste threatens the absorptive capacity of receiving environments and ecosystems, and places pressure on national and local authorities' abilities to guarantee basic public services and safeguard human health. History has demonstrated time and again that waste must be properly managed in order to prevent the spread of infectious disease.

While the environmental and public health impacts of solid waste are receiving significant global attention, the role of waste workers - those who are directly managing this waste - is largely overlooked. In many developing contexts, the informal waste sector plays an integral role in municipal solid waste management (SWM), including the collection, sorting, recovery and recycling of waste (Wilson et al., 2006). The informal waste sector (Figure 1) is typically comprised of labour-intensive, low-paid work carried out by individuals and family groups, work which is largely unrecognised or unregulated by local authorities (Medina, 2000). My research is specifically concerned with waste-pickers, who are considered to have the least power within the informal waste sector (Wilson et al., 2006), are stigmatized, marginalised, or associated with low social status (O'Hare, 2017; Sternberg,

¹ Municipal solid waste is primarily comprised of urban solid waste from households, commerce and trade, offices, street waste, and general rubbish (excluding sewage). The World Bank data includes construction and demolition waste in municipal waste as it constitutes a significant portion of solid waste profiles in low-to-middle income countries.

2013; Whitson, 2011), and who work, and often live, in hazardous environments (Medina, 2000; UN-HABITAT, 2010).

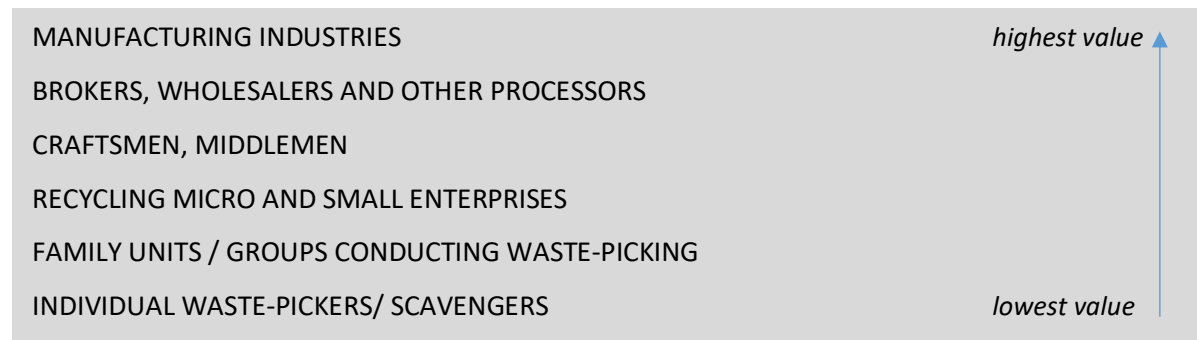


FIGURE 1: INFORMAL SECTOR HIERARCHY

Adapted from Wilson, D. C., Velis, C., & Cheeseman, C. (2006). Role of informal sector recycling in waste management in developing countries. *Habitat International*, 30(4), 797-808.

This thesis explores the place of waste-pickers within SWM systems and the ways in which waste is intrinsically linked to their lives, livelihoods, and identities, drawing upon the specific case of a proposed landfill upgrade of Tibar dumpsite in Timor-Leste. In doing so, waste provides a lens with which to analyse social inequalities and injustices right from the production to distribution to disposal of material goods, and how those at the periphery of society tend to bear the direct costs of externalising the waste issue. Drawing upon environmental justice, this thesis presents a political ecology of Tibar dumpsite which elucidates how informal waste labour is valued within ‘sustainable’ policy decisions and processes, (and, to a lesser extent, the contemporary role of international development agencies) in the context of a post-conflict, Independent Timor-Leste.

1.1.1 THE IMPACTS OF WASTE

The negative environmental impacts associated with poorly managed solid waste are widespread and often, though not exclusively, immediately visible. Solid waste constitutes a considerable 5% of global greenhouse gas emissions (Kaza et al., 2018), where 97% of urban solid waste emissions are attributed to methane and carbon dioxide emissions from burning or decomposing waste at disposal sites (such as dumpsites and landfills), with the remainder of emissions from waste collection and management machinery (Hoornweg & Bhada-Tata, 2012). Solid waste leads to biodiversity loss through damage to ecosystems and wildlife, in varying ways. For example, when mixed with remnants of decomposing waste water creates a contaminated liquid (leachate) which infiltrates and pollutes groundwater systems (Rushbrook, 2001). Litter, waste’s most visible form, physically pollutes air, land and water, where substances such as plastics can require centuries to decompose. As they degrade, plastics breakdown into microfibres, which infiltrate food-chains and ecosystems, the effects of which are of increasing public concern. If left uncollected, the build-up of solid waste in waterways causes flooding

and creates breeding grounds for rodents and insects - vectors of bacterial, viral and parasitic diseases (UN-HABITAT, 2010).

Not only does waste threaten ecosystems, but poorly managed waste poses significant public health risks, including but not limited to: respiratory illnesses (such as pulmonary disorders from the inhalation of particulate matter, bio-aerosols and volatile organic compounds); headaches, nausea and vomiting from exposure to methane, carbon monoxide and carbon dioxide emissions; infectious disease such as diarrhoea, spread of dengue fever; and where hazardous waste are present in general waste, direct contact to critical compounds can cause cancer, birth defects, and metabolic organ failure (Hoornweg & Bhada-Tata, 2012; UN-HABITAT, 2010; Kaza et al., 2018).

SWM is inherently linked to government authorities' abilities to safeguard human and environmental health, and is indicative of authorities' abilities to provide other public services such as health, education and transportation (Hoornweg and Bhada-Tata, 2012). Yet the incentive to improve SWM outcomes extends beyond environmental and social elements alone; poorly managed waste has significant economic implications resulting from the aforementioned social and environmental impacts in addition to direct economic impacts on industries such as tourism (Kaza et al., 2018), which are reliant on 'clean' environments. Solid waste is a largely visible issue – physically polluted beaches, plastic bags caught in trees or other natural and public areas are considered an eyesore. Indeed, images portraying the contrast of litter and pristine environments are the 'face' of the waste issue. Economic drivers such as tourism therefore provide further impetus for improving SWM in countries seeking to grow their tourism sector, like Timor-Leste, where tourism is identified as one of the five Priority Sectors for growth and economic diversification (Government of Timor-Leste [GoTL], 2017).

1.1.2 THE UNEQUAL IMPACTS OF WASTE

While waste is certainly a global issue, the costs of waste (and inadequate SWM) are not evenly distributed throughout society. At the international level, the negative implications of waste are particularly salient in low- to middle-income countries (LMICs), where solid waste management is the highest single budget item for local authorities in low-income countries, averaging 20% of municipal budgets, and 10% of municipal budgets in middle-income countries (Kaza et al., 2018). More locally, the urban poor are typically the ones who bear the costs of inadequate SWM (Hoornweg & Bhada-Tata, 2012; Martuzzi et al., 2010). Informal or low-income urban areas are generally neglected by formal waste collection services due to limited political influence, perceived social stigma, inaccessibility, or crime (Kubanza & Simatele, 2016; Kaza et al., 2018). The impacts of this inequality in SWM service provision is exemplified by comparative health statistics; residents of poorer neighbourhoods lacking adequate SWM services are six times more likely to suffer from acute

respiratory disease and twice as likely to have diarrhoea than residents in more affluent areas with adequate SWM services (UN-HABITAT, 2010).

Waste sector workers have much higher exposures to waste-related health risks than the general public – for instance, waste workers’ risk of parasites and infection is three to six times higher than that of the baseline population (UN-HABITAT, 2010). In directly managing solid waste, waste workers are additionally exposed to occupational hazards, such as: injury from direct contact with heavy machinery (such as waste trucks or loaders); wounds from exposed needles, glass and metals (which can lead to further infections such as tetanus, hepatitis or HIV); hearing impairment from proximity to heavy machinery; dehydration and heatstroke from prolonged exposure to sun; fatigue and chronic or acute back and joint injuries from heavy lifting, among other causes of stress (UN-HABITAT, 2010). Informal waste-pickers are acutely susceptible to these hazards and risks as they work (and often live) in more dangerous and unregulated waste environments, with little-to-no protective gear or health and safety protocol (as would be typically provided by the formal sector). As an alarming example of the acute health impacts for informal waste workers, Mexico City’s waste-pickers’ average life expectancy is twenty-eight years shorter than that of the general population (Medina, 2000).

Inadequate SWM significantly impacts society at large, yet informal waste-pickers - who, in many developing contexts, are central to SWM operations - are acutely at risk, and are directly bearing the costs of inadequate SWM. The stark health implications of waste-picking (identified above) epitomise the intimate entanglement of rubbish and waste-pickers’ lives. Yet this entanglement goes beyond health impacts alone. As I argue throughout this thesis, waste-pickers have a complicated relationship with waste: it presents livelihood opportunities (where waste-pickers provide waste labour often in the absence of formal services), and, due to the intimate nature of their work with waste, waste-pickers are subject to social stigmatisation of being ‘dirty’ or ‘poor’ - waste inherently forms part of waste-pickers’ identities. The socio-political intersections of waste and waste-picking have been increasingly documented and explored by critical geographers, sociologists and anthropologists alike. Notably, in his research on the formalisation of waste-picking in Uruguay, O’Hare (2017) explores the notion that ‘rubbish belongs to the poor’, and argues that it is not the presence of waste that threatens waste-pickers’ lives, but the absence of it. Accordingly, my research is not only concerned with improving waste-pickers’ health outcomes, but how their livelihoods may be able to be safeguarded within formal SWM improvements. Drawing upon the timely case study of a proposed dumpsite-to-landfill upgrade in Tibar, Timor-Leste, this thesis further explores the ways in which dominant

perceptions of informal waste labourers may influence their inclusion within the decision-making processes for plans which will profoundly impact their lives.

1.2 INTRODUCING TIBAR DUMPSITE

1.2.1 RESEARCH CONTEXT

I have been interested in solid waste management for some time now, in 2016 I began working as a Resource Recovery Officer at the Wellington City Council's Southern Landfill, tucked into the hills between Owhiro Bay and Brooklyn. In 2017 I visited my parents who were then living in Dili, Timor-Leste. During this trip I had the opportunity to visit the local waste disposal site, along with some of my mum's colleagues who were going to investigate a green-waste composting facility nearby. Naturally, I was curious to see how Dili dealt with their waste. I had seen some sobering images of open dumpsites before, but these hadn't prepared me for the reality that greeted me when I stepped out of the safety of an airconditioned 4WD and into Tibar dumpsite. The smoke bites at your eyes and the acrid smell of burning rubbish loiters in your clothes, hair, and nostrils long after leaving the site. The dumpsite is acutely exposed to the baking heat of the sun, not to mention the heat emanating from the open fires onsite. Despite all this, there were many, many people of all ages onsite: kids playing, elderly ladies carrying sacks of cans on their backs, others sheltering from the heat under some corrugated iron propped up by steel drums. Our cohort stayed no longer than ten minutes. Driving back to Dili, what struck me the most was not the affronting and hazardous conditions that people were exposed to, but that what they were doing was effectively 'resource recovery' - one of the central elements of waste minimisation. For example, back at the Southern Landfill in Wellington, we aim to reduce our annual 'waste-to-landfill' figures. In this sense, our roles are very similar: I pick through unwanted goods at the recycling centre, and people at Tibar are recovering unwanted resources. Yet the contexts and environments within which we work couldn't be more different. What sets 'waste-picker' apart from 'Resource Recovery Officer'?

1.2.2 TIBAR'S DUMPSITE-TO-LANDFILL UPGRADE

An estimated 70 people work as waste-pickers on Tibar dumpsite, about twenty minutes' drive from Dili, the capital of Timor-Leste. Their primary occupation is resource recovery, through burning waste to expose resources with a recyclable market value (e.g. scrap metals such as aluminium and tin) which they are able to on-sell to metal dealers (Asian Development Bank [ADB], 2014). Tibar dumpsite lacks formal management and environmental protection measures, and open burning is a central element of the current disposal approach (ADB, 2014; ADB, 2017; Magno de Côrte-Real Araújo et al., 2015). All waste going to Tibar is mixed, meaning that hazardous waste (such as batteries, chemical and hospital waste) is comingled with household waste (mostly organics, plastics, cardboard and green-waste).

This presents significant hazards for both waste-pickers and the wider Tibar community (of approximately 2500 residents) (ADB, 2017; Magno de Côrte-Real Araújo et al., 2015; ADB, 2014). Though specific quantitative data on the environmental and human health hazards within the Tibar dumpsite context are lacking, the impetus to shift away from uncontrolled dumping remains.

In order to address the environmental and human health hazards posed by Tibar dumpsite and wider issues with Dili's SWM, the Asian Development Bank (ADB) provided technical assistance to the Government of Timor-Leste (GoTL) in 2015 through the Dili Solid Waste Management and Investment Plan. The aim of the advice was to develop an investment strategy to meet Dili's water and sanitation needs from 2015 to 2030 (ADB, 2015).² The ADB's proposed SWM Strategy and Investment Plan was approved in October 2016 by the Council of Ministers (Government Resolution No. 32/2016). Alongside improvements to waste collection, such as installing modern rubbish receptacles and trucks, the policy establishes Government's intentions to develop Tibar dumpsite into a 'controlled landfill'. As detailed in the policy, this option was selected on the basis that it retains similar environmental and operational benefits of a sanitary landfill, "without the technical complexities of leachate treatment plants, and social dislocation of banning waste-pickers from the site" (GoTL, 2016, p. 8). Landfills have much greater environmental ratings than open dumpsites, yet waste-picking on landfills is often prohibited as it is hazardous for waste-pickers and disturbs landfill operations (Rushbrook, 2001; ADB, 2015). Simultaneously, prohibiting waste-picking on landfills risks livelihood displacement for waste-pickers (Semibiring & Nitivattananon, 2010; Paul et al., 2012). Providing alternative livelihoods is often offered as a solution to economic displacement (Wright et al., 2015), however, attempts elsewhere to find alternative sources of income for waste-pickers have previously resulted in unsustainable and worsened livelihood outcomes (O'Hare, 2016; Semibiring & Nitivattananon, 2010).

1.3 SUSTAINABLE DEVELOPMENT: BETWEEN SOCIAL AND ENVIRONMENTAL PROGRESS

In attempting to balance social and environmental wellbeing, the proposed Tibar upgrade reflects broader discourses about sustainable development. The term 'sustainable development' is attributed to the 1987 Brundtland report definition of "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987, part IV), which rests on the mutual progression of the three pillars of sustainability: environmental,

² NB: this advice was developed at a time when the GoTL had agreed for to the development of a solid waste-to-energy plasma plant (incinerator) which planned to accommodate all of Dili's waste. The GoTL were therefore pursuing the ADB's SWM Investment Plan as scoping for alternative waste management approaches (ADB, 2015).

social, and economic. The United Nations (UN), among other government and non-governmental organisations, have since widely adopted sustainable development as a guiding principle for societal progress (see: UN, 2020). Applied to this thesis, sustainable development signals a potential tension between social and environmental aims in the decision-making and management of dumpsite-to-landfill transitions: safeguarding waste-pickers' livelihoods while seeking environmental improvements to SWM disposal. This tension can be reflected in government policy and legislation, where laws recognise and support waste-pickers' livelihoods, meanwhile environmental sustainability directives support the development of sanitary landfills (Paul et al., 2012).

While this tension presents difficulties for decision-makers, expanding how 'sustainability' is conceptualised establishes that it need not be trade-off between social and environmental progress. As supported by a postcolonial epistemology (detailed in Chapter 3), any discussion of ecological sustainability must recognise that Indigenous communities have been practicing 'sustainability' for millennia (Shilling, 2018), and that recent global concern about exceeding ecosystems' carrying capacities (such as anthropogenic climate change) have largely emerged from the globalised spread of industrial western practices. Sustainable development's notion of segregating the environmental/economic/social spheres into three discrete pillars follows a Eurocentric approach; whereas many Indigenous cultures and subsistence societies perceive the environmental as deeply connected to the personal or socio-cultural realm (Shilling, 2018). Environmental and social (and indeed, economic) outcomes are not mutually exclusive. My research therefore adopts the normative aim that favourable waste-picker outcomes can and *must* be achieved while seeking environmental improvements to Dili's solid waste disposal system.

1.4 THEORETICAL APPROACH AND AIMS: JUSTICE AND WASTE POLITICS

At the most fundamental level, the purpose of my research is to determine whether waste-pickers' desired outcomes are being accounted for within the process and outcomes of Tibar's dumpsite-to-landfill upgrade. To build the normative case(s) of what this justice might look like, I draw on critical geographies: environmental justice and political ecology. Environmental justice presents a framework with which to identify and criticise the distributive injustices associated with poor solid waste management and establishes the normative basis that waste-pickers are disproportionately bearing the costs of the waste issue and therefore must be included within the dumpsite-to-landfill upgrade process. This justice lens is supported by wider iterations of social justice and inclusion, which help unpack the ways in which identity and power influence the outcomes sought (and reached) by decision-makers. Broadening this theoretical approach to include political ecology enables my

research to analyse and critique wider elements at play in the intersection of waste and justice, such as capitalism.

1.4.1 WASTE: A BY-PRODUCT OF CAPITALISM

Political ecology is attentive to wider systems and structures that generate environmental issues (Robbins, 2012). As a body of work, it draws on Marxism, post-structuralism, feminism and post-colonialism to unpick uneven power relations and envision more just futures. There is a significant body of political ecology literature that examines waste, and the multifaceted connections between waste and political or economic systems (Gregson & Crang, 2010; Harvey, 2014; Hawkins, 2003). Waste is inextricably linked to economic growth and, to a lesser extent, industrialisation and urbanisation. It is not necessarily attributed to increasing urban populations alone: indeed, not every person produces the same amount of waste. Rather, waste generation is attributed to relative wealth and the behavioural consumption patterns associated with the middle- and upper-classes. Rising income typically equates to a rise of the middle-class, which brings with it rising standards of living (and greater purchasing power) - which leads to an increased demand for and consumption of material goods and, inevitably, the subsequent disposal of those goods when they are no longer 'useful' or 'desirable' (Beede & Bloom, 1995; Hoornweg & Bhada-Tata, 2012; Kaza et al., 2018). It follows that high-income 'industrial' countries account for a disproportionately high share of global solid waste relative to their population, whereas developing LMICs account for a disproportionately high share of global solid waste generation relative to their share in global income (Beede & Bloom, 1995). This international inequality illustrates the intrinsic economic characteristics of solid waste generation and, as I will argue throughout this thesis, the correlation between waste and economic growth which, under capitalism, is epitomised by the unequal distribution of the costs (and benefits) of material consumption.

In order to understand how such costs manifest and, more importantly, how they might be avoided, it is necessary to broaden my analysis of Tiba's dumpsite upgrade beyond a standard policy analysis of weighted costs and benefits. Waste in academia is predominantly treated as apolitical, focused on metrics and tonnages and how these shape policy decisions and waste management approaches, with particular attention given to waste treatment (disposal), or resource recovery (recycling, reuse and remanufacture) (Gregson & Crang, 2010). Indeed, my research is inherently tied to SWM policy implications and interventions, while extending how waste is conceptualised elucidates deeper layers of social analysis, in line with the justice grounding of this research. This thesis therefore approaches waste as a deeply political space in which relates waste-picker identities, decision-maker perceptions of waste-pickers, and the processes through which decisions are made and power is enacted between these groups.

Using materiality as a lens, waste is not simply conceived as fixed “stuff that is being governed, or that which is the outcome of policy” (Gregson & Crang, 2010, p. 3); the object of ‘waste’ is reframed from an inert ‘bad’ thing, to a political object, with changing meaning. Harvey (2014) exemplifies this through the ‘transformative duality’ of waste materials: on the one hand, they represent monetary potential and profit (through waste-to-energy, resource recovery, or recycling) while on the other they can present toxic hazards. Harvey further demonstrates how infrastructural reform (i.e. significant changes to SWM infrastructure, such as a dumpsite upgrade) presents a politicised space for action (and analysis) of the interrelationships between state responsibility (to provide adequate SWM services and safeguard livelihoods) and realising the economic potential of waste. This brings in wider questions regarding the role of capitalism in public decision-making, as capitalist economies are heavily reliant on linear models of resource extraction, consumption, and the subsequent disposal of goods. Capitalism rests on the very premise of extracting value from labour and natural resources, and financially benefiting off this value in the form of profit, while many of the costs are externalised. As Martinez-Alier et al. (2014, p. 27) write, capitalism “is [based on] an entropic economy that shifts costs to poor people, to future generations and onto other species”. The interface of capitalism and waste is further explored in section 3.4.1. Through the case-study of Tibar’s dumpsite-to-landfill infrastructural upgrade, this thesis explores what these costs are, who bears them, and how they are shifted to society’s margins.

1.5 RESEARCH QUESTIONS, APPROACH, AND STRUCTURE

Given the pressing relevance of the Tibar dumpsite-to-landfill upgrade, within the context of the preceding discussions on safeguarding livelihoods, my research focuses on the risk of Tibar’s waste-pickers’ social dislocation, both physical and economic, and how decision-makers navigate this tension in attaining broader environmental outcomes for SWM disposal. I explore this through asking: how does the dumpsite-to-landfill proposal address issues of social justice for Tibar’s waste pickers? And what are the enabling and preventative factors in attaining just processes and outcomes for Tibar’s waste-pickers?

This research aims to contribute towards waste literature in Timor-Leste, as well as to the literature documenting the social inclusion of waste-pickers within dumpsite-to-landfill transitions. To do this, I will explore the intersections of waste and politics, reframing waste as politically-charged, rather than inert material that is simply ‘managed’; and demonstrate how environmental justice and political ecology can be used together to strengthen socio-environmental analyses.

This thesis is presented as follows: chapter two explores the key guiding frameworks and principles of contemporary solid waste management, and elaborates on the typologies of waste disposal. I then situate my research in the post-colonial Timor-Leste context, and detail the ADB's proposed dumpsite-to-landfill upgrade of Tibar dumpsite. Chapter three presents the literature used to guide my research, and explores research questions four and five – specifically, what does justice look like, and how is it 'met'? In answering this, I draw upon critical theory and broader iterations of social justice. Chapter four outlines the postcolonial transformative research approach, and describes and justifies a qualitative case study of Tibar dumpsite, semi-structured interviews with key stakeholders involved in the upgrade, and thematic analysis. Chapter five details the case study of Tibar dumpsite and establishes the application of environmental justice. Chapter six discusses the upgrade plan, what is actually planned for waste-pickers' inclusion, and presents a procedural justice analysis. Chapter seven discusses the implications of this waste-picker inclusion against 'just' outcomes, and explores the barriers and enabling factors for attaining these within the Tibar context.

CHAPTER TWO

CONTEMPORARY APPROACHES TO SOLID WASTE MANAGEMENT, AND INTRODUCING TIBAR DUMPSITE AND A POST-COLONIAL TIMOR-LESTE

This chapter outlines the contemporary approaches to solid waste disposal management; including the basic formalised SWM process and widely accepted SWM policy principles/aims (i.e. waste minimisation), and justifies a research focus on waste disposal. I then situate this research in Tibar dumpsite and within the wider context of Timor-Leste, and present a preliminary description of the SWM process in Dili to identify some similarities and differences between Dili's SWM and 'best practice'. The chapter concludes by presenting the proposed dumpsite-to-landfill upgrade for Tibar.

2.1 SOLID WASTE MANAGEMENT: BETWEEN MINIMISATION AND DISPOSAL

Akin to material and resource flows (as alluded to by Martinez-Alier et al., [2014] in chapter one), the formal SWM process (Figure 2) generally follows a similarly linear model: waste is generated, separated into waste streams (for example, general rubbish, plastic, cans, cardboard and paper, and so on) then collected, usually by local authorities or private collection, perhaps re-sorted (depending on the collection system) and prepared for domestic or international recycling markets. What cannot be recycled, progresses down for energy recovery³ (such as waste-to- incineration), before final disposal. Figure 2 presents the flow-on relationship between each SWM stage; essentially, the more efficient the separation and collection of waste streams the greater the potential for improved outcomes further down the line.



FIGURE 2: BASIC SOLID WASTE MANAGEMENT PROCESS

Source: author's own

Note: the order of these steps will vary markedly depending on each SWM context

The aims of contemporary SWM are established through the waste hierarchy (Figure 3), which, together with the notion of the circular economy, is widely used to guide policy and legislation (see: European Union, 2008; Controller and Auditor-General [New Zealand], 2007). The circular economy seeks to 'close the loop' of the linear economic model through increased innovation in resource recovery and recycling and principles such as extended producer responsibility (Ellen MacArthur Foundation, 2020), and is gaining increasing popularity (e.g. see: Ministry for the Environment, 2018;

³ NB: this 'recovery' element can refer to both energy recovery such as waste-to-energy, or resource recovery – reclaiming recyclable/reusable materials from the waste stream.

European Commission, 2020). The circular economy builds upon the underlying principle of the waste hierarchy- to prioritise waste minimisation over waste disposal; reducing the amount of waste at source inevitably reduces the negative impacts and costs associated with waste down the line. Similarly, increased waste minimisation represents greater resource conservation, whereas more reliance on disposal represents less conservation of resources (Ministry for the Environment, 2009). Reuse, recycling and recovery activities are considered preferable to disposal, which represents 'waste' in its truest form.

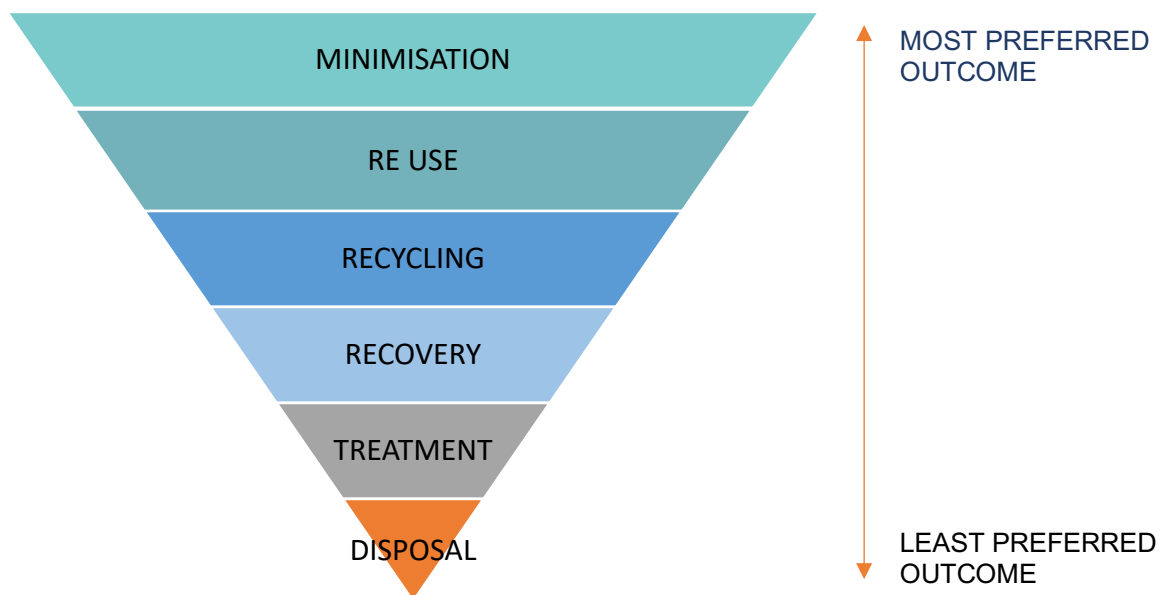


FIGURE 3: WASTE MANAGEMENT HEIRARCHY

Adapted from: European Union. (2008). Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. *Official Journal of the European Union* (L312/3).

Both the waste hierarchy and the basic solid waste management process demonstrate the interdependency of each SWM element: the value of the whole system is ultimately reliant on the relationship of its parts. For instance, when glass is separated from cardboard, the recycling potential of each of these materials increases, as the risk of source contamination is reduced; some cardboard processing plants are able to filter out contaminants such as glass, while others are not. This 'systems' approach to SWM is highlighted in recent movements towards integrated sustainable waste management, which maintains that the success of any improvements to any SWM system is influenced by and influences how that change fits within (and alters) the wider system, rather than just the single, discrete SWM element (Rodic et al., 2010; Wilson et al., 2013).

In practice, SWM does not align with such a linear process depicted by Figure 2. SWM is inherently complex and contextually-situated; the ways in which waste is collected, sorted, recycled, and disposed of varies widely, depending on the specific capacities and waste profiles of any given city, region or state; it follows that there is no ‘one-size-fits-all’ waste management solution. What may prove successful in high-income contexts is not necessarily applicable in LMIC contexts, attributed to: the differing waste behaviours, streams, and volumes; the significant financial investment required for technologically-developed (and dependent) SWM elements; and the specific social/cultural/political context (Wilson et al., 2013). Instead, LMICs require strong, participatory, contextually grounded, and adaptive SWM systems (Marshall & Farahbakhsh, 2013). There is therefore a second aspect of integrated SWM approaches *beyond* systems thinking, concerned with the integration of “technical systems and the unpredictable force of social relations” (Harvey, 2014, p. 64). Through a study of Tibar dumpsite, this thesis seeks to elucidate some of ‘unpredictable social relations’ at play within the development and implementation of proposed technical improvements to Dili’s solid waste disposal.

While recognising the importance of perceiving each SWM system as a whole, and maintaining that the ‘best’ approach to tackling the global waste issue is to minimise waste at source, this thesis is focused on the disposal element of Dili’s SWM for several reasons. Waste minimisation objectives are arguably more attainable in high-income countries, where national and municipal budgets have the capital to invest in waste minimisation, whereas, in LMICs, municipalities tend to prioritise resources in the more tangible issues of waste collection and disposal (Wilson et al., 2013). Yet disposal remains an inevitable aspect of any SWM system, regardless of how developed⁴ a city’s SWM system may be. Indeed, most of the negative impacts associated with poor SWM (as outlined in chapter one) are attributed to inadequate collection and disposal (UN-HABITAT, 2010). Further, in SWM systems with limited waste-stream sorting and/or recycling capabilities, most resources that otherwise might have been recycled or reused are sent directly to disposal facilities. Given the inevitability of disposal within any SWM system, and the particular importance of disposal for municipal SWM systems in LMICs, disposal management is the focus area for my research.

2.1.1 A TYPOLOGY FOR SOLID WASTE DISPOSAL

Open dumpsites are the most prevalent form of waste disposal in the world, and are most common in LMICs (Hoornweg & Bhada-Tata, 2012; Rushbrook, 2001): 33% of global solid waste is disposed of

⁴ For example, even high-tech, low-emission waste-to-energy incinerators produce a toxic by-product or ‘bottom ash’ which ultimately requires disposal.

in open dumps (Kaza et al., 2018)⁵. An open dumpsite is typified by the unregulated disposal of mixed waste, including: household waste, green (or garden) waste, construction and demolition waste, and hazardous waste (hospital waste, batteries, etc.) (Rushbrook, 2001). As a result of these mixed waste streams, the human and environmental health impacts of dumpsites are acutely hazardous, particularly the toxic smoke from open fires (UNEP, 2006; UN-HABITAT, 2010). In recovering (exposing) scrap metals, waste-pickers burn through these mixed and potentially hazardous materials, releasing greenhouse gases, particulate matter, reactive trace gases and toxic compounds (Wiedinmyer et al., 2014). Burning common plastics such as polyvinyl chloride (PVC) and brominated flame retardants (BFMs) create harmful particulate matter and carcinogenic dioxins (Schmidt, 2002). Therefore, “it is imperative that these open dumpsites be closed as soon as practical” (United Nations Environment Programme (UNEP), 2006, p. x).

In a report for the World Health Organisation, Rushbrook (2001) identifies a widely recognised four-stage development pathway for waste disposal (depicted in Figure 4), from open-dumping to full, sanitary landfill operations. This pathway presents a disposal hierarchy, where each stage improves upon the last, regarding operational safety and environmental impact. Rushbrook’s typology represents the widely held assumption that a landfill is indeed preferable to a dumpsite; the more controlled or engineered a disposal site, the lesser the environmental impact and health risks.



FIGURE 4: WASTE DISPOSAL OPTIONS

Adapted from Rushbrook, P. (2001). Guidance on minimum approaches for improvements to existing municipal waste dumpsites. WHO Regional Office for Europe.

Within Rushbrook’s typology, open dumpsites ought to be closed and subsequently remediated to controlled dumpsites. Controlled dumpsites are characterised by the introduction of: soil cover; simple surface water diversion routes; prohibition of the burning of new fires, and established rules among site workers, truckdrivers and waste-pickers. This approach is easily practicable in LMICs as these changes are generally low cost and quick to implement (Rushbrook, 2001). Next in the hierarchy is engineered landfilling, where waste disposal practices are planned prior to construction or

⁵ Which is particularly salient given the majority (~34%) of global waste is produced by high-income countries – 40% of global solid waste is disposed in landfills (Kaza et al., 2018).

expansion of the disposal site and engineering techniques are used to achieve objectives such as: separating the solid waste from the surrounding geological environment (installing a clay or plastic liner to prevent contamination); collection, removal, and treatment of leachate; and/or passive venting of landfill gases (methane and carbon dioxide). This stage is presented as the longest and most challenging transition, as significant operational and technical expertise are required to implement and re-engineer a landfill from a dumpsite (Rushbrook, 2001). The final stage is sanitary landfilling, common in most high-income countries and an extension of engineered landfills, which require ongoing refinement or addition of engineering techniques, including: landfill gas control and utilisation facilities (methane and carbon dioxide collection and energy conversion); increased environmental monitoring and protection; on-site leachate treatment facilities (in addition to collection); and specialised mechanical equipment (Rushbrook, 2001).

Within this thesis, Rushbrook's disposal typology presents the basis from which the dumpsite-to-landfill is considered as an upgrade by government officials and relevant international organisations, such as the ADB, who presented the upgrade proposal to the Timorese Government. Before detailing the proposed disposal upgrade, it is necessary to first situate this research in the wider physical and socio-political landscape that is the Independent, post-colonial, Timor-Leste.

2.2 INTRODUCING THE CASE-STUDY: WASTE IN TIMOR-LESTE

2.2.1 TIMOR-LESTE CONTEXT

Timor-Leste (East Timor) is located on the cusp of South-East Asia and the Pacific, 700 kilometres north-west of Darwin, Australia, and 2500 kilometres south of the Philippines. Timor-Leste has a deep, recent, colonised history. European traders and missionaries began arriving in Timor in the early 16th century and Portuguese missionaries spread Catholicism throughout Timor in the later 16th century (GoTL, 2020) – the beginnings of Portuguese colonial rule. By the mid-17th century, the Dutch invaded western Timor and established the East/West divide that is Indonesian Timor and the Independent Timor-Leste of today (GoTL, 2020) (pictured in Figure 5).

IMAGE AVAILABLE AT:
<https://thesharksvie.com/2019/01/21/timor-leste-what-east-timor-who-2/>

[REDACTED] FIGURE 5: MAP DEPICTING THE DIVIDE OF EAST(INDONESIAN) AND WEST(INDEPENDENT) TIMOR

Rand McNally. (2020). From The Shark's View [blog]: <https://thesharksvie.com/2019/01/21/timor-leste-what-east-timor-who-2/>

Following the Portuguese revolution and subsequent vote for all Portuguese colonies' rights to self-determination, Portugal withdrew from Timor-Leste in 1975 (GoTL, 2020). In the power-vacuum that followed, civil war soon broke out between the newly formed government coalition while, almost simultaneously, Indonesian militia invaded:

[...] on the pretext of protecting its citizens in Timorese territory ... declaring all of the island as its 27th province, renaming it Timor Timur. Indonesia was given the tacit support of the American Government, which saw FRETILIN [then the main Timorese political party] as a Marxist organisation. (GoTL, 2020, para. 10)

Decades of violent occupation ensued (see Dunn, 2003) and, having officially declared independence from Indonesia in 2002, the Democratic Republic of Timor-Leste is one of the newest countries in the world. In the following eighteen years, Timor-Leste has been faced with the task of rebuilding, and in some instances establishing, its public infrastructure and institutional frameworks.

Seventy percent of Timor-Leste's total 1.3 million population live rurally (UN Data, 2020), although the rate of urbanisation is growing as more young people move to urban centres, which is particularly significant given Timor-Leste's proportionately young population (see: UN Data, 2020, 'social

indicators'). At 0.14 kilograms per capita per day, Timor-Leste generates the least waste in the East Asia and Pacific region (Kaza et al., 2018); the majority of which comes from the capital city, Dili. The ADB (2017) estimates that Dili alone produces 120 tonnes of solid waste per day. Based on the World Bank's estimate, the average Timorese person produces 51.1 kilograms annually, which is in stark comparison to Aotearoa New Zealand's annual 781.1 kilograms per capita: the highest among all OECD member-states (OECD, 2017). Timor-Leste's comparatively low waste generation can be attributed to their recently gained Independence; Gross Domestic Product and goods consumption has only recently begun to rise as the Government and Timorese peoples are growing their economic independence after decades of Indonesian military rule, and centuries of Portuguese rule. Following the base correlation of waste, income and urbanisation (outlined at the beginning of this chapter), Timor-Leste's consumption and subsequent waste generation is projected to grow in the coming decades (ADB, 2017). There are no sanitary landfills in Timor-Leste (ADB, 2017), and Dili is one of two municipalities in Timor-Leste with a formal, organised SWM system (Magno de Côte-Real Araújo et al., 2015)⁶. Elsewhere, solid waste management services are even more rudimentary; household common practice is either to bury waste in local land, throw it in the river, or burn it. Many beaches and waterways near villages and town centres are scattered with litter, with rubbish causing observable river flooding in the rainy season. Although current waste generation in Timor-Leste is relatively low, existing SWM services are very rudimentary and waste is widely identified as a significant challenge for Timor-Leste (ADB, 2017; GoTL, 2016; Magno de Côte-Real Araújo et al., 2015; ADB, 2014; Ximenes da Costa & Carvalho de Jesus, 2018). The Timorese Government has a time-limited opportunity to invest in robust waste management services and systems before the issue escalates in the capital, and elsewhere throughout Timor-Leste.

2.2.2 SOLID WASTE MANAGEMENT IN DILI

Dili's existing SWM process begins with households disposing their waste into community collection points - concrete or brick-and-mortar receptacles or *bak sampah*. Within Dili there are a total of 337 recorded *bak sampah*, distributed in each *suco* (neighbourhood) (ADB, 2014). Approximately 30 waste *tigaroda* (collection trucks) are administered by the municipal government (Dili District Administration [DDA] or Dili Municipality) to collect rubbish from *bak sampah* and transport it 25 kilometres west of Dili to Tibar dumpsite (ADB, 2014), located in the neighbouring Liquica District. Tibar dumpsite was established in 1982 (Magno de Côte-Real Araújo et al., 2015; ADB, 2014), some seven years into Indonesian occupation.

⁶ During my time in Dili, I had heard reports that Oecussi (a Timorese municipality located in West Timor) has a very efficient, privatised SWM system.

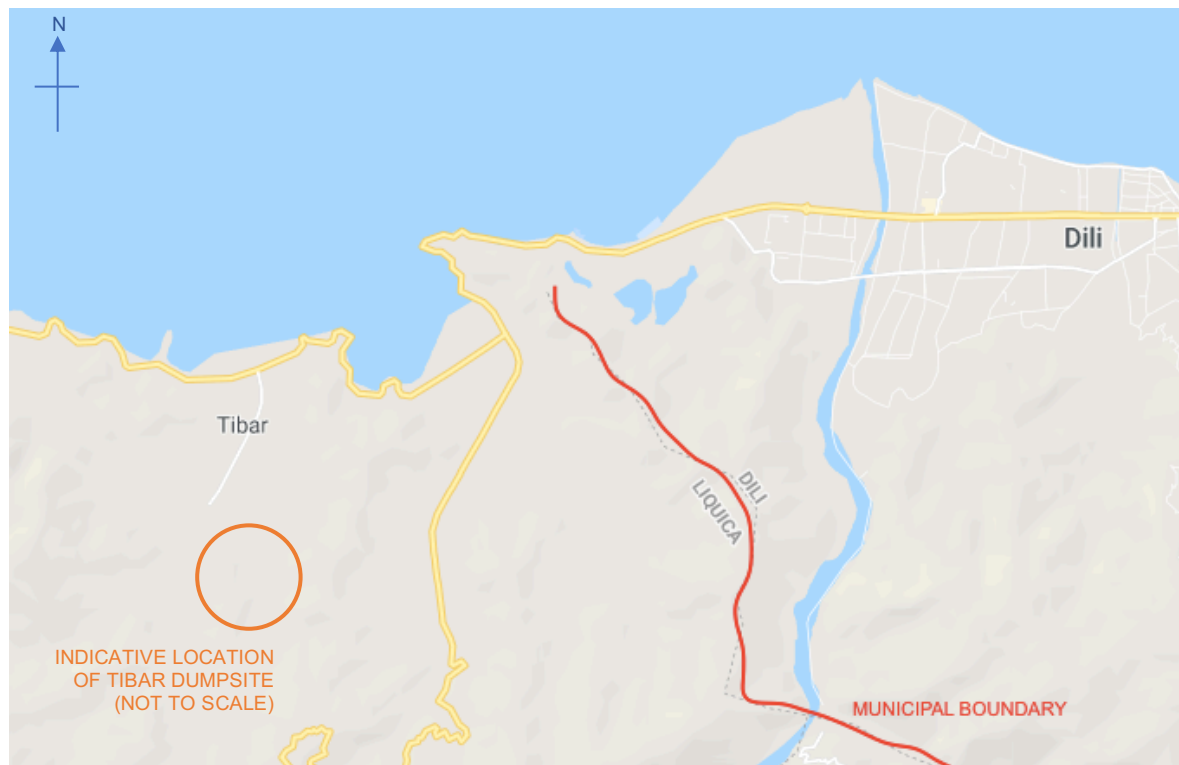


FIGURE 6: MAP DEPICTING MUNICIPAL BOUNDARY BETWEEN DILI AND LIQUICA

Adapted from: Google. (2020). <https://www.google.com/maps/@-8.5630039,125.4986389,12.49z>. Copyright Google Map Data 2020.

Though the dumpsite is physically located in Tibar, Liquica (pictured in Figure 6), nearly all waste entering the dumpsite originates from Dili's urban centre (ADB, 2015), therefore Dili Municipality is primarily responsible for the management of Tibar dumpsite. Within the Government of Timor-Leste's governance structure, the Dili Municipality authority sits under the Ministry of State Administration, with Dili Municipality as the implementing body for solid waste management and the Ministry of State Administration providing wider policy direction (ADB, 2014). At the dumpsite itself, Dili Municipality employs a site manager to record the incoming waste vehicles, and drivers to operate the 2 bulldozers used for shifting waste shifting waste into allocated disposal zones (ADB, 2014; ADB, 2015).

Given the above, Tibar dumpsite is more adequately described as a 'semi-controlled dumpsite' rather than a wholly 'open' one, following Rushbrook's (2001) criteria. The ADB (2015) reports that the management of Tibar dumpsite is comparably better than many other dumpsites found in similarly sized cities within the South-East Asia. Nevertheless, overall disposal management at Tibar dumpsite is insufficient as it lacks basic environmental and human health protection measures (such as stormwater management, liners, or leachate collection systems) and the constant open fires present an ongoing human and environmental health hazard (ADB, 2014; ADB, 2015; ADB, 2017; Magno de

Côrte-Real Araújo et al., 2015). Combined with the dumpsite's location near to a rapidly developing township, there is therefore impetus for the immediate closure or remediation of Tibar dumpsite.

2.2.3 DETAILING THE PROPOSED UPGRADE OF TIBAR DUMPSITE

In line with Rushbrook's (2001) recommendations, the ADB's (2015) report on SWM in Dili details that Tibar dumpsite must first be remediated; all burning waste will be dowsed with water, cooled, then stockpiled to make way for site development. The Government Resolution (32/2016), effectively approving the ADB's proposal, details that the 'controlled landfill' will develop in stages. Based off the existing site, the landfill will have a 20-year capacity. If the landfill is developed to fill in the space between the existing site and surrounding valley, it is anticipated to have capacity until 2100. The site is planned to be developed in stages, each stage will be excavated 5 metres deep to provide sufficient inert soil to cover ('fill') the waste. Following Rushbrook's 'engineered' category, the disposal site will be lined with a clay or artificial liner, to prevent leachate seeping into the surrounding earth and groundwater systems, and leachate collection and pumping systems will be included as part of the ADB's plan. However, landfill gas (methane) collection systems are not considered commercially viable for the site given the relatively small amount of waste produced in Timor-Leste. In addition, the site will have a storm-water drainage system, a weighbridge, and will be fully fenced.

With the impending upgrade to a controlled landfill, a tension exists between local authorities' ability to safeguard waste-pickers' livelihoods, while enabling cost-effective technological, operational, and environmental improvements to Dili's waste disposal management. Waste-picking on landfills disturbs operations and is hazardous for pickers due to the presence of heavy machinery required to maintain the landfill (see: Rushbrook, 2001). However, prohibiting waste-picking on a landfill puts waste-picker livelihoods at risk and, as will be explored in the following section, wider waste literature suggests that waste-pickers are often physically and economically displaced as a result of the engineering work required for dumpsite to landfill transitions (Kaza et al., 2018; Medina, 2000; Wilson et al., 2006). That waste-pickers' outcomes have been included in the policy is promising, however, exactly *what* this inclusion looks like is not detailed. The following chapter explores the literature which guides how justice is theorised, which presents the framework for analysing justice within Tibar's dumpsite-to-landfill upgrade.

CHAPTER THREE

LITERATURE REVIEW: TOWARDS A POLITICAL ECOLOGY OF TIBAR DUMPSITE

Tibar's impending dumpsite-to-landfill upgrade raises issues of both environmental and social justice. Often, these issues are treated separately of one another. Such a separation is, however, artificial as these forms of justice, and injustice, are closely entwined. In order to examine justice in Tibar's dumpsite-to-landfill upgrade I use a political ecology approach which is deeply informed by critical theory. This chapter justifies the use of a political ecology theoretical framework, while recognising its intrinsic crossover with environmental and social justice. I first outline the critical postcolonial epistemological stance which guides the subsequent literature review. This epistemology justifies my research focus on social justice, while providing scope to critically examine the wider causes of such injustices. I then explore several iterations of justice and how these relate waste management. This discussion establishes the need for an intentionally political analysis of SWM issues.

3.1 A CRITICAL POSTCOLONIAL EPISTEMOLOGY

At its highest level, this research most closely aligns with critical theory (also referred to as critical social theory [Box, 2004; Ngwenyama, 1991; Tsibolane & Brown, 2016]). Born out of Marxism, and widely attributed to 1930s' theorists of the Frankfurt School, the basis of critical theory is to critique society's dominant power structures. Accordingly, there are many subsets of critical theory, and much debate surrounding the nuances between these subsets. Exploring critical theory is another thesis in itself: my research aligns most closely with critical social theory as articulated by Habermas and Horkheimer (see Held, 1980). Critical theory seeks to "actively critique the values embedded in dominant historical and social structures for the ultimate emancipation of marginalised groups" (Tsibolane & Brown, 2016, p. 8), through changing power relations (Held, 1980). Applied to the context of waste, critical theory establishes waste-pickers as a potentially marginalised group within SWM, and society at large, and helps elucidate the connections between waste and capitalism.

Multiple subsets of critical theory have emerged since the 1930s, such as queer, feminist, and postcolonial theories (Creswell, 2014). While all are applicable to this research, a postcolonial perspective is particularly relevant given Timor-Leste's very recent histories of colonisation, and their persistence into the present. The application of postcolonial theory to this research is twofold; it guides my approach to conducting the research, while also recognising the heightened marginalisation of Tibar waste-pickers within an already marginalised (colonised) Timor-Leste. Similarly to critical theory, there are multiple subsets of postcolonialism. This thesis most closely aligns with postcolonialism as articulated by the likes of Bhabha (1994), Said (1993), and Spivak (1988), where

postcolonialism is broadly understood as being critically cognisant of the lasting legacies of colonial histories, particularly concerning power relations, while seeking to improve the empowerment and futures of those marginalised by colonisation, or otherwise oppressed.

Bhabha (1994) explains that “the postcolonial perspective resists the attempt at holistic forms of social explanation” (p. 248) and, in doing so, places emphasis on *locally situated* rather than generalised understandings of colonisation which recognise that postcolonial states (and relationships between the “often opposed” ‘Third’ and ‘First’ worlds) are far more politically and culturally complex than meets the eye. In other words, while colonisation is certainly a form of oppression, it has far reaching cultural, political, and social implications which manifest in the present postcolonial or Independent state. The effects of colonisation last well beyond the colonisation period. Therefore, in order to understand power relations, the nuances of each postcolonial context must first be acknowledged.

3.1.1 POWER IN A POSTCOLONIAL TIMOR-LESTE

Building from the historical context presented in section 2.2.1, the manifestation of Portuguese and Indonesian colonisation in present-day Timor-Leste is certainly complex. The Indonesian occupation of Timor-Leste is globally recognised as an era of extreme violence and human rights violations including torture, mass murder and physical displacement (Dunn, 2003). Several Timorese that I spoke with when visiting Timor did not know what happened to their family members who went missing during the occupation. The estimated death toll during Indonesian occupation (1975 – 1999) ranges between 102,800 (+/- 12,000) (Commission for Reception, Truth, and Reconciliation in East Timor [CAVR], 2005) and 200,000 people (Dunn, 2003). In addition to missing family members, many Timorese experience ongoing trauma from the occupation (Silove et al., 2009). And yet contemporary Timorese identify with both Portuguese and Indonesian culture; for example, the common-parlance of Bahasa Indonesia, while expressing a form of ‘brotherhood’ camaraderie with Portugal (who came to Timor-Leste’s aid once the Indonesian occupation was highlighted internationally). In sum, Bhabha’s postcolonialism helps elucidate the legacies of colonisation in Timor-Leste, recognising these legacies are both convoluted and culturally embedded, and cannot be generalised as simply ‘good’ or ‘bad’.

My research recognises the Timorese Government as holding the most formalised decision-making power within the Tibar dumpsite-to-landfill process. However, a postcolonial perspective further highlights that the Timorese government has only been recently established, following centuries of Portuguese rule; Timor-Leste is an independent state, yet it is still growing its political and governance institutions and is arguably acutely susceptible to international political intervention. For example,

Portugal continues to exert power and maintain its political ties in Timor-Leste through foreign aid and actively supporting the requirement for Portuguese language to be used in Timor-Leste's political, legal, and educational systems (Correia De Almeida, 2015; Marriot, 2012). Meanwhile, numerous other states, notably Australia, are staking their territory in Timorese foreign affairs (see Davidson & Knaus, 2018, and Leach, 2019).

Yet another layer of a postcolonial analysis is at play: while government is establishing its institutions, Timorese people are simultaneously "seeking to rebuild the local and regional social and economic ties [...] grounded in the [historically repressed] norms and principles of local customs and traditions" in an immensely centralized state (Palmer & de Carvalho, 2008, p. 1321). Postcolonialism provides the theoretical scope to question the extent to which Timor-Leste's current development agenda and governance system enables the participation and inclusion of Indigenous Timorese perspectives and practices.

Adopting a critical postcolonial epistemology allows me to identify and situate the wider socio-political context within which the Tibar issue exists. However, a common critique of postcolonialism is that notions of postcolonialism can perpetuate narratives and power structures of colonialist rule (see: Jackson, 2020); through analysing or addressing colonisation one paradoxically gives power to the very thing they wish to dismantle. This critique is applicable to movements seeking to displace colonial governance, educational, or power structures (such as decolonisation), as well as academic researchers, like myself, conducting intentionally postcolonial research. Reconciling this critique within the context of this thesis, I draw upon Bhabha (1994) who explains the interaction of postcolonialism with notions of development, both in theory and in practice. Postcolonialism, Bhabha writes, "departs from the traditions of sociology of underdevelopment or 'dependency' theory. As a mode of analysis, it attempts to revise those nationalist or 'nativist' pedagogies that set up the relation of the Third World and First World in a binary structure of opposition" (1994, p. 248). In other words, postcolonialism establishes the postcolonial state as neither inside nor outside colonialism, but as an 'in-between' space where the "First" and "Third" worlds overlap, while still recognising the very real and lasting implications of colonisation. In this sense, postcolonialism helps navigate the crossover of Dili's SWM system (specifically the dumpsite-to-landfill proposal) with the interests of development partners (such as the ADB), while recognising the wider domestic and international power relations at play in Independent Timor-Leste.

3.1.2 POSTCOLONIALISM, DEVELOPMENT, AND AID

An example of Bhabha's 'in-between' space is the contemporary context of foreign development aid, and the political implications of such aid (an example being the aforementioned Portuguese

educational aid [see Correia De Almeida, 2015]). The dependency theory which Bhabha mentions establishes an unequal relationship between developed (rich) and developing (relatively poorer) states, whereby richer nations enjoy economic development from extracting resource and capital from their poorer counterparts. Dependency theory emerged in the 1950s as a response to the then prevailing development theory of modernisation, which upheld a linear trajectory of development that assumed that poorer countries were less-developed than their richer counterparts, and that through growing economies poorer countries would one day reach the same status as 'developed' ones (Kabonga, 2017). In response, dependency theory identified the power imbalances between the developing/developed: where the continual development of rich nations is dependent on exploiting poorer ones - this exploitation being enabled by colonisation and capitalism (Warf, 2001).

One of dependency theory's most significant critiques was of the foreign aid of the 1980s and 1990s where it was apparent that several developing countries became economically dependent on financial assistance (and in particular loans) from developed states or institutions (notably, the World Bank and the International Monetary Fund). The conditions of such loans locked the borrowing state into political or economic agreements that profited the global economic system or donor state, rather than suiting the specific development needs of the borrowing country. Similarly, colonising states such as the United Kingdom and France continued to give significant (conditional) aid to their former colonies, or countries with which they had investment or trade agreements (Boone, 1995) – in effect, an extension of colonisation. Applied to this research, dependency theory cautions foreign aid relations as they manifest in present-day postcolonial states, both with colonising states and non-governmental/international organisations (NG/IOs). Only in being attentive to such nuances (between the binary of developing/developed, global South/North, and third/first worlds) can future pathways for contemporary postcolonial relations be identified and then pursued.

Development practices have since evolved to be more attentive to the rights and needs of communities they engage with, aiming to design development projects *with* not *for* these communities (de Haan, 2017). However, this is not to say that current development practices are faultless or not riven by continuing self-interest. Central concerns for contemporary development practice and theory are safeguarding livelihoods and preventing displacement, where 'livelihood' refers to a person's economic means of securing a living (Chambers & Conway, 1991; de Haan, 2017), while 'displacement' refers to the involuntary resettlement of persons either physically displaced from their homes or at risk of economic displacement of losing 10% or more of 'their productive or income-generating assets' (ADB, 2020). The ADB's displacement classification is considered 'significant' if at

least 200 persons will be displaced as a result of a development project. Both livelihoods and displacement are acutely relevant to dumpsite-to-landfill transitions, as will be explored throughout this thesis.

3.2 FOUNDATIONS FOR SOCIAL JUSTICE

My research is fundamentally concerned with equality, equity and fairness. These principles primarily emerge from my personal worldview, yet are reinforced by well-established iterations of social justice by the likes of Young, Bhabha, Spivak, Said, and Foucault. This section explores theories of social justice, which ground the normative assumption that waste-pickers' livelihoods must be safeguarded with a dumpsite-to-landfill transition. Where critical theory is concerned with improving outcomes for marginalised, stigmatised or oppressed groups (and individuals), the broad notion of 'justice' provides a lens with which to identify instances of such oppression and who is being oppressed. 'Justice' implies a normative dichotomy between 'good' and 'bad', which is inherently subjective. In order to overcome the subjective nature of justice, this section explores how justice is articulated, measured, and used in practice and in justice literature.

3.2.1 FROM DISTRIBUTIVE TO PROCEDURAL JUSTICE

Tracing back to Rawls' (1971) *Theory of Justice*, justice analyses are predominantly, though not exclusively, concerned with the fairness of distribution (Hillman, 2002; Olsaretti, 2018; Young, 1990). Within this research, the distributive paradigm understands social justice "as the morally proper distribution of social benefits and burdens among society's members" (Young, 1990, p. 16). Distributive justice provides a tool for identifying comparative injustices and inequalities through observable outcomes or differences: received outcomes versus deserved outcomes (Lind & Tyler, 1988). Whether or not such outcomes are deserved (or just) is measured by needs, equity, equality or other social rules such as commitment or ownership (Lind & Tyler, 1988). The application of distributive justice in practice is widespread, from grassroots social movements to legal proceedings and policymaking.

Yet justice goes beyond solely distribution. Theorists such as Hillman, Foucault, and Young maintain that social justice all too often focuses on distributive outcomes, rather than the procedural or systemic causes of injustices, therefore many justice analyses ignore the very systems and processes that drive those unjust distributive outcomes. Similarly, Dobson (1998) recognises that "social justice is indeed about principles of distribution, but it is about many other things besides, such as [...] whether we should judge the justice of a situation by its outcome or by how it was arrived at" (p. 30). In the context of dumpsite-to-landfill transitions, justice refers not only to socially inclusive outcomes for waste-pickers (i.e. livelihood security) but also justice in how those outcomes are met, for example,

through democratic⁷ participatory decision-making processes. Within my research, justice is therefore understood as the means to its own end.

Participatory decision-making processes are no perfect 'gold standard' for just inclusion in-and-of themselves. Lawrence et al. (1997) present a conceptual basis for procedural justice in natural resource decision-making processes, which extends beyond solely participation. Procedural justice is based on the hypothesis that "the procedures used to arrive at decisions are significant determinants of [participants'] satisfaction separate from the effect of outcomes" (Lawrence et al., 1997, p. 579). In its emergence, procedural justice held that participants of fair processes are likely to be more satisfied with an unfavourable outcome than participants of an unfair process which result in an 'objectively fair' decision (Lawrence et al., 1997; Lind & Tyler, 1988). The key defining factors for participants' perceived fairness of the process include participants' opportunities for being heard within the process, even when participants are aware that expressing their views will not alter the decision (Lind & Tyler, 1988; Thibaut & Walker, 1975) and the quality of the justification and feedback of decisions to participants (Folger & Martin, 1986). Applied to the Tibar case-study, this tells us that even if waste-pickers' post-upgrade outcomes are not as they had wanted, a degree of justice could still be met through the meaningful inclusion of waste-pickers in the decision-making process.

In an attempt to measure whether or not a process is just, Leventhal (1980) presents six key areas for consideration, including: accuracy of information, information sharing (versus information asymmetry) between participants, consistency of decisions over time, suppression of decision-maker bias, representation of affected groups, and the ethicality of the process measured against fundamental values⁸ (Leventhal, 1980). Although these categories perhaps oversimplify how fairness is assessed (Lind & Tyler, 1988), Lawrence et al. (1997) argue that they nevertheless present the basis with which to assess something as subjective as 'fairness' judgements. For procedural justice analyses specifically pertaining to natural resource decisions, Lawrence et al. urge the additional consideration of the effects of historical mistrust of decision-makers, the impact of various stakeholder (or interest) groups, and the ways in which 'fairness' is measured within each context, and the relative power between decision-makers and other actors. Together, the elements for assessing procedural fairness

⁷ In identifying its Independence, Timor-Leste formally established itself as a Democratic Republic. While a postcolonial analysis might argue that the spread of western democracy is an extension of colonisation itself, these self-proclaimed democratic values justify the application of principles such as procedural justice and participatory decision-making processes.

⁸ Noting the inherent ethical complexities of cross-cultural research and the researcher's ability to define 'fundamental' values.

mentioned in this paragraph signal potential themes that may emerge throughout my research of Tíbar's dumpsite-to-landfill process.

3.2.2 JUSTICE BEYOND 'THE PROCESS'

Young (1990) offers a further critique of distributive justice: that the prevailing distributive justice discourse homogenises those marginalised or oppressed by injustices, ignoring the specific conditions and social relations through which power is produced and exerted – processes which, Young argues, cause or perpetuate injustices in the first instance. To overcome this, Young presents an enabling framework of justice (presented in section 3.2.3, below) which seeks to first gain an understanding of the 'disabling constraints' (or the wider barriers to justice), which justifies a theoretical approach to identify and subsequently address injustice beyond distributive outcomes.

Justice should refer not only to distribution, but also the institutional conditions necessary for the development and exercise of individual capacities and collective communication and cooperation.

- Young, 1990, p. 39

Though some have understood Young's criticisms of distributive justice as focused purely on material distribution (see Olsaretti, 2018), Young's 1990 critiques also include a wider definition of distribution including non-material 'goods' such as power, opportunity, and respect. Young's critique is that, in failing to look at the wider causes of injustice, a distributive framework presents these non-material issues as static, rather than dynamic "function[s] of social relations and processes" (p. 16). The issue therefore lies not in *what* is considered to be distributive (in)justice, but *how* a distributive paradigm enables an understanding of justice issues and the ways in which they manifest (i.e. how social structures and institutional contexts determine the distribution of unjust outcomes). Young seeks to displace the mainstream distributive understanding of justice which perceives individuals as a-political, autonomous, processors and consumers. Instead Young situates individuals through their associated social groups in order to understand the wider systems of social relations (or the processes within which action - power - is decided, enabled, and exercised). Rather than a singular focus of distribution, Young argues social justice analyses should first and foremost begin with the concepts of domination and oppression.

For example, when considering the comparative 'powerlessness status' of the working and middle classes in the United States of the 1990s, Young posits that the separation between *manual* and *mental* labour (non-professional and professional, respectively) denotes "a division not only in working life, but also in nearly all aspects of social life" (1990, p. 57), including: the different cultures

and neighbourhoods (or towns) associated with the two groups; their different health and educational needs, and even; the differing tastes each group tends to have, whether food, music, or clothes. Young (1990) writes, “the powerless lack the authority, status, and sense of self that professionals tend to have” (p.57) which manifests as injustice through “the inhibition in the development of one’s capacities, lack of decision-making in one’s working life, and exposure to disrespectful treatment because of the status [i.e. professional or non-professional] one occupies” (p.58). Thus, Young attributes such injustices, which indeed have distributive consequences themselves, to the division of labour. Through unpacking the dynamics of these observable social differences of the non-professional and professional group, we can therefore elucidate and question the relative power (or lack thereof) between “those who plan and those who execute” (Young, 1990, p. 58).

3.2.3 A POWER AND OPPRESSION: A FRAMEWORK FOR THEORISING SOCIAL JUSTICE

Young (1990) maintains that injustice at almost every level occurs as a result of oppression, which she argues is central to modern emancipatory politics such as civil and queer rights movements. In its most general sense, oppression can be understood as unequal power relations which inhibit individuals’ (or groups’) abilities to “develop and exercise their capacities and express their needs, thoughts, and feelings” (Young, 1990, p.40). Oppression, according to Young, is structural: it is concerned with power relations among social groups.⁹

Yet power dynamics cannot be simplified as occurring directly between the ‘oppressor’ and the ‘oppressed’. Foucault (1977) proposed that, to understand the meaning and operation of power in modern society, we must break down the model of ‘sovereignty’ as going beyond power relations between ruler (the oppressor) and subject (the oppressed), and instead be cognisant of how power is exercised through perceivably ‘humane’ practices and systems such as bureaucratic administration, education, or management. This is not to say that oppression does not occur intentionally - this would be dismissive of the injustices and discrimination that many groups in society face. Rather, we must look further than intention and motive if we are to identify and address injustices. Though not exclusively, the most challenging forms of oppression are systemic. As Young puts it: “social justice [...] requires not the melting away of differences, but institutions that promote reproduction of and respect for group differences without oppression” (1990, p. 47).

⁹ A social group is defined as a “collective of persons differentiated from at least one other group by cultural forms, practices, or way of life” (Young, 1990, p. 43).

The extent and type of oppression differs within the circumstances, and scholars' and activists' attempts to reach consensus on a common definition of oppression have often proved futile, resulting in debates over whose oppression is more severe or fundamental (Young, 1990). To overcome this, Young (1990) presents a system of oppression through five categories: exploitation, marginalisation, powerlessness, cultural imperialism, and violence. Young's (1990) five faces of oppression are summarised below:

Exploitation occurs through "social processes that bring about a transfer of energies from one group to another to produce unequal distributions, and the way in which social institutions enable a few to accumulate while they constrain many more" (Young, 1990, p. 53), seeking justice for exploitation requires institutional change in decision-making practices, in addition to cultural and/or structural change.

Powerlessness recognises the social distinction between the middle and lower classes, otherwise understood as professionals and non-professionals, respectively; differentiated by Marx's division of labour (i.e. the type of work they do). Young presents that professionals enjoy relative privilege and higher social status, whereas non-professionals suffer exploitation and powerlessness. Further, she establishes three injustices of powerlessness: limited capacity to develop one's self, lack of decision-making power [to make decisions on policies and their associated outcomes], and disrespectful treatment due to low social status. Young's exploitation, marginalisation and powerlessness are attributed to structural and institutional power relations between people generalised as: "who benefits from whom, and who is dispensable" (1990, p. 58).

Marginalisation occurs when a specific category of people are excluded from participating in social life, such as material deprivation. Young articulates the systemic nature of marginalisation:

"Because they depend on bureaucratic institutions for support or services, the old, the poor, and the mentally or physically disabled are subject to patronising, punitive, demeaning, and arbitrary treatment by the policies and people associated with welfare bureaucracies. Being a dependent in our society implies being legitimately subject to the often arbitrary and invasive authority of [...] administrators, who enforce rules with which the marginal must comply, and otherwise exercise power over the conditions of their lives. [...] Dependency in our society thus implies [...] a sufficient warrant to suspend basic rights to privacy, respect, and individual choice." (Young, 1990, p. 54)

Marginalisation is not exclusive to those without food or shelter, it also entails cultural or practical deprivation which limits the marginalised group's capacity to participate in certain parts of liberal society, limiting individuals' rights to equal citizenship.

Cultural Imperialism refers to the cultural oppression of group(s) who are excluded on the basis of stereotypes which render them invisible in the eyes of “those with whom they do not identify and who do not identify with them” (Young, 1990, p. 59). This oppression is enabled by the culturally dominant group’s ability to establish its perspective as universal or ‘normal’, thereby the oppressed group are othered.

Violence as an injustice is socially practiced and institutionalised, to the extent that groups and individuals tolerate or enable violence to perpetuate against specific groups in society. For instance the harassment or physical violence against women, people of colour, or those who identify as queer, is perpetuated by socially engrained fear or hatred of these groups.

This thesis draws upon Young’s conceptualisation of oppression in order to identify and correlate the potential barriers to waste-pickers’ justice in dumpsite-to-landfill upgrades. Using Young’s justice framework reduces the risks of homogenising (or dismissing) people’s lived oppression(s), while simultaneously enabling the intersection of multiple types of injustice whereby one person or group may be subject to one or all five faces of oppression. Adopting this wide, yet nevertheless critical, theoretical framework therefore enables my research to elucidate wider causes of waste-pickers’ injustice and begin to work toward potential solutions, beyond simply identifying the injustice itself. To synthesise, my research understands social justice as recognising the autonomy and plurality of individuals (i.e. the power of individuals or groups to seek and bring about change) while simultaneously recognising that the social structures, within which groups and individuals operate, are complex and can be both the *causes* of injustice and *barriers* to attaining justice.

3.3 FROM SOCIAL TO ENVIRONMENTAL JUSTICE

3.3.1 INTRODUCING ENVIRONMENTAL JUSTICE

Environmental justice is inherently linked to social justice and distribution. Here, environmental justice does not mean “‘justice to the environment’, but refers rather to a just distribution of environmental goods and bads among human populations” (Dobson, 1998, p. 20). As many forms of environmental justice have evolved since its conception, Edwards (1995) identifies environmental justice as unified by a collective concern regarding the unequal distribution of the ‘socially acceptable’ costs of environmental hazards and their subsequent long-term health and wellbeing implications which “stem from the inequalities of socio-economic and political power” (p. 36). It follows that the overarching agenda of environmental justice focuses on “who pays and who benefits from contemporary policies of economic growth, industrial development, and environmental protection”

(Edwards, 1995, p. 36), and where these policies or practices “unintentionally or intentionally discriminate against individuals, groups or communities” (Gregory et al., 2009, p. 201).

The link between environmental justice and waste is a long-standing and indisputable one; before it became widespread in academia, environmental justice was first and foremost a non-violent grassroots movement of marginalized African-American communities in North Carolina, protesting against the disproportionate costs their communities bore from state-approved waste dumping in the early 1980s (Martinez-Alier et al., 2014; Gregory et al., 2009). There is a wide body of literature identifying the correlation between the unequal distribution of environmental harms (from the operations or locations of waste disposal sites and incinerators) on persons of colour or low-income groups, versus their white and/or affluent counterparts.¹⁰

Environmental justice civil society and academia indirectly strengthen each other’s cause (Martinez-Alier et al., 2014) creating a sort of harmony between ‘theory’ and ‘practice’. Several studies have identified that people from minority or low-income backgrounds are more likely to be exposed to the externalities of toxic waste and pesticides (Harrison, 2011; Martuzzi et al., 2010; Pellow, 2002). For example, Martuzzi et al. (2010) cite a study of the correlation between hazardous sites (industrial and nuclear sites, waste incinerators and management facilities) and socio-economic characteristics of 36,600 French towns. The study found that towns with high immigrant, low-income populations hosted more hazardous sites. Coase theorem demonstrates that polluting facilities (such as waste disposal sites) are more likely to be situated near/in minority communities, where the probability of collective action (or protest) is low (Hamilton, 1995).

In the context of waste, socio-economically disadvantaged groups are also arguably the least likely to have benefitted from the activities that require waste management. This argument follows on from the base theory of waste generation presented in the introduction: lower income translates to lower purchasing power, which results in lower consumption of material goods and subsequently lower disposal rates – fundamentally driven by capitalism. Therefore, those who create the least waste are disproportionately more likely to suffer from its management and disposal, than their wealthier counterparts who, in theory, consume (ergo dispose of) more material goods.

¹⁰ Pellow (2002), argues that the overarching environmental justice literature focuses too heavily on these stark class and race dichotomies, and argues that environmental injustice (environmental racism) can occur within racial groups and social classes, using the example of residents from an African American suburb in Chicago who were split between support for a waste incinerator in their neighbourhood.

Here, it is necessary to lay the groundwork of environmental justice within the context of the informal waste sector workers. The informal waste sector provides significant environmental and economic benefits to society at large through the provision of unwaged waste management and recovery services, where local authorities have failed to do so (Hoornweg & Bhada-Tata, 2012; Wilson, Velis & Cheeseman, 2006). Intentionally or not, local authorities' inability to provide adequate SWM services and infrastructure in low-income urban areas has, in some instances, driven the informal waste sector into existence (Kubanza & Simatele, 2016; Oteng-Ababio, 2011), and places informal waste-workers (and communities situated near disposal sites) at risk of unequal exposure to toxic environmental hazards from waste (Martuzzi et al., 2010).

3.3.2 BEYOND ENVIRONMENTAL JUSTICE: RACIAL CAPITALISM AND ENVIRONMENTAL RACISM

Akin to Young's critique that distributive justice is limited in its ability to identify the causes of injustices, Pulido (2016) maintains that the predominant environmental justice paradigm fails to identify and challenge the wider "historical, political, and economic context in which vulnerability, contamination, and death are produced" (p. 1), in other words: how power operates within the state. Using the well-publicised example of water pollution in Flint, USA, Pulido highlights "the immediate source of the problem is not a reckless emitter or a polluter cutting costs – the typical drivers of environmental injustice. Instead, the Flint disaster is the result of the local state acting within the context of neoliberalism" (p. 1). Using this example, Pulido argues that environmental justice analyses are too often focused on criticising the state (i.e. identifying government failure) and therefore exclude critiques of wider political and economic causes of injustice (namely, capitalism). In this way, Pulido's critiques of environmental justice draws on broader critical theory analyses of capitalist economic structures (see: Box, 2015). Pulido identifies that the Flint township (having been politically neglected by Michigan's capital government) had been operating under austerity policies which ultimately led to the devaluation of the people of Flint in the eyes of government, so much so that their lives "are subordinated to the goals of fiscal solvency" (p. 1).

Pulido (2016) attributes such devaluing to the Flint community's 'blackness' and 'surplus' status, which she states are mutually constituted through racial capitalism, ergo environmental racism. She calls for a shift in the ways in which ideology and history are understood to interrelate with material processes, because, as Pulido states: "just because a situation is not popularly recognised as a racial one does not mean that it is not" (2016, p. 13). Similarly, racial capitalism, widely attributed to C. J. Robinson, extends beyond Marxism and maintains that the modern world system of capitalism is fundamentally racist in its dependence on extracting economic or social value through oppression of those belonging

to another racial group through labour, slavery, violence, and/or genocide (Al-Bulushi, in press; Pulido & Lara, 2018). A close relative of racial capitalism, is environmental racism, or: the bad treatment inflicted on people in the form of pollution or resource extraction on the grounds of membership in particular ethnic groups, social class or caste” (Martinez-Alier et al., 2014, p. 21). That environmental racism can extend beyond racial discrimination is particularly important to my research, as such injustices may manifest in Tibar’s dumpsite-to-landfill process on the basis of social class, rather than race or ethnicity.

Within the context of Tibar’s dumpsite-to-landfill upgrade, Pulido’s case-study of Flint establishes the need to broaden environmental justice analyses beyond one single ‘type’ of injustice or oppression, and instead analyse the socio-cultural contexts and the wider political and economic systems in which injustice occurs. As has been demonstrated throughout this chapter, solely focusing on injustice through a single lens may inhibit the research(er)’s ability to elucidate the bigger justice picture and so inhibit just outcomes from being reached. For instance, Marxism is a useful tool in the justice toolbox because it elucidates the division of labour (and associating class structures) through exploitation, where some gain power (wealth) through profiting from others’ labour. However, Marxism alone offers too narrow an understanding of justice in every context. Feminism, for example, would argue that power relations within family structures are not included in a traditional Marxist analysis (Young, 1990), and racial capitalism holds that fundamental Marxism does not recognise racial injustices. Environmental justice is useful in that it identifies the unequal injustices borne by marginalised communities, but often excludes the acknowledgement and analysis of the systemic causes of such injustices. What enables well-meaning individuals, particularly decision-makers, to unintentionally cause or uphold environmental injustices? In seek to address this, my research requires a theoretical framework which includes multiple critical frameworks such as Marxism, while simultaneously enabling the scope to identify and critique wider determinants of environmental injustice.

3.4 FROM ENVIRONMENTAL JUSTICE TO POLITICAL ECOLOGY

“[...] politics is inevitably ecological, and ecology is inherently political”
(Robbins, 2012, p.3)

In light of the discussion above, my research adopts political ecology as a guiding theoretical framework for understanding justice as it manifests in the case of Tibar’s dumpsite-to-landfill upgrade. Political ecology is a critical interdisciplinary approach concerned with the deeply politicised and power-laden nature of ecological (or environmental) issues, which seeks to identify the broader socio-

political systems that these issues sit within (Robbins, 2012), with particular focus on the relationships and power structures that either perpetuate or alleviate environmental issues. Robbins (2012) maintains that dominant environmental/ecological discourses are apolitical and uphold a 'disinterested objectivity' which perceives ecological systems as politically inert. In recognising ecological issues (such as solid waste) as inherently political, Robbins (2012) establishes that any action seeking to change such systems is intrinsically linked to (i.e. inhibited or enabled by) social and political processes. The purpose of political ecology is therefore two-fold: to critically assess the dominant accounts of environmental change (which aligns with postcolonialism's focus on marginalised perspectives), while simultaneously seeking less exploitative alternatives for creative adaptation in the face of mismanagement and exploitation (effectively, incorporating the normative aims of justice).

Political ecology inevitably overlaps with notions of environmental justice; environmental justice movements, sometimes with the support of academics, make significant contributions to political ecology, and in doing so produce a "political ecology from the ground up" (Martinez-Alier et al. 2014, p. 21). However, as demonstrated by Pulido (2016), the two are not synonymous. Political ecology enables a much broader view of processes, while remaining grounded in critical theory. It is attentive to the wider structures highlighted by both Young and Pulido; focused on the wider causes, rather than proximate symptoms, of environmental and social injustices. Political ecology presents a framework with the scope to include multiple social justice analyses - whether distributive, procedural, or Young's enabling theory of justice - as applicable to ecological issues.

3.4.1 POLITICAL ECOLOGY IN ACTION: CRITIQUES OF CAPITALISM FOR WASTE MANAGEMENT
With the support of critical theory, political ecologies enable the identification of potential barriers to justice which would not have been otherwise elucidated within an environmental justice framework. As Pulido (2016) has demonstrated, the state will be reluctant to address injustices if doing so requires rejecting dominant political and economic structures such as capitalism. As I have argued, waste issues are closely entwined with capitalism.

Capitalism is arguably an easy target when discussing and analysing socio-economic/environmental injustices; as Amin and Thrift (2005) put it, the plight of capitalism is "the bread and butter" of the left (p. 225). Nevertheless, many socio-environmental issues are widely attributed to capitalism, which is fundamentally dependent on resource extraction, consumption, and profit (Martinez-Alier et al., 2014). Indeed, waste has become a global issue because of the spread of western ideals through colonisation. Equally, solid waste issues in LMICs can be attributed to globalised western ideologies

and systems: namely capitalism and consumerism (see: Mahees et al., 2011). Postcolonialism would argue that these very systems are extensions of colonialism: their international prominence is a result of widespread western colonial rule. To be considered a 'legitimate' state in today's world, emerging countries such as Timor-Leste face both internal and external pressures to participate in such systems. For individuals existing in today's global modern society, consumption is a (predominantly western) iteration of wealth, success, and happiness ('standard of living'), which can be traced back to the early twentieth century, or the beginnings of the *society of perpetual growth* (Gellner, 1983) and the *consumer* (Robbins, 1999). For governments and businesses, economic growth and improved standards of living have largely been used as the benchmark by which countries' progress is measured – again, upholding a western linear concept of development and progress (as signalled in section 3.1.2 of this chapter). Robbins (1999) clearly establishes that the culture of capitalism has been exported from western society throughout the world, and instead offers that in recognising capitalism as “as one cultural adaptation out of many, we will be better able to understand and judge the effects it has had on the world's peoples and see its spread not as inevitable development, growth, or modernization, but as the displacement, for better or worse, of one way of life by another” (p. 7). Although an imported idea, consumerism is nevertheless prevalent in modern Timorese culture just as it is throughout the rest of the world. Further, being a relatively small state, Timor-Leste is highly dependent on importing consumable goods (including food and water). The ADB (2017) estimates that 60% of Timor-Leste's imported consumable goods have some sort of packaging; in essence, through simply participating in contemporary international markets, driven by globalised capital, Timor-Leste is importing a large portion of their waste problem. Therefore, addressing Dili's growing SWM issues, and any analyses thereof, requires the acknowledgement of the deep and complex entanglement of waste and capitalism in modern Timor-Leste. Not only does political ecology enable such acknowledgement and analysis, it also argues that addressing the root cause of injustice in Timor-Leste requires rejecting a deeply engrained and globalised socio-economic system.

Yet rejecting such a system is no easy feat, as exemplified by analysing the contemporary circular economy as a solution to modern SWM. Many, such as Martinez-Alier et al., 2014, argue that the circular economy is unattainable within the material-based capitalist society in which we live. Critical theory, applied to public administration and management issues (such as SWM), maintains that governments are largely influenced by the wealthy and powerful, where professional public individuals are responsible for determining 'public interest' against 'capitalist interest' (Box, 2015). Therefore, through political ecology, it is understood that policy decisions do not necessarily reflect the public 'good', as decision-makers are susceptible to capitalism on the individual level (e.g. private

companies lobbying for a certain policy). Meanwhile governments have to operate within the dominant global capitalist system – a system which ultimately outlasts any state’s electoral cycle or political mandate.

3.4.2 ESTABLISHING WASTE AS POLITICAL: DIRTINESS, VALUE, AND STATUS

The intersection of political objects and actors is a central focus for political ecology (Robbins, 2012); SWM is therefore understood as deeply political. Accordingly, significant (and diverse) literature exists on the intersections of waste and the political/social/cultural spheres. The early 2000s saw increased academic interest in waste-picking: this literature largely focuses on the stigmatisation and discrimination of waste workers; waste-pickers unionising or organising themselves into cooperatives; and the economics of the informal waste sector (O’Hare, 2017). For instance, the literature from Latin America largely focuses on waste-pickers and the political and moral economy of waste, attributed to the significant increase of waste-pickers in Latin America in the early 2000s, where huge unemployment (following several financial crises of 2001/2002) led to many people being forced to seek out the economic opportunities offered by the waste-stream (O’Hare, 2017). Waste-picking presents an opportunity in times of financial difficulty, almost as a back-up or ‘shadow’ economy.

Similarly, as summarised by Millar, much of the literature on urban poverty and social class “suggests that today’s urban poor are excluded economically, politically and socially, and constitute a residual class that is superfluous to the global capitalist economy” (2012, p. 162). This correlates to Pulido’s (2016) study of Flint, where government perceived the Flint community as a ‘surplus population’, which Pulido links to racial capitalism. The relationship between capitalism, race (class) and waste is similarly alluded to by Miraftab (2004) who identifies a correlation between the post-apartheid neoliberal South African state seeking to reduce costs of waste collection through privatised services which use a low-paid, short-term/casually contracted (read: insecure) labour force. In doing so, Miraftab argues, the state exploits and perpetuates the racial and class segregation of apartheid. Racial capitalism can be extended to include how people perceive (and value) waste and, indeed, those associated with waste labour through their class or social status.

Waste matter is politically charged, represented by its transgressive (Hawkins, 2003) yet transformative (Harvey, 2014) presence. The very definition of waste strips matter of its mainstream value: waste refers to the unwanted leftovers, excess, or surplus of what was once useful and valuable. Similarly, ‘dirtiness’ represents bugs, germs and health threats. Douglas (1966) famously termed dirt as ‘matter out of place’, and widely established that waste and dirt are socially constructed as ‘impure’ and ‘reputationally damaging’; aptly summarised by Hawkins (2005, p. 9): “waste makes us feel bad,

its presence disgusts and horrifies us". Indeed, social organisation is concerned with distancing society from its waste (Lupton & Miller, 1992). A large body of sociological literature explores why these negative connotations of waste are so deeply embedded and widespread throughout modern societies. Though the explanation I have offered here only scratches the surface, there is nevertheless a clear and well-founded correlation between waste, dirtiness, and 'badness'.

A further negative waste attribute is the 'toxic vitality' of waste materials, which present socio-environmental risks for waste management policymakers (Harvey, 2014). Waste's toxicity can manifest in many ways, whether waste labourers' exposure to different forms of toxicity (e.g. the smoke and ash on open dumpsites) or the residual wastes and by products of recycling, recovery or disposal technologies; even the most high-tech, 'environmentally friendly' waste-to-energy incinerators produce a toxic bottom-ash which requires adequate management.

By proxy, waste's negative attributes are ascribed to those who work directly with waste; those who, paradoxically, provide infrastructural services in collecting, sorting, and recovering waste generated by the general population. Waste-pickers are indeed subject to social stigmatisation (low social status) attributed to the 'dirty' nature of their work, particularly in urban centres and affluent suburbs (O'Hare, 2017; Sternberg, 2013; Whitson, 2011). Yet the discrimination experienced by waste-pickers extends beyond social stigma: as signalled by Miraftab (2004) above, the division, and associated burdens, of waste labour is intrinsically linked to class¹¹. The provision of formal SWM services are often seen as exclusive to wealthier neighbourhoods that typically house the political and economic elite (as seen in Kubanza & Simatele's [2016] study in Kinshasa, Democratic Republic of Congo). The labour of the waste public service is therefore devolved onto waste-pickers who "bear the brunt of this labour-intensive infrastructure through the onerous physical demands of the work itself, associated diseases... and the stigma of labouring in filth" (Fredericks, 2014, p. 539). Though waste-pickers are not necessarily the poorest in society (as Oteng-Ababio [2011] reports¹²), waste-pickers are predominantly from vulnerable and disadvantaged subgroups within urban populations (Medina, 2000; Fredericks, 2014). In essence, waste-pickers, who typically share similar low social status or class, form the 'shadow infrastructure' for waste services (O'Hare, 2017), often where local authorities have failed to do so (Hoornweg & Bhada-Tata, 2012; Wilson et al., 2006). In this sense, waste-picking may, in certain contexts, be attributed to racial capitalist ideologies and systems which perceive

¹¹ As previously established, a relationship exists between an individual's class or culture and their perceptions of waste (Strasser, 1999). O'Hare (2017) argues that class has a greater role than culture in perceptions of waste.

¹² *Kaya bolas* (cart-pushers who collect household waste) in GAMA make an average of US\$35.10 per day, whereas 50% of Ghana's urban population live below the poverty line (US\$1 per day) (Oteng-Ababio, 2011).

certain groups within society (characterised by race or class, for example) as exploitable surplus populations.

In providing public waste services, waste-pickers materialise the transformative value of rubbish. While waste materials that arrive at the dumpsite may have lost their commodity status (O'Hare, 2017) and present toxic risks, by no means have they "fallen out of the realms of desire, exchange, and use" (Kantaris, 2016, p. 54) as waste simultaneously represents recoverable value, obtainable through either recycling, reuse, gifting (see: O'Hare, 2017), or energy transformation. Further, the informal waste sector can provide highly efficient resource recovery and recycling services: for example, the Zabbaleen in Cairo operate intensive manual dumpsite sorting which results in recovery rates of 80% (Wilson et al., 2006).

3.4.3 REITERATING THE NEED FOR INTENTIONALLY POLITICAL ANALYSES

The transformative duality of waste as described above "entangles material and social worlds in ways that are never fully under the control of the technical expert" (Harvey, 2014, p. 62). This highlights the importance of veering away from technical, policy-based analyses of SWM issues (such as the Tibar dumpsite-to-landfill upgrade) and instead adopting an overt political lens which specifically seeks to identify the barriers to long-term improvements. Harvey (2014) further maintains that predominant approaches to SWM, and SWM solutions, are ultimately dictated by neoliberalist problem identification. The ways in which waste is perceived as an issue (e.g. 'inadequate solid waste management') Harvey argues is an extension of neoliberalism, which shifts responsibility both for the problem and for providing a solution to the state¹³. In this way, waste issues are generally not attributed to dominant capitalist structures (or the ways in which resources are continuously extracted and manufactured for consumption and subsequent disposal), but to the state's failure to provide adequate infrastructure and management of the waste created under such conditions.

This is not to say that state SWM failure is not an issue. Policy decisions are inherently value-laden, and government perception of the informal waste sector is critical to improving SWM outcomes. Sembiring and Nitivattananon's (2011) case-study of normative social inclusion SWM in Bandung, Indonesia, establishes that local authorities' negative perceptions of the informal sector manifests as neglect in policy-making: excluding the informal sector within the very policies and laws that directly involve them. Wider informal waste literature determines that, despite the integral role that the informal sector plays in municipal solid waste management, the informal waste sector (including

¹³ Harvey's (2014) critiques of apolitical SWM returns to Pulido's critiques of environmental justice, as explored in section 3.3.2.

waste-pickers) is largely ignored by local authorities (Kubanza & Simatele, 2016). In some cases there is specific policy prohibiting their livelihoods (Oteng-Ababio, 2011; Paul et al., 2012; Wilson et al., 2006). Waste-pickers can be further subject to institutional injustices through government policy, where they are repressed, neglected, or used for political clientelism (politicians offering favours to waste-pickers in return for their vote/political support) (Medina, 2000).

Waste exposure-related inequities affecting the urban poor are preventable through implementing targeted planning policy and adequate mitigation and abatement efforts (e.g. see Martuzzi et al., 2010¹⁴), or through local authorities adopting rights-based urban development approaches which include the urban poor in decision-making processes, as primary stakeholders (Otenga-Ababio, 2011), in order to establish systemic empowerment and enable self-determination for their own futures (Kubanza and Simatele, 2016). While theoretically desirable, such approaches cannot be implemented overnight; as explored throughout this literature review, significant systemic and social barriers will usually prevent such policies from being adopted. Despite this, recognising and including those with localised expertise of the issue, most directly affected by a policy intervention or proposed change, will ultimately benefit government and the public. Attempts to improve formal waste management systems without incorporating the pre-existing informal sector have proved counterproductive; Wilson et al. (2006) identify a trend among developed countries where national recycling rates reduced when pre-existing informal recycling systems were replaced by formal SWM.

While waste-pickers do often experience exposure inequities, and certainly work and exist in hazardous and challenging conditions, I reject the dominant depiction of waste-pickers as a 'suffering' group in society: a narrative often used as an "index for global inequality" in news media (Reno, 2009, p. 32). Waste-picking can prove a form of economic and social empowerment; for instance, waste-pickers would not enjoy the same job autonomy under formal employment (Oteng-Ababio, 2011). This is not to dismiss the very real, challenging, and unjust subjectivities of waste-pickers. Instead, I support an alternative narrative to the 'dirty, poor, and disempowered lower class', where waste-pickers are instead established as resourceful and autonomous people, skilled in resource recovery, and who ought to be considered key stakeholders in, rather than the victims of, the dumpsite-to-landfill upgrade. The importance of distinguishing this is to situate waste-pickers as autonomous individuals and groups entitled to self-determination for their future livelihoods – rather than simply accepting whatever is offered to them by local authorities. This is, of course, a normative iteration of

¹⁴ This recommendation is appropriate to their areas of study (the US and Europe) and is arguably less applicable in developing contexts, such as Timor-Leste, where governments tend to prioritise investment in poverty alleviation over technical SWM improvements.

waste-pickers' role in decision-making processes, and I recognise that significant and complex barriers prevent such autonomy from being realised.

Throughout this chapter, Harvey (2014), Mirafteb (2004), and Pulido's (2016) work has demonstrated the need to broaden how the Tibar dumpsite issue is framed – to build a justice analysis beyond just government failure. My research recognises and maintains the civic responsibility of local and central government to provide adequate waste services, which safeguard both human and ecological health. Indeed, my research emerges from a criticism of government failure to provide such services in the first instance. In addition, local and central government authorities hold the institutional and political power to initiate change. Accordingly, my research gives weight to the role of the state in the Tibar dumpsite-to-landfill issue, while recognising that the potential causes of the waste issue at Tibar dumpsite, and even in Timor-Leste at large, requires analysis of *beyond* the state alone, in order to recognise and critique the intersection of capitalism and state systems.

3.5 SITUATING THIS RESEARCH WITHIN TIMOR-LESTE'S EXISTING SWM LITERATURE

Globally, substantial literature is concerned with the intersection of SWM and politics, yet there is little available literature and data on waste in the context of Timor-Leste, let alone literature on environmental justice, or Tibar's proposed dumpsite-to-landfill transition. Globally, there are issues with SWM data because it can be challenging to collect and verify (Hoornweg & Bhada-Tata, 2012). Lack of reliable SWM data is particularly an issue for SWM in Aotearoa New Zealand (OECD, 2017); Timor-Leste is a young state, so it is understandable that official data on SWM and Tibar's waste-pickers is lacking. Below, I summarise the available literature as it relates to this thesis.

Most notably, Magno de Côrte-Real Araújo et al. (2015) conducted a study of the impacts of Tibar dumpsite on the neighbouring Tibar settlement. Their research found that the smoke and dust was a key concern noted by residents, and further identified some ecological impacts of Tibar dumpsite's current operations, including potential groundwater pollution and air pollution. Research participants maintained that there was no government response to managing the negative impacts of the dumpsite. The Tibar village residents sought the organisation of waste-pickers; increased waste segregation collection, and transportation; and an overall disposal alternative to the dumpsite, among other recommendations. Ximenes da Costa and Carvalho de Jesus (2018) conducted a study of Dili's SWM system, including acknowledging the open burning and government's disposal operations at Tibar dumpsite. Several ADB reports constitute the grey literature: ADB (2014) for the ADB; the ADB's (2017) Pacific Economic Monitor; and a report contracted by the ADB (2015) to form the basis of their SWM advice to the GoTL. Although instrumental in providing a basis for SWM data in Timor-Leste,

these reports are nevertheless subject to Harvey's (2014) critique that focusing on 'inadequate' SWM, though useful, ultimately shifts responsibility both for the problem and for providing a solution to the state.

My research seeks to contribute towards and build upon the literature on SWM in the context of Tibar, Dili and Timor-Leste more broadly, in addition to contributing towards wider bodies of literature concerned with SWM, waste governance, and social justice. This chapter has highlighted the importance of extending justice analyses beyond environmental justice alone (i.e. identifying the link between government failure and disproportionate environmental risk that waste-pickers are subject to). While capitalism and government failure each contribute to injustices, simply cutting off justice analyses at the state level would neglect to properly address and overcome such injustice; the state might be reluctant to address injustice if doing so impinges on capitalism.

CHAPTER FOUR

METHODOLOGY: THE BENEFITS AND CHALLENGES OF *DOING* POLITICAL RESEARCH

“Conducting international fieldwork involves being attentive to histories of colonialism, development, globalization and local realities, to avoid exploitative research or perpetuation of relations of domination and control.”

- Sultana, 2007, p. 375

This research consists of a qualitative case study of the proposed dumpsite-to-landfill upgrade in Tibar, Timor-Leste. This chapter outlines the methods adopted and the theoretical basis underpinning my research approach. Establishing exactly *which* research epistemologies were applicable to my study proved to be challenging, yet nevertheless crucial, in conducting cross-cultural research. The resulting research approach is a hybrid of constructivist, critical-postcolonial, and transformative worldviews.

First, this chapter identifies and justifies the application of these theoretical approaches in exploring justice within the Tibar dumpsite-to-landfill upgrade. Critically, adopting a postcolonial transformative approach enables research design that recognises the legacy of colonisation in Timor-Leste. I then describe the methods used, and how this played out in practice. Semi-structured interviews help to elucidate the perspectives of various actors involved in the proposed dumpsite upgrade. The interviews aimed to gain an understanding of stakeholders’ perceptions of the upgrade (with a focus on the future for waste-pickers’ livelihoods) and to simultaneously identify the relationships between the actors and how these influence Tibar’s dumpsite-to-landfill decision-making process. Supplementary data from additional sources (such as law, government policy, reports, and observational notes) were used to strengthen the broader environmental justice case study analysis. Noting that knowledge is inherently subjective, and given that this research is cross-cultural and focused on power dynamics, this chapter also discusses how I situate myself as a ‘researcher’ in a cross-cultural context, and the challenges and advantages this presented in practice.

4.1 A TRANSFORMATIVE RESEARCH APPROACH: RESEARCH IS NOT INERT, NOR OBJECTIVE

In deciding to undertake Master’s research, I was determined to produce something ‘useful’. True to its name, transformative research aims to *change* something through the research process (Creswell, 2014). Constructivism would argue that all social research ‘changes’ something; through the very act

of engaging with participants, the researcher is co-constructing (hence changing) knowledge. Yet the definition of transformative research extends beyond 'change' alone: transformative research is an umbrella term "encompassing emancipatory, anti-discriminatory, participatory, and Freirean approaches demonstrated in feminist, racial/ethnic minority, disability, and research on behalf of other marginalized groups" (Mertens, 1999 in Sweetman et al., 2010, p. 452). Transformative theory applies to this research on two levels; it recognises the significance of understanding the power relationships within and surrounding the Tibar case study, as well as the power dynamics inherent in research practice, among and between participants and the researcher.

Transformative research "uses a program theory of beliefs about how a program works and why the problems of oppression, domination, and power relationships exist" (Creswell, 2014, p. 10). In order to confront social oppression or marginalisation, transformative theory asserts that research inquiry must be intertwined with politics and a political agenda (Mertens, 2010), where the research process and/or outcomes are used as the very tools to enact the political change sought (Creswell, 2014; Mertens, 2010). Adopting a transformative methodology enables this research to contribute towards the desired 'political' outcomes (i.e. intentionally seeking just outcomes for Tibar's waste-pickers), as established in the literature review and perceived through a critical postcolonial worldview. Guided by political ecology, my research intends to unpack the potential power relationships between waste-pickers and the wider stakeholder group in the Tibar dumpsite-to-landfill process.

Regarding methodology, the transformative paradigm presents a way of navigating the ethical issues associated with research practice, described in section 4.2.1. Transformative theory "directly engages the complexity encountered by researchers and evaluators in culturally diverse communities when their work is focused on increasing social justice" because it acknowledges the power dynamics inherent in methodological design (Mertens, 2009, p.10). The transformative paradigm encourages a participatory approach to research, where the focus (or marginalised) group is at the very centre of the research (Cresswell, 2014), setting research questions, collecting data, or ideally as co-producers of the research (Mertens, 2009; Sultana; 2007). It assumes that the researcher "will proceed collaboratively, so as to not further marginalise the participants as a result of the inquiry" (Cresswell, 2014, p. 10). In line with Gibbs (2001) and Tuhiwai Smith (1999), Sweetman et al. (2010) that real transformative methodology emerges directly from the oppressed group; only the group themselves can determine if the research is truly necessary.

However, transformative research is certainly not without its critiques. Adopting participatory, collaborative, action-based research (or ‘scholar activism’) can prove problematic. As Chatterton et al. (2010) identify, “participatory research is not inherently progressive; much work and thought is needed if participation is to lead to empowerment and transformation” (p. 249, 2010). Research is not necessarily transformative or participatory by simply labelling it as such. Echoing Bell (1978), Gibbs (2001), and Tuhiwai Smith (1999) (discussed in section 4.2.1, below), Chatterton et al. argue that, too often, scholar-activists use the experiences of oppressed groups to progress their own professional careers, even though this may have not been their intention. Further, while postcolonial research is often defined as ‘giving voice’ to marginalised groups (Creswell, 2014), Spivak (1988) argues that the privileged (whether scholars, playwrights, or politicians) cannot speak on behalf of the subaltern (the oppressed); the subaltern should instead be writers of their own stories. This aligns with Young (1990), who challenges the dominant social justice narrative expressed through the perspective of white males. Accordingly, the researcher should not be assumed to hold the power to speak on behalf of or ‘give’ voice to marginalised groups. Instead, the research process should seek to provide avenues to support perspectives that may have been otherwise oppressed or unheard.

Constructivism maintains that peoples’ perceptions are informed by the social, cultural, and political contexts in which they are situated (Holstein & Gubrium, 2011). Following this vein, researchers do not exist as objective observers outside of society, rather, the researcher is responsible for interpreting (constructing) participants’ (already constructed) understandings of their own realities. Meaningful transformative research can only be achieved if the researcher employs ongoing critical self-reflection of their role in the research, the knowledge produced and the impacts this has on the participants and the research issue (Chatterton et al., 2010).

4.2 RETURNING TO A CRITICAL POSTCOLONIAL EPISTEMOLOGY

This section builds on the intersection of worldviews¹⁵ underpinning this research, in particular the discussion of critical theory and postcolonialism explored in section 3.1. It justifies the environmental justice research focus on power, and how this is explored through conducting qualitative research. The ‘active critique’ element of critical theory aligns well with a transformative approach of bringing about change through the research process. Simply put, critical theory sees something as ‘wrong’ and transformative theory seeks to ‘right’ it, which further aligns with the notions of justice explored in the literature review.

¹⁵ Within this research, worldviews are understood to be a suite of guiding values and principles, where theories provide the frameworks and ways of understanding issues situated within those worldviews.

Postcolonialism is further applicable to this research on a more localised level than has been previously discussed. In line with transformative theory, postcolonialism situates Tibar waste-pickers at the centre of this research. Postcolonialism perceives the Tibar waste-pickers as more susceptible to marginalisation than other stakeholders within this research. Recognising that the informal waste sector operates alongside (and within) wider power structures (specifically the formal waste sector and public management systems), Tibar's waste-pickers may be susceptible to additional layers of institutional and/or social inequalities. If waste-picker livelihoods are not officially recognised by the state, their income security is unlikely to be protected under constitutional law, or they may be marginalised because of their social class (associated with waste-picking) or any other distinguishing factor. As established in the literature review, waste-pickers elsewhere in the world are at risk of systemic exclusion from decision-making processes regarding their own futures, including during dumpsite-to-landfill upgrades. It is therefore fundamental that my research facilitates space for perspectives that otherwise might be ignored. Postcolonialism is therefore used as a tool to open critical spaces for narratives of 'becoming' and 'emancipation' (Venn, 2006). Although I interviewed a range of stakeholders involved in the Tibar issue, the experiences and perspectives expressed by the Tibar waste-pickers are perceived as most important, following a postcolonial understanding of the context at Tibar dumpsite.

4.2.1 THE ETHICS OF CROSS-CULTURAL RESEARCH

Here it is necessary to recognise an important critique of my conducting this research: that cross-cultural research uses and perpetuates unequal power relations between the researcher and the researched (Bell, 1978; Gibbs, 2001; Sultana, 2007). The textbook example is that nonindigenous (typically white or western) academics 'do research to' Indigenous (typically non-white) individuals or communities for the researcher's self-gain. For example, much social research in Aotearoa New Zealand has failed to benefit Māori (Gibbs, 2001; Tuhiwai Smith, 1999). Instead of being engaged as active proponents of the research, Māori are often the 'subjects of inquiry', resulting in research outputs that are of limited or no use to the very people that the research is about. This research approach is not exclusive to studies involving Indigenous groups; it impacts many marginalised groups in society, identified by their social class, ethnicity, ability, sexuality, gender, age or any combination of these. In sum, this 'take and leave' research approach predominantly used in western institutions can be described as conducting research "*on the relatively powerless for the relatively powerful*" (Bell, 1978, p. 25). Although not usually intentional, this can be particularly problematic for social researchers, whose failure to meaningfully engage in collaborative research may perpetuate the very issue they were researching in the first place.

To conduct ‘ethical’ research, researchers must be aware of, and actively engage with, issues of positionality, reflexivity, and power relations (Sultana, 2007; Hay, 2010). Similarly, Tuhiwai Smith (1999) stresses the importance of recognising the legacies of imperial and colonial powers as they manifest in research methodologies. She proposes ‘decolonising’ research processes to gain a better understanding of how research is informed by underlying assumptions, values, and motivations such as power structures and “competing theories of knowledge” (Tuhiwai Smith, 1999, p. 42).

As a pākehā member of contemporary Aotearoa New Zealand society, as well as a student researcher of Victoria University of Wellington, I am responsible for ensuring this research meets its obligations under Te Tiriti o Waitangi. Te Tiriti represents the conscious recognition of colonial histories and power relations, and lays the legal and moral groundwork with which to navigate cross-cultural relations today, whether it be in public policy, daily life, or academic settings. This recognition of historical power relations establishes the impetus for meaningful and collaborative engagement in any cross-cultural context: moving forward while not losing sight of the past. This social responsibility extends beyond the borders of Aotearoa New Zealand.

While this research recognises the unique cross-cultural context of Aotearoa New Zealand, Sultana (2007) argues that ethical concerns are amplified in the context of international research as geopolitics, inequalities, and differences intersect at different scales and across boundaries. Additional layers of ethical complexity were added when I chose to conduct research in a country that I do not have a lived experience of, and with people with who I do not directly share language, culture, or ethnicity. Further still, Timor-Leste has very deep (and recent) colonial and occupied histories. To navigate the problematic space of ‘being a white person conducting westernised research within a culturally and politically complex foreign context’, it is necessary that my research adopts a critical postcolonial transformative methodological approach.

4.3 METHODS

4.3.1 QUALITATIVE METHODS GUIDED BY CONSTRUCTIVISM

Within this research, a constructivist epistemology guides the way that knowledge is understood and created. Like postcolonial thought, constructivism arose out of critical theory and the Frankfurt School.¹⁶ Constructivism maintains that there is no single objective ‘truth’ to be discovered by the researcher, therefore it directly rejects positivism. Constructivism aligns with a qualitative research

¹⁶ I consider critical theory as the grandparent and constructivism the godparent of postcolonialism.

approach as it recognises the researcher is inevitably responsible for interpreting participants' diverse views on an issue, and that in-depth, qualitative inquiry is how these views are elucidated.

Qualitative methods seek to elucidate the meaning that individuals and groups ascribe to an issue (Creswell, 2014). Qualitative data favours shared knowledge and lived experience, and in doing so rejects the notion of a single 'truth', typically sought by statistical methods (Limb & Dywer, 2001). Qualitative semi-structured interviews were used to elucidate participants' varying perspectives on the 'reality' of the Tibar dumpsite-to-landfill upgrade, in order to build a more holistic case study of the upgrade. Supplementary qualitative data such as policy documents, reports, and additional interviews were used to strengthen this case study.

4.3.2 CASE STUDY

This research primarily consists of a case study of the inclusion of waste-pickers in the dumpsite-to-landfill upgrade process, specifically in Tibar, Timor-Leste. Case studies provide an effective means to understand the practical elements of a phenomenon, and/or to test or develop a theoretical concept applied to the case (Hay, 2010). Case studies generally involve a detailed contextual analysis of a specific location with a small number of research participants (Zainal, 2007). Having an overall understanding of the Tibar dumpsite-to-landfill upgrade provides the context for further analysis of the involvement and consideration of waste-pickers within the upgrade process, the power relations that exist, and how the issue of waste-pickers' livelihoods is understood by officials, NGOs, and waste-pickers themselves. If waste-pickers are included in the process, is this involvement considered just? Case study enables this research to explore and develop the theories around environmental justice, as articulated in the literature review.

4.3.3 SEMI-STRUCTURED INTERVIEWS

Interviewing is a powerful qualitative research method as it provides insight and depth to the research which speaks to subjective perspectives and locally-situated knowledges (Dunn, 2010), a notion supported by postcolonial and transformative ideologies. Semi-structured interviews are a valuable tool which can be used to elucidate participants' respective subjectivities (Flick, 2009). Using an interview schedule (see: Appendix C) enables the researcher to ask key questions derived from the literature, while providing the space for participants to change the direction and shape of the interview to topics and issues not captured in the researcher's preliminary understandings of the issues (Choak, 2012). Within the context of my research, having space for participants to direct the conversation is particularly important, especially with waste-pickers as it is their experiences, perspectives and desired outcomes which ultimately determine the parameters of justice in the Tibar dumpsite-to-landfill process.

Fourteen semi-structured interviews were conducted in order to elucidate the knowledge and views of various stakeholders in the Tibar dumpsite issue. True to their name, these interviews varied in length and depth, as they were largely guided by the conversation that occurred in individualised contexts, rather than a fixed set of questions and answers. A semi-structured interview will ideally resemble a 'flowing conversation' (Choak, 2012). Five of these interviews I conducted in English, while the remaining nine were conducted with the help of a Timorese colleague from United Nations' Development Project (UNDP), Jaco¹⁷, who offered to translate between Tetun and English. I quickly learnt how difficult it was to actually conduct semi-structured conversation in another language (it was time-consuming to go back and forth in Tetun then in English then back to Tetun again). To meet time constraints and ease the flow of the conversation it was ultimately best for Jaco to use the interview schedule and guiding questions to conduct the interview himself. He would indicate to me which question he was asking, and at times would translate to English. In this regard, several interviews ended up more structured than anticipated, and I was unable to ask as many follow-up questions as I would have liked, although I encouraged Jaco to ask questions in Tetun where he thought appropriate; in essence, we were co-researchers in the data collection phase.

It is worth recalling potential areas of contention from the literature regarding conducting transcultural research. First, although an interpreter may have ample linguistic skill, "being able to speak a language does not necessarily translate to cultural competence" (Casado et al., 2012, p. 4). For example, while perhaps a native speaker of the language, an interpreter may come from a vastly different socio-economic background to the research participants (Tsai et al., 2004). Simply 'culturally matching' an interpreter to the research participants is not a safeguard for conducting ethical transcultural research; rather, emphasis is placed on both the interpreter's and the researcher's ability to be culturally responsive and respectful with participants in conducting the research (Sawyer et al., 1995).

Upon my return to Wellington, recordings of the interviews conducted in Tetun were translated and transcribed by a Timorese student completing their studies at Te Herenga Waka – Victoria University of Wellington. I did not provide specific guidelines for this translation process, and the resulting transcriptions were used in the state of 'raw' translation (i.e. I did not alter grammar or syntax). While noting that this process could have been improved (e.g. through commissioning at least two different translations and then cross examining the differences), this was ultimately unattainable within the context of this research project.

¹⁷ pseudonym

Participants were chosen on the basis of their direct (or perceived) involvement in the Tibar upgrade. Though not representative of the wider gender distribution of Tibar’s waste-pickers, 4 males and 3 females were interviewed for this research (noting that one interview was a joint interview of 2 female participants).¹⁸ As identified in Figure 7, the three broad groups of participants included: Tibar waste-pickers; officials from different branches of government; and representatives from international and NG/IOs with express interest or concern in the issue. In line with a research focus on social justice, and postcolonial and transformative ideologies, waste-pickers are considered the primary group of this research.

Participant group	Name (and number of participants)			Total
Non-governmental / International organisations	Asian Development Bank (ADB) (1)	The Asia Foundation (TAF) (2)	United Nations Development Programme (UNDP) (1)	4
Local government	Dili Municipality Sanitation Department (1)			1
Central government	Secretary of State for the Environment (SSE) (1)	Ministry of State Administration (State Admin) (1)	Ministry of Social Solidarity (MSS) (1)	3
Informal waste sector	Tibar waste-pickers (6)			6

FIGURE 7: BREAKDOWN OF SEMI-STRUCTURED INTERVIEW PARTICIPANT GROUPS AND NUMBERS

Source: Author’s own

While individual participants are identified on the basis of ‘groups’, a postcolonial epistemology highlights the importance of not homogenising any of these groups’ perspectives to a single story; there is not one ‘government’ nor ‘international or non-governmental organisation’ nor ‘waste-picker’ perspective. Given the political nature of the issue, and without having a detailed understanding of the relationship between stakeholder groups, I have anonymised all participants within this thesis (see Appendix D for participant profiles and pseudonyms). Accordingly, views expressed are participants’ own, and do not reflect the official perspective of their organisation. Rather, participants’ perspectives reflect the knowledge they have formed within the context of their organisation. I had working relationships with several of the people I interviewed due to my position at UNDP. Potential conflicts of interest were managed through the University’s ethics process and consent forms (Appendix B).

¹⁸ Data collected by Magno de Côte-Real Araújo et al. (2015) reported a 7:1 male to female ratio of participants living in the nearby Tibar vicinity. Further research is necessary into waste-picker gender dynamics in the context of Tibar dumpsite.

Waste-picker perspectives are central to this research, yet identifying participants and conducting these interviews proved particularly challenging. The following passage, derived from my fieldnotes (February, 2019), details an earlier trip to Tibar with UNDP colleagues (Timorese and foreigners) who were then working on a plastic policy:

The presence of the 4WD onsite was enough for people to know we were outsiders; it is rare that pristine white 4WDs drive into the dumpsite. Despite my efforts to dress inconspicuously, I felt overly conscious that my malae presence was extremely obvious. Of course, my Timorese colleagues stood out too; we were a bunch of shiny urbanites, visibly ill-equipped to deal with the site conditions that greeted us [pictured below]. Not to mention the UNDP logo on the car, and the lanyards/ID cards swinging from our necks. People generally kept their distance from our cohort. A group of teenage boys yelled out a few derogatory (unknowingly to me) comments at us. Even without speaking much Tetun, it was immediately apparent that it would be difficult to build rapport with people in order to conduct interviews for my research. One colleague, a young journalist, shot off and started approaching some middle-aged women, who were taking shelter from the midday sun. Another woman, nearby, was making eye contact with us, so another colleague and I approached her and asked if she was willing to talk. She agreed, and we conducted some basic introductions and chatted for a while. My colleague asked if the woman might be willing to speak with me again, for the purpose of my research. The woman agreed, but did not indicate what days and times she would be available, nor did she have a contact number.

(Fieldnotes, February 2019)



As a result of this initial visit, I realised that recruiting waste-picker participants would be very informal, rather than establishing a certain time and place with selected individuals. Indeed, on the days we were out interviewing, the criteria for participation was primarily based on willingness and ability to participate, and proximity to where we had access to onsite. Other variables (such as age, ethnicity, gender, etc.) were therefore uncontrolled, except the exclusion of children (following the University's ethics guidelines).

Participants from the wider stakeholder group were chosen based on their position and connection to the issue. These individuals were identified through my preliminary research for the case study (e.g. that the ADB was working with the Timorese government on SWM); some were suggested in conversation with other participants; and others were identified by colleagues and acquaintances. Networking proved instrumental in research practice and the support of my colleagues enabled me to gain access to very relevant research participants. Participants were contacted through email, phone, WhatsApp or face-to-face to first explain the research and then to set up the interview. It is also worth noting that the environments in which these interviews were conducted were very comfortable (in quiet, air-conditioned cafes or offices) at a pre-determined time so as to not disrupt people's work – the very opposite of how the interviews played out at Tibar dumpsite.

Additional data collected throughout the research process was used to strengthen the case study analysis. Observational fieldnotes, government policy documents, and organisations' reports provided depth to the overall understanding of the Tibar dumpsite-to-landfill upgrade. This data was gathered as it became available, either through my preliminary research, or provided directly by participants or colleagues.

4.3.4 DATA: COLLECTION AND THEMATIC ANALYSIS

Thematic analysis is a widely-used analytical tool as it can be applied to many research contexts where there are 'themes' in the data. It is particularly useful for qualitative and constructivist research data (such as interviews), as it helps the researcher to elucidate participants' meanings from their experiences, while simultaneously recognising how participants' understandings are equally informed by their lived experiences and contexts (Braun & Clarke, 2006). Conducting research is of course a value-laden process. Through thematic analysis I bring together the knowledges expressed by participants (which constructivism perceives as events, realities and experiences understood and produced through participants' social contexts) while ultimately, as the researcher, I hold the pen to form these knowledges into a coherent narrative within this thesis. This narrative is informed by the theoretical framework resulting from the literature review. A key strength of using thematic analysis

is that it is malleable to the chosen theoretical lens(es), and not tied to a single epistemological stance (Braun & Clarke, 2006).

For this research, I conducted a thematic analysis of the transcribed (and translated) interview data. In practice, this consisted of listening back to interviews to hear if certain issues were given particular emphasis, reading and re-reading hard copies of all transcripts, with a myriad of highlighters and pencils. This process quickly risked descending into thematic mayhem, and required me to come back with a careful eye. For example, in order to set the scene for each interview, a series of contextual wider 'waste' issues were discussed (such as whether or not the participant thought of SWM as an issue in Dili, why/why not, what the participant's job history was, etc.). While this data did not directly inform my analysis, it was nevertheless provided a deeper understanding of participants' perspectives. The more I re-read and coded, the more I could map out indicative linkages between themes and subthemes. Once I had a good understanding of the dumpsite upgrade process, I then considered the themes in the context of waste-pickers' justice. Returning to the literature, could the dumpsite-to-landfill process, as articulated by participants, thus far be considered just? While knowledge from all participants contributed towards a holistic understanding of the Tibar dumpsite case study, I intentionally placed more emphasis on waste-picker perspectives in identifying injustices and determining what 'just' outcomes might look like. This emphasis is apparent in the subsequent findings and analysis chapters.

4.4 ETHICAL CONSIDERATIONS

Prior to conducting fieldwork, I obtained approval from Dili Municipality and the Tibar *Xefe du Sucu* (community leader). This was important to enable me to conduct research within each authority's respective constituency. This research received ethical approval from the Victoria University of Wellington Human Ethics Committee on 01 April 2019, following some revisions required by the Committee. Receiving ethical approval from an academic institution is one matter: negotiating ethics in the field requires ongoing critical reflection (Sultana, 2007), and rests heavily upon the researcher's instinctual reactions once 'in the field'.

At its most fundamental level, postcolonialism establishes my responsibility, as a *malae* (foreigner) conducting research in a postcolonial Timor-Leste, to be actively cognisant of the different experiences and power relations among participants and myself. Additionally, this research adopts a research framework and methodology derived from a predominantly western worldview and applies this framework to a cross-cultural context. Journal-keeping and frequently questioning my

assumptions (for example, ‘whose knowledge am I privileging?’ [Sultana, 2007]) helped me engage in this tricky in-between space throughout the research process. This was not easy. Sultana (2007) describes how negotiating positionality is an everyday and ongoing process in fieldwork, which brings with it discomfort and concerns that “are not captured in the ‘good’ ethical guidelines of institutional paperwork” (p. 379). This manifested in many ways in my research process, from deciding which clothes to wear on the dumpsite, to how I used my social connections to build rapport with different participants. Practicing reflexivity, I constantly evaluated my motives for conducting this research.

This section addresses the intersections of my identity and position within the research context, how this interacts with the positionality of participants in this research, and the ways in which this inevitably shapes the results (and their interpretation). As identified by postcolonial, critical, and transformative theories, practicing reflexivity and clearly establishing the researcher’s positionality (and how this impacts power relations within the research process) is fundamental in conducting ethical cross-cultural research. Power exists in all social interactions (Hay, 2010) and positionality provides a way with which to understand how characteristics (such as ethnicity, age, gender, class, or language) shape social interactions among research participants and ‘the researcher’ (Chacko, 2004). Given the cross-cultural context of this research, I first outline my positionality as a white foreigner in Timor-Leste. I then discuss the role of my circumstances, namely my personal and professional contacts, and the influence this has on the research process.

4.4.1 POSITIONALITY AND POWER

I am a young, white, female – very apparently not ‘from’ Timor-Leste. Though there is a prevalent and diverse range of foreigners in Dili (defence force personnel, diplomats, volunteers, international business people, tourists), I was still very obviously *malae*. Each interview I conducted had different power relations; I interviewed males and females, and almost everyone I spoke with was my elder. Five interviews were conducted in English, while for the rest I relied on the help of Jaco. By having an interpreter by my side for much of this research, we were at times navigating a double positionality.

When conducting this research, I was participating in an internship working on waste policy at UNDP Timor-Leste. This position proved both a blessing and a challenge. I had invaluable support from my UNDP colleagues to conduct this research: they helped me contact relevant officials, provided relevant government policy documents, and helped translate my interview questions into Tetun. My research would not have been as rich nor collaborative without the support of locally situated Timorese waste experts. On the flipside, I was often closely affiliated with the United Nations institution, which brings its own international power complex (and critiques of development and aid). For example, in an interview with another NG/IO, the interviewee was aware that I was working at UNDP, and asked me

for UNDP perspectives on wider waste work; seeking information that a researcher might not have otherwise held.

Although the identification lanyards and shiny 4WD portrayed us as outsiders at Tibar dumpsite, the UNDP affiliation brought with it a degree of political neutrality. During our first trip to Tibar (described at the beginning of this chapter), we were directly accused of being government officials who did not care about the dumpsite nor the people working there. A colleague responded that we were part of UNDP, not the government, which seemed to ease the tension. When it came to conducting the interviews, however, I made sure to rid myself of any UNDP affiliations, to present myself as 'neutral' as possible; I dressed in my waste work clothes (steel capped boots, daggy trousers, and paint splattered t-shirt), and used an old, private, and unmarked vehicle. However, positionality is ultimately relational; I cannot control how another person perceives me. Further, different positionalities build rapport differently with people (Sultana, 2007), which I was able to use to my advantage, at times. For example, in interviews with those I perceived as more politically powerful (government officials) it was useful to leverage my UNDP networks to contact potential participants and secure the interviews, as I suspected that some government officials would take me (and my research) more seriously because of my affiliation to such an institution.

In the vein of networks, it is worth noting that at the time of conducting this research my mum was then working at the New Zealand Embassy in Timor-Leste. Although I tried to minimise the influence this had on the research process, this proved quite difficult to do within the small expatriate and 'development' network we both existed in. Similar to my affiliation to UNDP, my 'proxy-diplomatic' status had both positive and negative implications on this research. It certainly proved useful in identifying and connecting with wider stakeholder participants, as it added a sense of accountability to my research and my actions. For example, when making primary contact with government officials, my UNDP colleagues often highlighted my relation to a New Zealand diplomat. I felt somewhat uncomfortable with this at first, as though I was abusing my mum's diplomatic status for my research. While status had little to do with the research I was conducting, I am cognisant of the fact that my mum's work placement in Timor-Leste was the very reason I visited Tibar dumpsite and subsequently chose this research topic. However, I was not in a position to tell my Timorese colleagues what (or what not) to do, and I was hugely reliant on their socio-cultural cues to proceed respectfully within unfamiliar contexts. Being cognisant of the status and power affiliated with government officials helped me reposition myself; perhaps mentioning my 'status' would in fact encourage officials take the research more seriously than had I just been another *malae* international student.

Another instance of navigating the status element of my positionality was during waste-picker interviews at Tibar. Having identified waste-pickers as the group with the least decision-making power within the research context, I was hyper-aware of the power relations at play, and was striving to connect and build rapport with waste-picker participants (in an attempt to conduct as meaningful engagement as possible within the constraints). Jaco began by introducing me to potential waste-picker participants as 'the daughter of a New Zealand diplomat', as a means of establishing my status. After hearing this, I quickly asked if he could instead explain that I worked at a recycling centre on a landfill back in New Zealand, as this might enable me to build some rapport and connection with Tibar's waste-pickers.

Comparing how I presented my status in these two instances, I realise that how I perceived the power of the people I was approaching for this research very much affected how I sought to position myself. Sultana (2007) describes a similar phenomenon, where the researcher alters their positionality to specific social contexts. In the instance of the waste-pickers, I was apprehensive that establishing my status as a diplomat's daughter might unintentionally coerce people into participating, or alter their responses. Yet I was using my status to advance the research agenda for the very same purposes, only I thought it was more acceptable to do so with participants who I perceived as already 'powerful'. My different approaches in establishing a relationship with different participants led me to question my own understandings of power, and how I bring these perceptions to the research process; the researcher is neither inert, nor objective.

4.5 A FUNDAMENTAL RESEARCH LIMITATION

Despite the social justice lens and postcolonial epistemological stance I have adopted, my research falls into the same trap of failing to be fully participatory or transformative (as discussed in section 4.2.1). A central limitation of my research is that I was not able to build deep rapport with the Tibar waste-pickers. Adopting a truly participatory transformative methodology (such as participatory action research) was always going to be difficult in the context of this research. In fact, it *should* be difficult. As Chatterton et al. (2010) state "just because it [scholar activism] can be hard to do well, it does not mean we should abandon it" (p. 249). Similarly, the transformative elements of this research may not be immediately apparent (nor revolutionary); it would be naïve and ethically problematic to assume that I would be able to safeguard the future of waste-pickers' livelihoods by simply conducting a research project. Practicing reflexivity and situating my role in the research helped me realise that the real transformative elements of this research will perhaps be less tangible, and are more likely to be the results of my actions while conducting research. For example, in interviews with the wider

stakeholder group, relevant actors and policy-makers in the Tibar upgrade were directly encouraged to consider the future of Tibar waste-pickers' livelihoods. Simply discussing waste-picker livelihoods provides momentum (albeit intangible); it tables the issue. I openly advanced the idea that waste-pickers *must* be considered central in the upgrade process because, after all, the researcher is neither objective nor inert. Although I tried to avoid projecting my values into the stakeholder interviews, my motives were nevertheless transparent. According to transformative theory, politically motivated research is not necessarily a bad thing, rather, it is *necessary* for social change (Creswell, 2014).

My research emerges from a postcolonial and transformative epistemology, while simultaneously recognising the practical challenges in conducting true participatory transformative research (as articulated by Chatterton et al. [2010], Gibbs [2001], Mertens [2010], Sultana [2007], and Tuhiwai Smith [1999]). Meaningful transformation in this research therefore hinges upon the tangible outputs of this thesis (e.g. through feedback to participants and associated reports), as well as peoples' engagement in the process, including colleagues, friends, and participants. I continue to question whether my research is ultimately ethically just. However, the moral baseline should be to respectfully engage in culturally sensitive research which does no harm to participants, especially Tibar's waste-pickers.

CHAPTER FIVE

CASE STUDY: DAILY OPERATIONS, PRELIMINARY FINDINGS, AND THE BASIS OF ENVIRONMENTAL AND PROCEDURAL JUSTICE AT TIBAR DUMPSITE

The following italicised excerpts are from my fieldnotes of a UNDP site visit to Tibar dumpsite in February 2020:

As we drive into the dumpsite, our cohort catches the attention of a group of teenage boys hanging out in the shade of a tree, on the hill beside the track.

This was my second site visit to Tibar, I had just been working on my research ethics application and - acutely aware of the United Nations logo emblazoned on the white 4WD we were in - I was apprehensive, to say the least.

Some of the boys run towards the car and begin heckling us from the banks.

At the time, I thought this to be pretty harmless stuff. As a *malae*, you often receive this sort of reaction driving through parts of central Dili.

We pull off the main track to let an oncoming truck pass. Our driver reckons this is a good place to stop. We empty out of the 4WD, some taking photos and others begin to approach people who are taking shelter from the midday heat, nearby.

In a later interview, a colleague from UNDP, Ursula, recounts this visit:

... a lot of them [waste-pickers] see visitors as threatening to them. If you try to talk to them... but only one lady was friendly and talking to us, you know, laughing. I mean she sees us as fun and she talks openly about what she does, but others really stepped back and say something like 'a lot of people come and promise, but we didn't get anything'. So, I think a lot of people or organisations might have been, I don't know, maybe promise, or say something that they will help them and then it didn't happen, maybe. Yeah, because there were some things that they were shouting at us, or kind of stepped back and didn't want to talk to us. So that's my impression. Could be wrong. But I think a conversation with them needs to start.

- Ursula

Here, Ursula identifies several issues associated with procedural injustice: waste-pickers have previously been approached by outside organisations, perhaps on numerous occasions, and that some are dissatisfied that nothing tangible has resulted. Ursula also highlights the risk of participant fatigue: waste-pickers may, understandably, be unwilling to engage (in this research and with officials). Lastly, Ursula indicates that a conversation with waste-pickers needs to happen. Two critical questions

remain: has anyone engaged with Tibar's waste-pickers specifically on the proposed dumpsite upgrade?

Due to the rich and interlinked nature of the research findings, the following chapters are structured as follows. Chapter 5 presents the data to demonstrate the complexity of Tibar dumpsite's working environment and peoples' perspectives and experiences of it. These findings form the basis of the subsequent environmental justice argument, focused on the unequal distribution of health costs that Tibar's waste-pickers bear. This argument feeds into a discussion of racial capitalism set against an analysis of waste-pickers' agency. Chapter 6 presents participants' understandings of the progress, governance, and waste-picker inclusion within the dumpsite-to-landfill upgrade. Accordingly, I present a procedural justice analysis of the upgrade process thus far. I then summarise people's expectations for waste-pickers' livelihoods within the proposed upgrade, and discuss these within the context of social justice, more broadly. A dichotomy emerges between stakeholder intention and their actions contributing towards realising these intentions. Chapter 7 then explores this dichotomy within a wider discussion of barriers to justice, which emerge as reoccurring themes throughout Chapters 5 and 6.

5.1 DAILY OPERATIONS OF TIBAR DUMPSITE

Well... about working here... I would say this place is not only for people from Tibar, but for all people. We work in this place because we can earn some money to help our children to go to school, and to support our families.

- Jose

In line with a postcolonial epistemology, the following description of the Tibar dumpsite 'reality' primarily emerges from waste-pickers' perspectives, with personal observations, fieldnotes and additional stakeholder views brought in to add richness where relevant. Broadly, this section describes the informal and formal daily operations at Tibar, the social dynamics at play onsite, and waste-picker demographics.

5.1.1 FORMAL ORGANISATIONAL AND MANAGEMENT STRUCTURE

Below, Marco (the Dili Municipality official) describes how Tibar dumpsite has evolved since Timor-Leste gained Independence, and the challenges that remain for site management:

[...] during the Indonesian occupation the installation of the dumpsite was well organised. It was most likely to be called a landfill. However, after the occupation, there were no waste management established and organised in the Tibar dumpsite. Even in the present, the waste management in dumpsite is still unorganised. Unfortunately, there are no instructions and there are no site-managers/technicians to give advice on well waste management.

- Marco

Several stakeholder interviewees (Ursula, Marco, David) recall that waste management was more effective under both Indonesian and Portuguese occupation, though it must be noted here that global production and consumption trends (and the subsequent exponential waste generation) are incomparable to 30 and 50 years ago. This reportedly effective solid waste management under both Portuguese and Indonesian rule is important to unpack, particularly within a postcolonial epistemology. Given its recent Independence, Timor-Leste is in the process of rebuilding (and in some instances establishing) its governance institutions and infrastructure. Certainly, compared with Portugal and Indonesia (both considerably larger states), Timor-Leste has had fewer resources to invest in solid waste planning and management.

This institutional and infrastructural ‘catch-up’ is represented by the ever-changing governance structures for Dili’s SWM, paired with an outdated and failing SWM system. David (an established government official) hinted at institutional instability throughout his career: within 11 years, the governing authority for SWM has not only transferred three times, but has also been devolved to local government level. These shifts in governance translate to significant institutional barriers to the effective management and decision-making pertaining to SWM policy. Meanwhile, Dili’s SWM system has remained the same since 2008: the same vehicles, same budget, and same human resources (David). It is commonly recognised by research participants, members of the public, NG/IOs, and the GoTL that this current SWM system is not delivering. Marco himself recognised that “the maintenance of the dumpsite itself is not adequate [...] our waste management in Tibar dumpsite is unorganised”.

Dili Municipality was widely recognised by stakeholder participants (Andreas, Ursula, Marco, David), as the responsible authority for Tibar dumpsite and the implementing body for Dili’s SWM system, with the Ministry of State Administration providing wider policy direction (David). The formal

management structure (and decision-making hierarchy) for Tibar dumpsite, as ascertained through my research, is depicted in Figure 8:

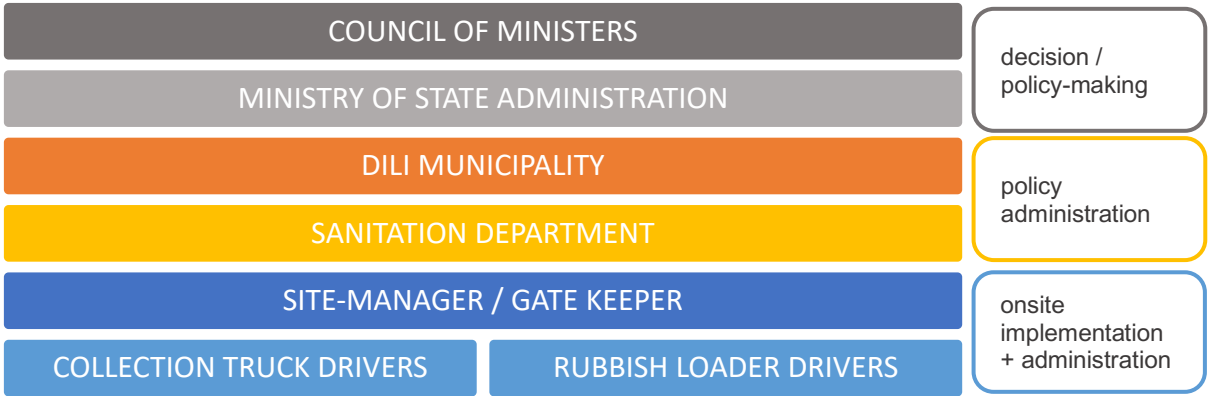


FIGURE 8: FORMAL WASTE DISPOSAL MANAGEMENT GOVERNANCE STRUCTURE
Source: Author’s own

The extent of Dili Municipality’s onsite presence is limited to: the stream of official rubbish trucks which frequent the site (identifiable by their yellow colour and green identification number [pictured in Figure 9]); a small office where a Dili Municipality official documents the vehicles; and the two loading trucks that shift the burnt waste into the allocated disposal zones (Marco; Fieldnotes, March 2019).



FIGURE 9: A MUNICIPAL RUBBISH TRUCK EN ROUTE TO TIBAR DUMPSITE

5.1.2 THE CROSSOVER OF INFORMAL/FORMAL SWM

[Tibar] is just a site where to accumulate waste [...] however, the maintenance of the dumpsite is not adequate [...] because most waste from the city were dumped unorganised, community will burn them, and then will be filled into land prepared by Dili Municipality officials. This procedure is merely done to create more space and access to the dumpsite.

- Marco

Because waste arrives onsite mixed (i.e. not separated into discrete waste streams), waste-pickers burn the waste to expose (recover) the scrap metal. The burnt waste, Marco explains, is then shifted into land prepared (allocated and dug out) by Dili Municipality's bulldozers. Above, Marco directly identifies the dependency between the informal and formal waste disposal operations at Tibar dumpsite, and the function of waste-pickers within Dili's SWM (depicted below in Figures 10 & 11).

Waste generated at household / business level >

> disposal in *bak sampha* (allocated brick-and-mortar collection sites) >

> rubbish truck collection >

> disposal in Tibar >

> trucks recorded by Dili Municipality official >

> sorting, burning (reduction) and resource recovery by waste-pickers >

> collected metals sold to external dealers <

> loaders move the burnt waste to allocated disposal zone

> = formal SWM

> = informal SWM

FIGURE 10: BASIC INFORMAL/FORMAL SWM PROCESS FROM DILI TO TIBAR DUMPSITE

NB: Arrows depict waste stream 'flow'

Source: Author's own



BASIC SWM PROCESS IN DILI [FORMAL AND INFORMAL]



BASIC SWM PROCESS (IN LINE WITH WASTE HIERARCHY PRINCIPLES)

FIGURE 11: WASTE MANAGEMENT PROCESS COMPARISON: DILI'S SWM SYSTEM AGAINST A BASIC SWM PROCESS Source: Author's own

5.1.3 INFORMAL DISPOSAL MANAGEMENT AND RESOURCE RECOVERY

In addition to providing a central function of Dili's waste disposal management, waste-pickers' work also significantly contributes towards (and, as I will argue in the following analysis, essentially constitutes) Dili's resource recovery and recycling sector.

Well, about this place and my work, I would say that because everything here are still valuable, it means we can earn money from them. - Silvio

Here Silvio has highlighted that waste-pickers' work is based off the premise that waste represents value. In recovering this value from the waste dumped at Tibar, waste-pickers facilitate the return of that value to the economy, and in doing so enable the recycling of material that would have otherwise been buried in the dumpsite. This process occurs informally, not officially recognised or facilitated by the state (see Figures 10 & 11).

A rubbish truck drove past while we interviewed Silvio. Once it reached the operational dumping pit, a good 20 metres away, Silvio described "they [the truck] are unloading rubbish that they collected, those people on the truck are selecting metals and aluminium as well as cardboards and separating them from other rubbish". The main objective of waste-picking at Tibar is to collect metal for on-selling. In lieu of or in addition to metal, people (such as Penelope) collect food scraps and green-waste for cattle fodder, and plastic bottles (see Figure 12). Every waste-picker interview participant, bar one, stated their primary purpose was to collect metal such as aluminium and tin cans, corrugated iron, metal in electronics (wires, televisions, gadgets, etc.). The collected metals are sorted into piles (pictured in Figures 13 and 14). Reportedly, metal dealers from Singapore come onsite to weigh and

then pay for the goods - “yes, they just left!” (Jose). Jorge reported earning up to 5 to 6 cents per kilogram, but the prices vary, primarily dependent on the type and quality of metal collected - “we like the most aluminium and copper because it costs higher than scrap metal” (Peter).



FIGURE 12: BOTTLE COLLECTORS MAKING THEIR WAY OUT OF TIBAR DUMPSITE



FIGURE 13: COLLECTION PILE OF SCRAP METAL (LEFT) AND SUN SHELTER (TOP RIGHT) NEXT TO TIBAR DUMPSITE



FIGURE 14: COLLECTION PILE OF TIN AND ALUMINIUM CANS ON TIBAR DUMPSITE

With limited Dili Municipality presence and management, Tibar dumpsite's daily operations are predominantly informal, yet semi-organised through waste-picker groups. This was observable onsite, with people usually (though not exclusively) clustered in family groups, either working in the truck disposal zone, searching through burned waste, or sheltering together from the heat (Fieldnotes, February and March 2019). Family group membership was reported by several interviewees:

- | | |
|---|-----------|
| I come here with all my family members, so sometimes seven of us. | - Peter |
| Yes, I am here with all my family, my husband and my children. | - Juanita |
| Yes, we [my family and I] are here together. | - Jorge |
| [...] work [here] with family [...] many friends as well. | - Silvio |

Broadly, Tibar's waste-pickers seem to be guided by an 'elder brother', Jose, who made his presence known to us shortly after we arrived to conduct interviews (Fieldnotes, 2019). Jose tells us he has been working on Tibar dumpsite since 1991, and described himself as:

a civil, I am not working for government. I am here as elder brother of these people, I console and advise them about working in respect and friendly working environment. I usually tell them to respect things that belong to others, and ask for each other when they need something.

- Jose

Jose clearly stated that he is not working for the government, nor is he in contact with government officials. The relationship that Jose has with the scrap dealers, if any, was not elucidated by this research. Jose's explicitly stated lack of contact with government (described on page X, section X) signals a potential reluctance towards (or lack of trust in) government representatives and/or institutions. Given his prominent role onsite, this suggests that many waste-pickers are perhaps not involved in established or ongoing engagement with the government regarding the dumpsite-to-landfill upgrade.

Drawing upon Wilson et al.'s (2006) informal sector hierarchy (Figure 1), waste-picker individuals are situated at the 'bottom' of the informal management hierarchy, in terms of their relative power to other informal actors. Figure 15 presents a basic adaptation for Tibar dumpsite, noting the potential relationship pathways that may exist between waste-picker individuals, groups, Jose (the elder brother figure), and the metal dealers.

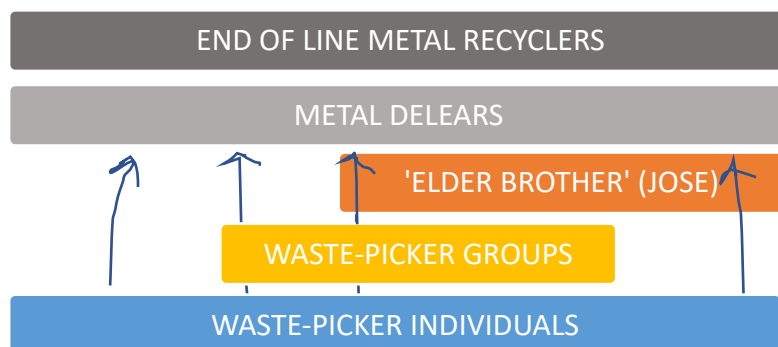


FIGURE 15: INFORMAL RECYCLING DISPOSAL MANAGEMENT STRUCTURE AT TIBAR DUMPSITE
Note: Arrows depict potential relationship pathways from waste-pickers to intermediary metal dealers
Source: Author's own

5.1.4 TIBAR WASTE-PICKER DEMOGRAPHICS

Most waste-pickers interviewed for this research have been working at the Tibar dumpsite since the Indonesian occupation: Jose started in 1991, Silvio in 2002, Peter in 2011, while Juanita, Maria, and Jorge simply stated they had been doing this work 'since Indonesian occupation' (interpreted to be

any time before 1999). Juanita shared that she is originally from Kefa (a province in Indonesian West Timor).

Estimates, both official and otherwise, of the number of people waste-picking at Tibar vary considerably. Tatiana (of TAF) understood it to be four or five families, but stated “I don’t know if that’s correct or not”, the ADB (2015) records 60 people, waste-pickers’ estimates range anywhere from 60 (Silvio) to “hundreds” (Jorge).¹⁹ Peter stated he had a list of all the names of the people working onsite - his latest list counted 73 people. It is also unknown whether these estimates include the many children who are visible onsite (either playing, resting in the shade, picking through waste themselves, or sitting on incoming rubbish trucks). Dili Municipality list roughly 50 people waste-picking onsite, and that this number excludes children (Marco). These wide-ranging estimates among waste-pickers and wider stakeholders suggest that the demographics onsite are dynamic and ever-changing - “there are some new faces around, people coming... changing...” (Silvio). The total number of waste-pickers onsite ultimately remains unknown. Stakeholders’ lack of cohesive information regarding waste-picker demographics flags a wider issue of information asymmetry among stakeholders, which may cause negative implications further down the line. How can government (or NG/IOs) adequately plan for waste-picker alternative livelihoods or their integration in future landfill operations if there is little consensus of how many people currently work onsite, and what their capabilities are?

One of the first things I sought to determine through my research was whether waste-pickers were living on the dumpsite itself. From initial scoping, I had understood most waste-pickers to live onsite; the ADB’s 2015 *SWM Country Snapshot* states that “there are many families living on the dumpsite” (ADB, 2014, p.2). Similarly, Magno de Côte-Real Araújo et al. (2015) report “There are families living in the dump, and their main occupation is waste-picking” (p. 67). Elsewhere, waste-pickers living onsite has been reported as a significant challenge in other dumpsite-to-landfill transitions where waste-pickers are not only denied access to their livelihoods, but also displaced from their homes (Paul et al., 2012; Sembiring & Nitivattananon, 2010). Conversely, my findings indicate that most waste-pickers do not live on Tibar dumpsite; many live in the nearby Tibar area, while still others commute daily from municipalities further afield. Juanita and Silvio reported that most people come from Tibar village and nearby districts such as Dili, Ermera, and wider Liquica (depicted in Figure 16). Jose believes the Tibar waste-picker demographic to be even more widespread: “People from all the districts are here, I think”.

¹⁹ NB: it is difficult here to distinguish hyperbole from estimates.

IMAGE AVAILABLE AT:
https://www.researchgate.net/figure/Map-of-the-districts-of-Timor-Leste_fig1_323105559

[REDACTED] FIGURE 16: MAP OF THE DISTRICTS OF TIMOR-LESTE

Source: Freire et al. (2017, October). *"Fatuk-kuak hosi Timor Lorosa'e": Caves of Timor-Leste* [Paper presentation]. 17th International Congress of Speleology.

The many huts and lean-tos onsite (pictured in Figure 13) are used as shelter from the smoke, sun or rain during the day. This may explain why some report there to be people living onsite, perhaps they had understood these shelters to be waste-pickers' permanent homes. This disparity is perhaps further explained by the fact that some people (myself included) refer to the dumpsite as 'Tibar', whereas Tibar is the wider community within which the dumpsite is situated. For instance, when asked 'do most waste-pickers live on/in Tibar?', knowing that many waste-pickers live in the nearby Tibar surrounds, it is logical for someone to respond 'yes, most people live in Tibar'. My interpreter, Jaco, and I discussed this very distinction during our interview with Penelope, which resulted in him clarifying that "they just come here to just pick it, and they go back; they don't live here". This research understands that no waste-pickers live on Tibar dumpsite. However, noting the small sample size, this does not rule out the possibility that people may indeed live onsite and therefore may be further impacted by the dumpsite upgrade.

All ages were present on site and research participants appeared to range from 18-60 years old. As far as could be observed, the majority of people present on Tibar dumpsite were children; on each site visit (including the one I went on in 2017 before this beginning research), the ratio of adults to children/young children (under the ages of 16 and seven, respectively²⁰) appeared to be at least two children to every one adult, and many kids can be seen waste-picking in the streets of central Dili. Stefan (Ministry for Social Solidarity) highlights the social risks for children waste-picking:

²⁰ These age categories are as defined by the Victoria University of Wellington Human Ethics Committee.

Children might lose opportunities to grow and access adequate education when they find activities in the dumpsite more comfortable than others, also when they find it as their earning source. Some children might go to school, but [...] because they spend much of their time in the dumpsite [...] They will not have time to play, socialise, and participate in extracurricular activities.

- Stefan

It is unclear whether children were at Tibar dumpsite to work or whether they were there for other reasons, such as to be with caregivers outside of school hours. I wish to steer clear of problematic, predominantly western, narratives which correlate children's presence on Tibar dumpsite with neglectful parenting or extreme poverty, as this makes negative assumptions regarding the circumstances of waste-picker families and deflects criticism of the wider systemic socio-economic causes of waste-picking. The common aim is to minimise the harm of waste-picking on children; indeed, one of the most reported justifications for waste-picking was to pay for children's school fees (section 5.3 discusses).

5.1.5 SOCIAL DYNAMICS

Waste-pickers generally arrive onsite in the morning and stay until sundown: "well, this is what we do every day. We start here early in the morning and we brought our lunch with us, so that we can stay a bit longer and work 'til the end of the day" (Peter). Most waste-picker interviewees stated that they come to the dumpsite every day. Although it is difficult to ascertain exactly what 'every day' means in this context (i.e. every working day, or every day excluding Sunday²¹), waste-pickers intend to be onsite as often as possible, following the rationale that 'the more metal you collect, the more money you get'. As Peter puts it, "people who are fast will collect more than those who are slow"; the nature of waste-picking is resource competitive, therefore any day spent offsite may reduce potential income. When asked what happens if newcomers arrive onsite, we received responses such as "other people do not come here" (Maria) and "only we can work here, other people are not allowed" (Juanita). Gaining entry to conduct waste-picking at Tibar seems challenging, alluding to the competitive nature of the work, while also suggesting that the social dynamics onsite are close-knit family/friend groups that collectively form some sort of bigger community (or communities).

On the site visit described at the beginning of this chapter, I observed both the competitive nature of waste-picking and the intricacies of waste-picker group dynamics through an interaction between the aforementioned teenage boys and a younger boy, aged 5 or 6, who was riding on the back of an

²¹ As 90% of Timorese observe Catholicism (GoTL, 2020), attending Sunday Mass is common practice.

incoming rubbish truck. Closer up, we could see the little boy was crouching protectively over something in the back of the truck – a sheet of corrugated iron. *As the truck drew nearer, the teenagers caught sight of it and began running down the bank, yelling and whooping. The boy bent lower over his treasure and stuck his chin out defiantly. Two of the teenage boys sprint ahead and fling themselves into the back of the truck, and tussle with the little boy for the corrugate. Outnumbered and outsized, he soon grudgingly shifted away to sit on the edge of the truck, while the teenagers claimed their prize. The truck driver glanced into his rear-view mirror, and continued driving into the pit* (Fieldnotes, February 2019). This instance signals that Tibar’s waste-picker dynamics are certainly more complex than a homogenous, idealised ‘waste-picker community’.

5.2 PERCEIVED NEGATIVE IMPACTS OF TIBAR DUMPSITE

Arriving into Dili, you can usually see smoke rising from the west, behind the city centre (pictured in Figures 17 & 18). The sheer size of the smoke plume is impressive. Without visiting the dumpsite, one can imagine the harsh working conditions waste-pickers face every day, amongst the smoke and hazardous waste, in temperatures of 30+ degrees Celsius. The health and safety officer from Wellington’s Southern Landfill would certainly have a field day at Tibar dumpsite. This section reports the challenges that waste-pickers face from the perspectives of waste-pickers themselves and other stakeholders. There is consensus that waste-pickers are exposed to harsh working conditions and significant occupational hazards. Though these challenges are perceived and not necessarily quantified, this consensus informs the environmental justice analysis in section 5.4.2.



FIGURES 17 (ABOVE) & 18 (BELOW): ARIAL IMAGES OF SMOKE RISING FROM TIBAR DUMPSITE
Source: Adam Messer (2019)



Waste-pickers' most frequently reported challenges were smoke, dust, and hot sun (Peter; Silvio; Jorge; Jose), for example: "Smoke... it makes sore eyes" (Jorge). My colleague shared that a woman she spoke to often goes to hospital with stomach or back ache (Fieldnotes, February 2019). Other difficulties included the labour-intensive nature of work (Jorge; Maria) and inter waste-picker conflict: "we fight over the metals and other things we collect" (Peter).

The wider stakeholder group identify many difficulties identified by waste-pickers. For example, Ursula (of UNDP) stated "From the short visits we went on, I think it's pretty bad. You know, for staying there every day, the risks that those communities get from being there, bugs, things like that. Because there is smoke, insects, flies... everything". Therese (TAF) similarly shared: "All sorts [of waste goes to Tibar], and they don't categorise what is the most dangerous [...] The conditions [at Tibar] are really poor. Like they are barefoot, they didn't have any protection or anything [...] I went there and I couldn't imagine myself living near that place". Tatiana (TAF) perceived the implications for waste-pickers as: "Oh massive! Open fires of waste, and living by waste and sleeping by waste and working with waste all day with no sort of protective equipment, I Imagine it is terrible". As seen in their initial reporting from 2015, the ADB organisation also recognises waste-pickers' risks. This is reflected by Andreas who, when asked about the health impacts of waste-picking, responded "not good for sure. With all that waste that is burning, those people are breathing in that hazardous smoke". While noting

that the “Secretary State for Environment does not directly talk about the impact of the landfill to the community’s health”, Ana reported that “The environment around the dumpsite is polluted; air, land and water pollution. This might cause diseases such as diarrhoea” and “there is no effective waste management in the dumpsite area, including the waste pickers do not have any safety instructions to conduct along with, which might create a high risk for those people”. Though these ‘risks’ are not elaborated, Ana continues “those activities that people do in the dumpsite is harmful to their health [...] The government should create a working condition that protects them from those harmful conditions”. Ana stated that the Secretary State for Environment do not have any studies on Tibar dumpsite’s impacts due to limited funding and no facilities or equipment. This lack of cohesive government data is a reoccurring theme throughout my research, not just pertaining to waste-pickers’ health outcomes or the negative impacts of Tibar dumpsite’s current operations. Again, this reflects wider institutional challenges for the government, and reiterates that Timor-Leste is in the process of building its reporting and governance capacities.

David reported that waste-pickers facing breathing problems, including Tuberculosis, attributing this information to a Dili Municipality report. Yet Marco (Dili Municipality) was the one stakeholder who held divergent views: that waste-pickers are generally healthy: “Many people say that, those people who work in the dumpsite are unhealthy. I think they are healthy, as they eat and drink well and don’t have any health problems. We could see that these people adapt to the environment”, though he stated that this understanding was not based on any study but “on my general observation only”. It is important to reiterate that these views are not necessarily reflective of the entire authority and, as this particular interviewee was one of the key people involved in the management of Tibar dumpsite, he may have been unwilling to identify the health risks faced by Tibar’s waste-pickers on record. Conversely, Marco also stated: “it is true that the site produces massive smoke every day. The smoke seems to concentrate more around the dumpsite area which affects not only the nature but also the community that access and live around the dumpsite. [...] The trees around the dumpsite are actually protecting the rest of nature, as well as wide Timorese community [from the smoke]”. This passage suggests that Marco recognises that the smoke does impact the community, signalling potential misinformation or uncertainty within Dili Municipality regarding the human health impacts of Tibar dumpsite’s current operations.

5.3 RATIONALES FOR WASTE-PICKING: INCOME AND AUTONOMY

Despite the challenges waste-pickers face every day, many have been waste-picking at Tibar for much of their lives, some since the Indonesian occupation. When asked by a colleague of mine ‘[why not other work?]’, one person responded ‘[I don’t want to find another job. I am accustomed, I have been

doing this for a long time]’ (paraphrased from Fieldnotes, February 2019). Though not representative of all waste-picker perspectives, this signals that some have chosen to continue waste-picking for decades, and would continue doing so, because they are comfortable and skilled at it. Additional reasons for waste-picking include the livelihood narrative, the potential for decent and frequent income, and autonomy to work on their own terms. Collectively, the reasons presented in this section prove integral in the discussion around future outcomes for waste-pickers in the proposed dumpsite-to-landfill transition.

Most participants (Ursula, Andreas, Tatiana, Therese) from the wider stakeholder group attributed waste-pickers’ presence on Tibar dumpsite out of financial necessity, aligning with the mainstream development ‘livelihoods’ narrative. For instance: “their livelihoods are dependent on this waste [...] We need to find out what the reason behind it is. Is that because it’s easy for them just to collect and sell? Is it maybe because they don’t have capacity to do other things? To find jobs? Maybe they don’t have land to grow things that can sell” (Ursula).

Most waste-picker interviewees reported a degree of job-satisfaction: six waste-pickers (Juanita; Jorge, Silvio; Jose; Peter; Maria) reported that they like their work, some attributing this directly to income: “I love my job because from these scrap metals I can feed my children. It’s not much, but I earn something here” (Jorge), while others were somewhat philosophical: “Because it is our life, right?” (Silvio) and “It is the solution for my life, therefore I have to love it” (Peter). All waste-picker participants mentioned financial incentives as a driver for their waste-picking on Tibar dumpsite. Of this, six waste-picker participants specifically stated that the money earned from recovering waste resources at Tibar helps fund their children’s education and covers other household and family needs:

“Working in the dumpsite has helped us a lot in our lives, some of us have worked here since Indonesian time. With this work, we are able to send our kids to school, and look after their needs and the household.”
- Maria

“I found out that we don’t have money to pay our children school fee, so we came here to earn some.”
- Juanita

“It helps us to send our children to schools and to take care of household needs.”
- Jorge

“Working in this place is because we could earn some money to help our children to go to schools, and to support our families.”
- Jose

Some waste-pickers reported that they began waste-picking because they or their partner had no other source of income (e.g. “My husband does not have any job” [Juanita]), or due to issues with previous employment (e.g. Peter was once an electrician). But the drivers behind waste-picking go beyond the base ‘livelihoods’ narrative. Above, Juanita alluded to a lack of choice to her being there, or perhaps that wider social and economic systems compelled her to begin working on the dumpsite. Meanwhile other waste-pickers reported earning a decent living; they are not necessarily waste-picking simply because they have no other alternative, but because waste-picking presents an attractive income. Some people reported earning USD\$40-50 per month (Maria), while others reported earning *USD\$60-70 in a week or two* (Fieldnotes, February 2019). By comparison, the median per capita monthly income (including in-kind income and imputed rent) is \$40 per month (La’o Hamutuk, 2011). Indeed, *several of my Timorese colleagues seemed shocked to learn that waste-pickers could earn this much* (Fieldnotes, February 2019).

Waste-pickers’ income is not as secure as a formal wage or salary; earnings from waste-picking are ultimately dependent the quantity and quality of the metal collected, and how frequently the scrap dealers purchase it. Although this compromises waste-pickers’ income stability, some waste-pickers expressed their satisfaction with this more frequent payment. People are able to work as often as they choose to: “for me, the best part is that I can make money every time I come in and work here” (Peter). It is widely recognised that monthly pay²² can prove challenging for household budgeting, comparatively, earning money every week or two presents a real benefit. And although waste-pickers’ income is not necessarily stable, many presented the dumpsite as a long-standing source of income, since 1991 for Jose. A further reported benefit of waste-picking is the degree of autonomy that waste-pickers experience, which was signalled by Oteng-Ababio (2011) in the literature. Within the context of Tibar dumpsite, Jose summarises autonomy as “in this work we don’t have people to order us around. Many people like to keep coming and working here because they work independently with no strict orders or regulations”.

5.4 DISCUSSION 1: JUST EXPOSURE

Before proceeding to the findings specific to the upgrade, it is important to first unpack the implications of the rich findings above and what this indicates for justice at Tibar dumpsite. The following environmental justice analysis presents the basis for procedural justice and waste-picker inclusion within the dumpsite-to-landfill upgrade process, discussed in Chapter 6.

²² From talking to friends and colleagues, monthly pay is seemingly common-practice in Timor-Leste (Fieldnotes, April 2020).

5.4.1 WASTE-PICKERS: AN OVERLOOKED YET FUNDAMENTAL ELEMENT OF DILI'S SWM SYSTEM

In the absence of formal management, Tibar's waste-pickers are providing the public service of managing Timor-Leste's waste. As discussed in the literature review, waste-pickers (and the informal waste sector) play a central role in SWM, often in the absence of government services (Hoornweg & Bhada-Tata, 2012; Wilson, Velis & Cheeseman, 2006). Research has demonstrated that oftentimes it is the lack of formal SWM that drives the informal sector into existence (Kubanza & Simatele, 2016; Oteng-Ababio, 2011). My findings suggest that the lack of formal disposal management is what presented Tibar dumpsite as a potential source of income for waste-pickers, particularly during the transition between Indonesian occupation and Timorese Independence, given the many years waste-pickers have been onsite.

Local authorities should be acknowledged for having some onsite disposal management (notably, semi-organised disposal zones and soil cover efforts [ADB, 2015]), yet the negligible presence of formalised management at Tibar dumpsite directly illustrates government failure to provide adequate waste disposal management. Besides Dili Municipality's 40 waste collection trucks and 2 diggers, Tibar's waste-pickers constitute the majority of the labour for managing waste disposal on the dumpsite. In their daily operations (which requires the burning of organic matter), Tibar's waste-pickers minimise the amount of waste in the dumpsite, effectively extending its longevity. This also decreases the financial costs of waste disposal for the responsible authorities, not only because waste-pickers constitute the majority of the labour force onsite (at no cost for local authorities), but also through reduced infrastructural costs: landfills/dumpsites have finite holding capacity, therefore because burning reduces the volume of waste, waste-pickers are reducing the urgency for procuring and developing another site.

Not only do waste-pickers comprise the disposal management at Tibar dumpsite, they enable informal recycling in a country where the recycling sector is otherwise negligible. This echoes Wilson et al. (2006), who identified that the informal recycling sector constituted 80% of Cairo's recycling. In section 2.1, the waste hierarchy establishes waste minimisation, reuse, recovery, and recycling as preferable waste outcomes to disposal within contemporary SWM policy. While the practical application of the waste hierarchy differs for each SWM system²³, it nevertheless establishes that disposal, although somewhat inevitable, is the least desired outcome for resource streams. Returning

²³ For example, resource recovery could mean energy recovery from waste-to-energy, or it could be waste-pickers burning through organic matter to expose scrap metal.

briefly to Harvey's (2014) transformative value of waste, waste-pickers' recognition of the value of waste materials is what drives Timor-Leste's informal waste and resource recovery sector, aligning with contemporary SWM targets for reducing waste to landfill (dumpsite) more so than the formal sector - as of May 2019, there were no formal processing plants or systems for recyclable materials such as glass, paper, plastic and metal. However, several private businesses were stockpiling recyclable materials and investigating the feasibility of different processing technologies. One of Timor-Leste's recycling success stories was Besi Tua, a small-scale metal collection business which evolved from a handful of individuals collecting aluminium and tin cans to a workforce of around 50 people doing organised waste-picking for metal (Fieldnotes, March 2019). Given Timor-Leste's geographic size and location, it is highly reliant on freight shipping to export recyclable goods. Due to legislative barriers that were recently introduced, the cost of exporting metals outweighed the prices received, unfortunately forcing Besi Tua to cease operations. Subsequently, international organisations such as Project Everest²⁴ have established small-scale recycling collection for cans, glass and plastic bottles. At the time of conducting this research, Project Everest were facing issues with securing export markets and storing recyclables (for instance, sun exposure deteriorates the quality of plastic bottles). In addition, several small-scale local initiatives and pro-recycling organisations collect some waste materials for creative reuse, remaking, and 'upcycling' purposes. While useful for promoting positive waste messaging, these initiatives are small-scale do not involve or facilitate recycling (where recycling refers more specifically to chemical or physical *reprocessing* of waste materials). Furthermore, as these initiatives are run by communities or local businesses, by no means are they substitutes for government's failure to provide formal recycling infrastructure and services.

Waste-picking has occurred at Tibar dumpsite long before Independence, which equates to more than two decades of waste-pickers providing an integral public service in the absence of formal SWM management²⁵. This connection is highlighted through an integrated SWM lens, which places emphasis on the interconnections of solid waste management systems, rather than the discrete value of each of its parts (Rodic et al., 2010; Wilson et al., 2013). In other words, waste-pickers' informal disposal work at Tibar dumpsite enables the continued operation of Dili's entire SWM system, from waste generation to municipal collection.

My research findings have demonstrated the integral role that Tibar's waste-pickers play in Dili's SWM process. Waste-pickers are not only valuable participants in but also experts of Tibar dumpsite's SWM

²⁴ See: https://res.cloudinary.com/crowdicity-eu-cld/image/upload/180205_ERS_Business_Plan_01_LP_fry5xp

²⁵ There is arguably a case for the state to recognise and recompense waste-pickers for their public service contribution.

operations, and could provide valuable insight in the dumpsite upgrade process (e.g. material types, volumes, relationships with scrap dealers and recyclers, etc).

5.4.2 ENVIRONMENTAL INJUSTICE: THE UNEQUAL IMPACTS ON TIBAR'S WASTE-PICKERS

Waste-pickers and wider stakeholders broadly perceive waste-picking as a hazardous occupation. The smoke from burning fires onsite negatively impacts waste-pickers' health, the health of those living in the nearby Tibar community, and additionally contributes towards Timor-Leste's emissions profile. My findings demonstrate that there is consensus that the smoke presents severe environmental and health hazards and ought to be ceased. Indeed, this was part of the rationale for the ADB's proposal (ADB, 2015).

This research does not, however, attribute these toxic emissions to waste-pickers' actions; the smoke reflects failures of the wider waste management system. The toxicity of the smoke is exacerbated as Dili's SWM system has no source-separation or infrastructure for recycling streams. This demonstrates the interdependency of discrete SWM elements, in this case disposal outcomes (i.e. toxic smoke) is a result of poor waste stream separation and lack of recycling infrastructure. This interdependency supports the case for an integrated approach to SWM proffered by Rodic et al. (2010) and Wilson et al. (2013), where in order to improve outcomes of any SWM element, it must be considered within the context of the wider system. As Marco mentioned, because the waste arrives on the dumpsite mixed, it drives the need for waste-pickers to burn the waste in the first instance.

In managing Dili's solid waste, Tibar's waste-pickers are disproportionately exposed to significant health risks. This provides further evidence to the literature on the inequalities of SWM on informal waste workers, outlined in section 1.1.2, namely: Medina (2000); Hoornweg & Bhada-Tata (2012); Martuzzi et al., (2010); The World Bank (2018); and UN-HABITAT (2020). My research presents a case of environmental injustice, on the basis of socio-economic status: waste-pickers are managing waste that is arguably generated by Dili's wealthier urban residents. Tibar's waste-pickers (and the wider Tibar community) are less likely to be producing the waste entering the dumpsite, following the *higher income = higher consumption = greater waste disposal* argument (section 3.3.1). The unequal distribution of environmental 'bads' is clear – Dili's urbanites are simply not exposed to leachate, hazardous smoke (and the associated health implications) that results from the current SWM system. This argument aligns closely with the very roots of the environmental justice movement on the basis that waste-pickers and the wider Tibar community²⁶ bear the costs of the dumpsite's proximity to

²⁶ Tibar village residents are exposed to the smoke and ash from the open fires, leachate (found in groundwater supplies), and an increase in disease vectors and pests such as rodents and mosquitos (Magno de Côte-Real Araújo et al., 2015).

their work and neighbourhood, and government's failure to provide adequate SWM services which prevent or minimise these harms.

5.4.3 RACIAL CAPITALISM

I therefore argue that the informal labour provided by Tibar's waste-pickers, and the associated health risks they are exposed to, are a manifestation of environmental racism and racial capitalism, echoing Miraftab (2004) and Pulido (2016). It bears reiterating that these concepts can be applied to discrimination and bad treatment of groups identified not only by race, but also ethnicity, social class, or caste (Martinez-Alier et al., 2014). My research indicates that either in failing to recognise, or actively enabling, Tibar's waste-pickers to continue business-as-usual (and the associated costs borne), the local and national authorities are complicit in allowing such harms to continue. Further, discussion section 5.4.1 establishes that government has profited from the provision of these services through the absence of having to pay anyone to do such management at Tibar and through extending the capacity (lifetime) of Tibar dumpsite.

The urban poor are seen as a residual class, "superfluous to the global capitalist economy" (Millar, 2012), which renders them a surplus population in the eyes of local authorities (Pulido, 2016) who operate and make decisions within the government systems, which I have established in the literature review as closely entwined with capitalism. The intersection of waste, class (or race) and governments operating within the confines of capitalism results in a racial capitalism of governments profiting off the labour of the urban poor. In South Africa, Miraftab (2004) argued that racial capitalism manifested through authorities opting for privatised waste-collection services reliant on low-paid, insecure, labour provided by working-class Black people. Similar to Miraftab's (2004) work, my research has indicated racial capitalism through exploitation of waste labourers by local authorities. Tibar's waste-pickers are indeed made up of the (semi-)urban poor and their work constitutes waste labour at Tibar dumpsite. Where the South African authorities privatised waste collection services on the basis that these services were cheaper than providing state services, Timorese authorities have perhaps been more passive in their exploitation by simply enabling waste-pickers to continue as an informal function within the formal system (refer to Figures 10 & 11). Indeed waste-pickers' work has formed an integral part of Dili's waste disposal and resource recovery for decades. This labour has been happening at no cost to local authorities, yet as I have argued throughout this thesis, waste-pickers bear the very direct costs of working in such hazardous conditions.

A further layer of racial capitalism is at play at Tibar dumpsite: that people sought out waste-picking as a necessary response to the social and economic circumstances they were once in. As alluded to by

waste-pickers such Juanita, and as equally implied by wider stakeholders' 'livelihoods' perceived justification for waste-picking, many waste-pickers were likely forced into waste labour by the financially and socially turbulent times of Indonesian occupation and Timor-Leste's struggle for Independence. This is reflective of the Latin American economic crises forcing a surge of economically displaced people turning to waste-picking in the early 2000s (see: O'Hare, 2017).

The purpose of my research is not, however, to portray Tibar's waste-pickers as a poor, exploited, and powerless group of people. To the contrary, waste-pickers reported enjoying a degree of autonomy and satisfaction in their work. Echoing O'Hare (2017), Tibar dumpsite is instead conceived as a place that presents economic opportunity and autonomy to work as one chooses. This reiterates Oteng-Ababio's (2011) point that waste-pickers may not enjoy the same job autonomy if their roles are formalised. However, as this chapter has demonstrated, such autonomy comes at a cost.

5.5 TOWARDS PROCEDURAL JUSTICE: BUILDING THE CASE FOR JUST INCLUSION

This chapter has built a case study of Tibar dumpsite operations as of April 2019, providing context to the preliminary understanding of Tibar dumpsite provided in chapters 1 and 2. I identify four key pillars which form the basis for the argument that Tibar's waste-pickers ought to be considered as key stakeholders within the dumpsite-to-landfill process: 1) recognising waste-pickers' public service contributions in both their disposal management and resource recovery activities at Tibar dumpsite; 2) that waste-pickers are, in this sense, experts with valuable knowledge of SWM at Tibar; 3) the disproportionate environmental risks waste-pickers are exposed to, by nature of their work (i.e. the base environmental justice argument), and, argued below; 4) that any substantive changes to the dumpsite would significantly alter waste-pickers' lives and livelihoods; they are the most affected stakeholder group.

As has been the case with similar dumpsite upgrades (see: Semibiring & Nitivattananon, 2010; Paul et al., 2012), Tibar's waste-pickers lives and livelihoods are at risk of being significantly affected by the dumpsite-to-landfill upgrade. The case for the inclusion of waste-pickers in the upgrade process is further supported by notions of procedural justice, such as Leventhal's (1980) fair representation of affected groups in decision-making processes, and democratic participatory decision-making, more broadly. The importance of including the most affected groups in decision-making processes is implied within Coase theorem, which maintains that polluting facilities are established near to communities with low probabilities of protesting. In the case of Tibar's dumpsite-to-landfill upgrade, Coase theorem flags the risk that already marginalised (such as the Tibar community or waste-pickers) may be

excluded from further decision-making regarding polluting facilities. Although Tibar dumpsite was established under Indonesian rule (and entirely different governance), Coase theorem nevertheless highlights the importance of decision-makers' perceptions of minority communities' power; developments or upgrades may go ahead without the consent or inclusion of the people directly affected by the change. Although a landfill upgrade will largely benefit the Tibar community (e.g. through eliminating smoke and increasing waterway and contaminant management), this is no justification for the potential displacement or procedural exclusion of Tibar's waste-pickers. This aligns with Young's (1990) articulation of oppression and social justice; are minority communities waste-pickers (and perhaps the wider Tibar community) perceived as relatively powerless within the dumpsite-to-landfill process because of the lower social status attributed to their 'nonprofessional' work? If so, decision-makers' perceptions of waste-pickers could indeed prove a barrier to waste-picker justice.

Perhaps the most important finding from this chapter is that nearly all stakeholder participants recognised that waste-pickers are exposed to significant health risks. Notably, the one participant who did not think that waste-pickers were exposed to harms was the official from Dili Municipality, the primary responsible authority. Nevertheless, this finding demonstrates a real strength of adopting distributive analyses: distributive issues and injustices, such as exposure to pollution, are typically overt and easily recognised by outsiders to the issue, including decision-makers. Recognising injustice is certainly an integral step in addressing injustice but recognition alone is not enough to *attain* justice.

CHAPTER SIX

JUST PROCESS, JUST OUTCOMES?

This chapter presents and discusses the research findings relating to the dumpsite-to-landfill upgrade, with particular attention given to waste-pickers' engagement within the development and decision-making process. It emerges that there is significant information asymmetry between (and among) stakeholders and waste-pickers, which forms the basis of the procedural justice analysis in section 6.3. I then present the findings relating to the plans and expectations for waste-pickers' livelihoods outcomes and inclusion within the site development. Together with Chapter 5, these findings inform the discussion of the complex barriers to justice in Chapter 7.

6.1 PROGRESS AND MANAGEMENT

6.1.1 RESPONSIBLE AGENCIES (2)

Multiple players are involved in the decision-making process for the dumpsite-to-landfill upgrade and that there are further diverging views the lead authority. The Tibar dumpsite upgrade is part of a wider SWM infrastructure proposal, agreed upon by the Council of Ministers in July 2016; the ultimate decision-making power resides at Government level. Ana noted that her Ministry had not been involved in the development of the dumpsite upgrade, and that instead, State Administration is the responsible implementing agency. Yet David (who was closely involved in the policy's development) stated that the role of State Administration "is not the implementing body for the project", but rather to "promote public order and hygiene" through providing policy guidance to municipalities with their respective SWM implementation. Marco (Dili Municipality) similarly maintained that "the decisions for this [upgrade] project, it is entitled mostly to the Dili Municipality. Dili Municipality creates plans and other related requirement for the project". However, throughout the interview, Marco continually referred to the project as ADB's project, for example: "ADB will implement its landfill project in the Tibar site". If State Administration are responsible for policy development and Dili Municipality for implementation, while the ADB seemingly contributes to *both* development and implementation, there is differing but shared responsibility for the Tibar dumpsite-to-landfill project. Herein lies the first red flag for the just inclusion of waste-pickers: who will ensure the safeguarding of waste-picker livelihoods if there is unclear responsibility between central government and local government and an international development agency? And, further, who is responsible for waste picker inclusion throughout development of these plans?

6.1.2 AMBIGUOUS UPGRADE UPDATES

As my research was conducted nearly three years after the policy was agreed upon, ascertaining exactly which stage the dumpsite-to-landfill upgrade had progressed to was a research priority. However, this proved challenging; government responses were along the lines of “this project is still in its planning stage [... to be...] implemented in 2020” (Marco), while NG/IO stakeholder understandings of the plan were largely divergent. Through my work at UNDP, I learned that the ADB were then providing technical assistance on procurement for the landfill upgrade in developing and procuring the ‘build and operate’ contract. Therese alluded to this, but understood that political issues had caused the project to stop: “When I spoke to [redacted] from ADB, I think they were in the procurement process, then some people in the government told me that it might not go ahead”. NG/IO stakeholder understandings further blur the timelines:

We talk regularly with the consultants involved, but I haven’t talked to them this year so I’m not sure how far behind they are, or where they are up to [...] I know there were some discussions with private sector organisations [...] Not sure if that’s actually progressed.

- Tatiana

[...] this is still under development and we don’t really know the details, but what I hear is that they are going to modernise this with proper equipment, proper transport [...] kind of a controlled landfill

- Ursula

It’s been in discussion for almost 5 - 7 years.

I heard that it isn’t actually going ahead because the government actually not wanting to have a loan from ADB because of the government position [...] it has stopped.

- Therese

The language used here is indicative of participants’ uncertainty regarding the plan’s actual progress (“I think / I don’t know / I heard / not sure”). Although this does not necessarily indicate that the plan itself was not progressing, it signals poor information sharing between key responsible agencies (ADB, State Admin, and Dili Municipality) and interested NG/IOs. If there is an information gap between these stakeholders, what does this imply for waste-picker engagement in the process, their understandings of the site upgrade and, furthermore, the security of their livelihoods?

As expected, there was considerable variation among waste-picker participants regarding what the dumpsite upgrade would entail:

To relocate this place.

- Juanita

They said they will build a factory in this area, and rubbish will be managed in the factory [...] they have talked about this for many years now.

- Maria

[The dumpsite] might be relocated, because we have heard about the relocation process long ago, but we don't know.

- Silvio

This area will be developed into a factory, for example a factory for plastics [...] but it hasn't been started yet. They said that this place will be upgraded, but the population of Tibar reject this idea, they don't want to leave this place. Because this is their lives.

- Jose

They are thinking of making some changes in the area such as to stop burning the rubbish so the smoke can be eradicated. The management of waste will be well organised [...] plastics will be separated from the glasses and others.

- Peter

In addition to the information asymmetry among waste-pickers' understandings, one person, Jorge, was completely unaware of the proposed upgrade. Not only does this indicate that there has been little, or poor, engagement with waste-pickers thus far, but that some waste-pickers may be completely unaware that the security of their livelihoods is at risk. Indeed, Jose, above, implies that some waste-pickers rejected the government's proposal as they do not wish their livelihoods to be displaced. Furthermore, if site construction is planned for 2020 (as mentioned by Marco), this begs the question, should waste-pickers already have been involved?

In addition to introducing the reoccurring themes of information asymmetry and misinformation, this section has signalled potential governance barriers which reoccur throughout my findings, and are synthesised in Chapter 7. These barriers include the ambiguity regarding responsibility for the implementation of the project (who, then, is responsible for managing waste-picker engagement?) and institutional barriers associated with central government decision-making, which may have slowed/alterd the project's development (e.g. the ADB 'loan thing' mentioned by Therese, and waste-pickers such as Peter: "that company came here with the former government, former Prime

Minister Dr Rui Maria de Araújo. Maybe because the government has been replaced, the project has stopped”).

6.2 WASTE-PICKER CONSULTATION AND ENGAGEMENT

Before analysing procedural justice in the context of Tibar’s dumpsite upgrade, it is necessary to first build an understanding of the extent to which waste-pickers have been engaged throughout the dumpsite-to-landfill process. Engagement with waste-pickers thus far appears to have been fragmented and disconnected. Further miscommunication is present among the wider stakeholder group regarding the extent to which waste-pickers have been consulted, again reflecting governance confusion as to who is ultimately responsible for ensuring waste-pickers’ interests are heard and reflected in this process.

For instance, Marco (Dili Municipality) expected that “ADB will implement its landfill project in the Tibar site, and from that point we could talk to the Tibar community about any jobs the ADB project might offer them”. He later stated this conversation with Tibar workers will happen in 2020, and that Dili Municipality has no plans to talk with waste-pickers in the foreseeable future. Whereas Andreas (ADB) stated that consultation had already been conducted with waste-pickers “during the development of the feasibility study. Several interviews have been done with the people that work and make a living out of the existing dumpsite”. David referred to the same engagement, “I think they asked them about what is their plan if this open dump is transformed into a landfill”. David further stated that “[...] government is planning to engage with the communities, with the waste-pickers, in order to discuss with them the proposal of the government [...]”, but he was unable to provide further details of this engagement.

From the NG/IO perspective, Tatiana responded “We haven’t actually talked with them directly. We don’t actually have any funding”. When I asked if she knew of anyone who has consulted with waste-pickers, Tatiana replied: “No, besides you, no. Has anyone? [...] Hopefully the government have”. Tatiana shared that TAF has discussed with the government in 2018 to have inclusive planning for the site “[...] in terms of considering their needs and what might happen to them.... whether or not that [inclusive planning] took place...” – indeed, my research indicates that it has not. Similarly, Ursula stated that UNDP had not done any consultation with Tibar waste-pickers, as their focus was more on citizens’ recycling behaviours: “[government] should have started the conversation with them and integrate a solution for them. But, right now, I don’t really know whether that conversation was started or not”.

Waste-pickers do not have ongoing communication with government or the other stakeholders. One participant (Silvio) had not been informed of the dumpsite redevelopment and was unaware of any officials coming onsite. Others recounted fragmented engagement with various stakeholders: Government, 2 years ago (Juanita); foreigners with the government since 2018, recently had another meeting “earlier this month” (Maria); some NGOs came and spoke with waste-pickers and helped 2 families with their basic needs (Jose). Meanwhile, Peter, details: “I have met many government officials that have come down here and talked to us”. He mentioned “there have been some people come here [...] I have the company’s name on the list I mentioned, but I don’t remember it correctly”. *As we were driving out of the dumpsite, [Peter] drove in, jumped off his scooter, waving the piece of paper [Figure 19] he earlier referred to (Fieldnotes, April 2019).*

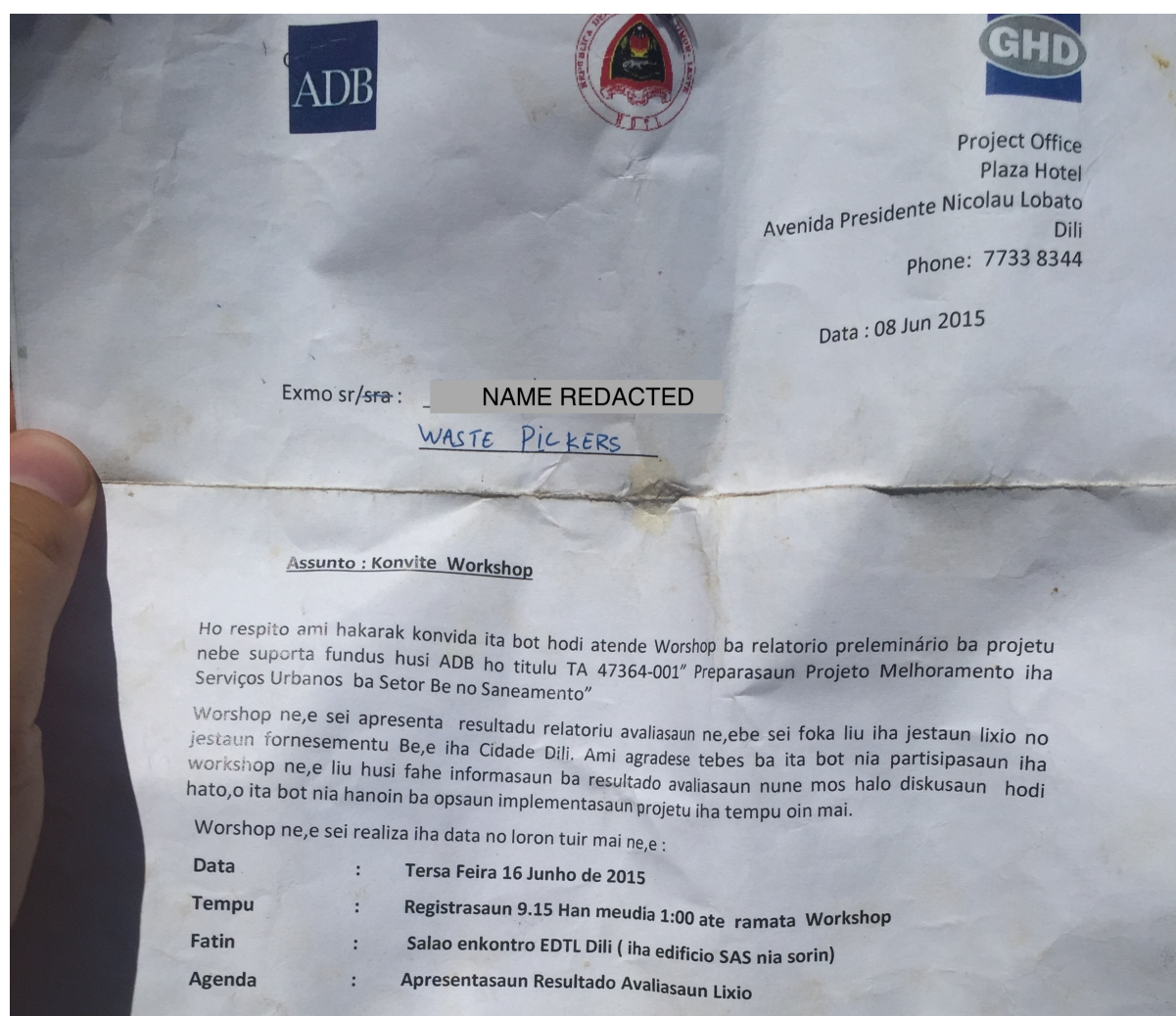


FIGURE 19: 2015 CONSULTATION DOCUMENT FROM ADB (GHD) AND GOVERNMENT
Source: Peter

Peter's document was from the ADB's consultation in June 2015, the same consultation mentioned by Andreas and David. Peter recalls the "company" spoke to many people but:

I think it might take long time to realise. They organised us once to work in some different groups, each worked for every two weeks and they pay eighteen dollars per person [per day]. But that stopped because there were some unintended issues happened between the workers [...]

- Peter

At this point, a truck rolls past and the recording is unclear - Jaco translates: "they fight each other, inside, within them - the workers - because of the money... so the organisation stopped the funding". This was the first I had heard of such a trial, it was not referred to by any other stakeholder. It signals a potential difficulty, inter waste-picker conflict, in formalising waste-pickers' roles onsite. Peter nevertheless thought the plan is a good one because "[...] if the government really wants to upgrade and make this area a good working area, it is good for us. Tibar community want to work in there".

6.3 DISCUSSION 2: PROCEDURAL INJUSTICE

6.3.1 FROM INFORMATION ASYMMETRY & MISINFORMATION...

Procedural justice literature has established that the group most affected by an issue/development ought to be involved in the process and that, just outcomes aside, a degree of justice can still be met through meaningful engagement with involved groups and presenting opportunities for these groups to express their opinions is (Lawrence et al., 1997; Lind & Tyler, 1988). In other words, procedural justice translates to 'opportunities for waste-pickers to be heard'.

Although the 2015 consultation Peter refers to indicates some waste-picker engagement at the project's inception, this appears to have been a one-off as waste-pickers' accounts of subsequent engagement vary considerably (Silvio stated that the government had never come to Tibar to discuss the upgrade, while Juanita and Maria said the government had very recently visited). This fragmented engagement is further reflected by waste-pickers' mixed understandings of what the development entails (from a plastics factory to entire site relocation). Crucially, one waste-picker was completely unaware of the site development. If one of the six people I interviewed, a small sample of the wider waste-picker demographic, were unaware of the proposed upgrade, how many others were too?

The experiences of waste-pickers talked to as part of this research reflect the importance of equitable information sharing among stakeholder groups as a marker for just processes. Comparing these research findings with Leventhal's (1980) measures of procedural justice and Coase theorem, waste-

pickers have not had just opportunities to be heard within this process. In terms of 'accuracy of information', the diverging understandings among stakeholder groups regarding the project's progress, and more specific information such as Tibar's waste-picker demographics, indicates that all stakeholders (including waste-pickers) are misinformed on broader elements of the upgrade. Returning again to Coase theorem, it broadly maintains that equitable 'efficient' outcomes can be met if the most impacted group (in this instance waste-pickers) are recompensed equal to their perceived costs of the development/proposal (Hamilton, 1995). Setting aside whether or not monetary recompense is considered 'just', Coase theorem is dependent on that there is no hidden information among participants (Hamilton, 1995). In the case of Tibar's dumpsite upgrade, then, Coasian efficiency cannot be met as information is not perfect nor is it shared equally among participants. How can waste-pickers determine recompense (equal to the costs they may bear of the dumpsite upgrade) if they do not have a clear understanding of what the upgrade itself entails?

Inaccurate information closely relates to Leventhal's (1980) 'information sharing' as a marker of just processes. Information sharing is considered one of the most fundamental forms of public participation (Beierle & Cayford, 2002). My findings have indicated significant information asymmetry among and between all stakeholder groups. This asymmetry reflects the poor communication and cooperation between waste-pickers, government agencies, and relevant NG/IOs. Poor information sharing among groups can be traced back to a governance barrier in the entire dumpsite-to-landfill process: confusion regarding who is responsible for which elements of the project. In practice, this confusion has led to a fragmented process and ultimately inadequate representation of affected groups (namely Tibar's waste-pickers) within the process (another of Leventhal's procedural justice indicators).

My findings demonstrate the close correlation between three fundamental elements of Leventhal's (1980) markers of procedural (in)justice. Poor 'information sharing' between stakeholder groups highlights and perpetuates 'inaccurate information'. Poor information ultimately limits waste-pickers' abilities to plan and decide on their future livelihoods, reducing the likelihood of just outcomes being met. This is cemented, and further limited by, poor representation of waste-pickers in the dumpsite-to-landfill decision-making process, which in Leventhal's typology ultimately indicates that the dumpsite-to-landfill process thus far cannot be considered just.

6.3.2 ... TO MISTRUST & RELATIVE POWER

Through Lawrence et al.'s (1997) 'historical mistrust of decision-makers', further signs of procedural injustice can be identified through my research. Ursula and Peter both signalled waste-pickers' reluctance to engage with officials/outside, hinting at mistrust:

one lady was friendly and talking to us [...] but [other waste-pickers say] 'a lot of people come and promise, but we didn't get anything'. So I think a lot of people or organisations might have been, I don't know, maybe promise, or say something that they will help them and then it didn't happen, maybe. Yeah because there were some things that they were shouting at us, or kind of stepped back and didn't want to talk to us.

- Ursula

They keep saying that they will take care of us and the Tibar dumpsite. But governments have been changed for several times and we are in the same condition. What we really want is that, when they promise something to vulnerable people - especially us who are in the dumpsite, they need to pay attention and take care of us.

- Peter

Lawrence et al. present historical mistrust of decision-makers as a barrier in procedural justice which can elucidate the power relations between participants and the decision-maker. Tibar's waste-pickers' potential mistrust of outsiders/decision-makers could be attributed to years of fragmented engagement with no real tangible outputs to show for it, or perhaps a wider culture and scepticism of decision-makers, cemented by an 'us' and 'them' mentality. Here the discussion feeds into Young's (1990) cultural imperialism and powerlessness, which highlights the relative power of groups identified through class/race/differences. Within my research, waste-pickers are situated as the relatively powerless and government and NG/IO officials the relatively powerful. Through Young's 'powerlessness', my research identifies NG/IOs and government officials as the powerful professionals, who enjoy higher socio-economic status, whereas Tibar's waste-pickers constitute the non-professional labour force. Young's 'powerlessness' maintains that 'lack of decision-making power' as an injustice that the relatively powerless group may be subject to. Indeed, NG/IO and officials' work is entwined with making decisions about SWM policy, meanwhile waste-pickers provide the SWM labour for these policy decisions (or lack thereof, as has been the case for decades) 'on the ground'. It follows that waste-pickers' livelihoods are profoundly impacted by decisions made at either local or central government level: inadequate formal SWM services lead to people turning to waste-picking on Tibar dumpsite in the first instance (Kubanza & Simatele, 2016; Oteng-Ababio, 2011), and significant redevelopments to the dumpsite place the future of waste-pickers' livelihoods at risk (Medina, 2000; Wilson et al., 2006; Kaza et al., 2018). This procedural justice analysis has demonstrated that, in failing to properly engage waste-pickers in the dumpsite-to-landfill process thus

far, the wider stakeholder group (government officials and NG/IOs inclusive) have limited waste-pickers' ability to influence how the outcomes of a project will impact them.

Poor waste-picker engagement can therefore be attributed to waste-pickers being oppressed - excluded from the upgrade process - because decision-makers, inadvertently or not, render waste-pickers less powerful components of Dili's SWM system. Young's 'cultural imperialism' would argue that this injustice is a result of 'professional' stakeholders perceiving waste-pickers as socially (or culturally) inferior on the basis of cultural or class differences. Inverting Young's cultural imperialism, the findings in this section suggest a further potential barrier to procedural justice: while Tibar's waste-pickers are othered by officials, waste-pickers likewise other officials (whether government or NG/IO) from themselves (as signalled by Peter and Ursula, above), and therefore may be reluctant to engage with officials in consultation processes. This is not to say that waste-pickers themselves are preventing procedural justice, rather that the stark power imbalance between waste-pickers and other stakeholders can manifest in ways beyond the one top-down 'oppressor oppressing the oppressed' way.

By summary, this section has demonstrated that Tibar's dumpsite-to-landfill upgrade has so far proven a fragmented process, with insufficient waste-picker engagement and thus inadequate representation of waste-pickers, the most impacted group, within the dumpsite-to-landfill process. I have argued that decision-makers' failure to include or plan for waste-pickers translates to procedural injustice on the basis of information asymmetry and misinformation, exacerbated by convoluted governance of the project. In addition, waste-picker's potential mistrust of decision-makers has highlighted the class and labour differences between the two groups, which has highlighted the relative decision-making power between these groups. This relative power, combined with the reoccurring wider institutional and governance issues, informs the discussion of barriers to justice in Chapter 7.

6.4 JUST FUTURES FOR WASTE-PICKER LIVELIHOODS: INTENTION VERSUS REALITY

If the decision-making process has not been just for waste-pickers what, then, is planned for waste-pickers' livelihood outcomes? This section explores the plans, expectations, and understandings of waste-pickers' future involvement in Dili's SWM system.

6.4.1 POLICY INTENT & PERSPECTIVES

First, how does government policy intend to address waste-picker livelihoods within the dumpsite-to-landfill upgrade? Government Resolution 32/2016 was agreed upon in by the Council of Ministers in July 2016 (David). It details that waste-pickers may continue their 'informal' work under formalised

conditions, wherein burning is prohibited, waste-pickers must wear protective gear and be officially registered and identified with ID cards; in essence, formalising their role. The policy does not, however, provide details such as: whether all waste-pickers will be allowed to continue their work; the implications are for children no longer permitted onsite; what the resource recovery practice will be once burning is prohibited; or who is responsible for procuring/supplying protective gear. Although the details remain unclear, it is certainly promising that the policy accounts for social safeguarding, which is perhaps reflective of the advice tendered by the ADB²⁷.

The ADB's (2015) report advocates for the controlled landfill option because it allows for waste-picker inclusion within the disposal management process. Andreas elaborates on this inclusion:

[...] they could be employed formally by the future company that will build and operate the landfill; they can be working for government in other roles – you know, because they are used to work and managing solid waste so for them they already have some knowledge and skills – [...] this is an advantage, the government should be drafting a plan to incorporate them into the future solid waste system.

- Andreas

Andreas understood that government will address waste-pickers livelihoods when they implement the project and “there will need to be a plan to compensate those people that will lose their income when the controlled landfill will be built. And they need to be included in the future project. Probably, you know, as formal workers” (Andreas).

David similarly alluded to future planning for waste-picker engagement on their livelihoods, to be established in the operate and build contract “subject to the discussion that the government have to do with the waste-pickers”. As the operate and build contract was being negotiated at the time of my doing this research, there is certainly an argument that waste-pickers ought to have been engaged already. In the interim, David discussed what waste-picker involvement might look like onsite “until a contract is actually signed”. This transitional solution, David describes, involves waste trucks circulating where they dump their waste every couple of days or so, so that waste-pickers can continue their business as usual waste-picking (without burning fires). Once they have finished waste-picking in one spot, they move on to the next, and the formal rubbish trucks (Dili Municipality) then moves this picked-through waste to the operational landfill cell. David recommends that this process begins

²⁷ The ADB has well-established principles regarding social inclusion and preventing displacement (see: <https://www.adb.org/site/safeguards/safeguard-categories>).

“from now on. Start from the beginning. We will not want to exclude waste-pickers from this business”.

The policy states “it is *recommended* that a system is put in place to allow waste pickers to continue to earn a living as informal recyclers at the landfill” [emphasis added], yet ensuring that the policy’s intentions are *realised* ultimately hinges upon the implementing body and government processes; no matter how well-developed or well-intentioned, there is a limit to the power of other stakeholders’ advice. Andreas signalled this:

[...] the government decided that [they] will implement the project with their own funding, so from ADB we can only advise and recommend to the government that you need to safeguard these issues, but ultimately at the moment it is the government that will implement the project.

- Andreas

Both David and Andreas stated that plans for waste-picker inclusion are yet to be developed, and that the government is the responsible authority for ensuring these issues are addressed, whereas Marco (of Dili Municipality) several times implied that the ADB were implementing the project. This echoes the theme of governance ambiguity regarding who is primarily accountable for waste-picker inclusion.

David reassured me that, as it is government policy, waste-picker’s livelihoods will be safeguarded:

There is no way we can exclude them [...] Make sure they are protected, their health is evaluated regularly, all of those safety measures will have to be taken care of.

They will not be automatically banned to get access, because that is their livelihoods, right? [...] we will have to work something out in order to work with them. But it’s basically to improve their way of making life from the waste, from the landfill.

- David

However, David himself signals that wider institutional issues can overrule policy intent, regardless of how well-designed or grounded in evidence the policy may be: “[another policy] was supposed to be a very good programme for this country. But in 2015, someone, politician came and killed that programme. Politicised problem. Now this one, I hope no one is going to throw away”. Here, David signals wider government politics and decision-making as further barrier to attaining just outcomes for waste-pickers, which feeds into the discussion in Chapter 7.

6.4.2 FUTURE LIVELIHOODS: WIDER STAKEHOLDERS' UNDERSTANDINGS AND EXPECTATIONS

Given the confusion regarding the overall progress of the dumpsite-to-landfill upgrade, many stakeholders were unsure or unaware of any plans for waste-picker livelihood inclusion. Rather, there was consensus among NG/IO participants (Ursula, Therese, and Tatiana) that waste-pickers' livelihoods were not included in the plan. Marco (Dili Municipality) expected that the ADB will engage with waste-pickers: "Dili Municipality has a plan to move the Tibar dumpsite. While, ADB on the other part, will pay attention to those people who do their activities in the dumpsite once the project is implemented". However, Andreas identified that the ADB can only advise on waste-picker inclusion (discussed below), meanwhile Ursula reported that the ADB had "actually asked, specifically asked, whether UNDP can" do something for waste-picker livelihoods, and Tatiana (TAF) also enquired whether UNDP were doing anything on this.

Despite stakeholders' confusion as to who would actually do it, there was nevertheless strong consensus among all stakeholders that waste-pickers' livelihoods should be safeguarded, included, or compensated, in some way. Several suggestions of what this might look like emerged from my findings: integrating waste-picking in future site operations under favourable working conditions (Ana; Ursula; David; Tatiana); formalising their roles (Andreas; David; Tatiana); alternative livelihoods (Andreas; Ursula; Marco); or a mix of these, as described by Tatiana:

[...] it could end up being an entity with all sorts of structures, could even end up moving on from a cooperative into some sort of private [formalised structure] [...] but it's going to take a number of steps to reach there

- Tatiana

It is promising that waste-picker livelihoods have been mentioned in the government policy and that there is overall stakeholder agreement that waste-pickers should be included within the upgrade; there is certainly impetus for inclusion. This reflects the findings in Chapter 5; many stakeholders recognise the challenging work conditions waste-pickers face and that their livelihoods are dependent on waste-picking at Tibar. Marco, of Dili Municipality, stated:

finding other jobs to these people was one of the reasons why the [government] carried out the discussion with them four years ago [...] the community responded that they do not have other jobs rather than picking rubbish in the site. They said they do not have any education qualification, they do not know how to read and write, so they prefer to continue the activity in the dumpsite as usual.

- Marco

As well as signalling government intention to find alternative livelihoods, here Marco recognises that Tibar's waste-pickers may intend to keep working in Tibar dumpsite. But what do waste-pickers themselves expect and want for their future livelihoods?

6.4.3 FUTURE LIVELIHOODS: WASTE-PICKER UNDERSTANDINGS

Yes [I would like to] continue working like this [...] we just do our job, even though there are smokes everywhere.

- Jorge

Though there was certainly confusion regarding what is planned for waste-pickers' future involvement in the dumpsite upgrade, most waste-picker participants expressed their intention to continue working at Tibar dumpsite, some (Peter; Maria) explicitly stated they would like to work in the new jobs provided by the company or government. The general understanding was that some people may be able to continue working onsite, within a sort of formalised role: "the plan is to have most of us working for a company" (Maria); "they will recruit us into those jobs that come along with the plan" (Silvio); "they might require more people to work for the industry [...] so I think we will get jobs". Jose had a specific understanding of what the new jobs might entail: "It will be five storage factories, the jobs will require many people".

Several waste-pickers (Peter; Maria) highlighted that not all waste-pickers could be included in these new roles. For example, Maria explained "older people might lose their earning resources because they will not be allowed to work in there. The jobs might require physical duties which might be difficult for older people". This raises questions about the livelihood security for those that may be excluded from future jobs onsite. While others (Juanita; Jorge) understood that they *will* lose their job when the upgrade occurs: "If this place is closed down we will not be able to make any earning [...] we will struggle" (Jorge). That even some waste-pickers expressed this livelihood uncertainty/insecurity is reflective of authorities' failure to inform and engage with Tibar's waste-pickers on the proposed upgrade.

The language used when discussing the upgrade, however, indicated that many did not think the changes would happen soon "it's a long way to go" (Maria), and others used the word "if" when discussing the plan. This suggests that waste-pickers may not perceive the upgrade as an immediate reality, and yet Marco, of the implementing authority, stated the project was planned to be implemented in 2020. This is again reflective of poor information and fragmented waste-picker engagement in the process thus far, or perhaps indicative of a perception that government processes are generally slow or do not materialise.

A further emerging theme is the stark power dynamic between waste-pickers and officials, expressed by waste-pickers when discussing the upgrade. The language used by waste-pickers indicates that many perceive that the decision-making power is ultimately the government's. For example, "if they [government] want us to [...] we will" (Silvio) and "If the government wants to come and see what we need here, help us and upgrade the situation. I think we are prompt to accept anything they say" (Peter). Further, Jose stated: "things like government plans, people like us will not be able to talk about it". This perceived power dichotomy between waste-pickers and government authorities highlights waste-pickers' lack of decision-making power in their future livelihoods.

6.5 CONCLUSION: TOWARDS JUST OUTCOMES

Echoing the government's SWM policy intent, there is strong stakeholder consensus that waste-pickers' livelihoods ought to be safeguarded within the dumpsite-to-landfill process, and that waste-pickers should be engaged with to determine what this might look like. Yet it remains unclear who exactly is responsible for leading that engagement, which has translated to a lack of meaningful engagement with waste-pickers. This fragmented engagement, coupled with inadequate information, has resulted in waste-picker uncertainty as to the security of their future livelihoods. Returning to the literature on social and procedural justice, I have argued the dumpsite-to-landfill upgrade has thus far been unjust for Tibar's waste-pickers. Coupled with ambiguous plans and no clear intention of when engagement will occur, what it will look like, and who exactly will initiate it, this indicates that waste-pickers' futures are ultimately in the hands of decision-makers - as are just outcomes.

Participants from both the wider stakeholder group and waste-pickers indicated their preference to be included in future site operations at Tibar dumpsite. Several options were proposed by participants, including semi-formalised roles, formalised roles, establishing a cooperative structure, and alternative livelihoods. Andreas (ADB) also signalled compensation, anticipating that some workers may lose their jobs. Waste-pickers themselves indicated an expectation that there would be some new formal roles available to them. Banning waste-pickers from continuing their resource recovery operations onsite would not only economically displace them, but be detrimental to the government's wider resource recovery and recycling success. Elsewhere, attempts to improve formal waste management systems *without* incorporating the pre-existing informal sector have proved counterproductive (Wilson et al., 2006). However, there is some debate within the literature on whether formal integration ought to occur at all. For example, Sembiring and Nitivattananon (2010) argue that formal integration is desirable, based on the premise that this will legitimise their role and lead to better social status and

treatment from local authorities. Conversely, O'Hare's (2016) research identified that formalising waste-pickers' roles may lead to undesirable (unjust) outcomes, such as waste-pickers' dissatisfaction with their work and income.

CHAPTER SEVEN

CONCLUSION: BARRIERS TO JUSTICE AT TIBAR DUMPSITE

My research has identified a dichotomy between the stakeholders' well-meaning intentions and their abilities to safeguard waste-pickers' livelihoods and, therefore, their abilities to address injustice. Building on the procedural justice analysis, this is attributed to a number of structural issues (both institutional and societal) which have emerged as reoccurring themes throughout Chapters 5 and 6. This section further discusses how these issues may remain barriers to achieving just outcomes for Tibar's waste-pickers, and in doing so returns to key discussions from the literature regarding structure and agency. This discussion situates the dumpsite-to-landfill process within its wider governance context, highlighting further complexity and challenges associated with justice.

7.1 LIMITS TO POWER: AGENCY AND INTENTION

All stakeholders, excluding Marco, recognise the risks Tibar's waste-pickers are exposed to, therefore aligning themselves with the basis of the environmental justice argument. My findings further demonstrate that all stakeholders expressed that waste-pickers' livelihoods ought to be safeguarded in some way. However, do these good intentions predicate action? In answering this, the discussion turns to a long-standing sociological debate on power, specifically, the relative power of individual agency versus structure.²⁸

Regardless of how well-meaning or 'left'-leaning a government's policies may appear, these policy decisions nevertheless exist within a global economic system ultimately driven by (and equally reliant on) a linear model of resource extraction and consumption (Martinez-Alier et al., 2014), and, in the case of waste, subsequent disposal. This exemplifies the structural limitations of individual power, identifying the tension between stakeholder intention and the wider conditions and systems within which decisions are made. As Marx (1852) famously writes: "[Human beings] make history, but they do not make it just as they please: they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given and transmitted from the past" (The Eighteenth Brumaire of Napoleon Bonaparte, chapter I, para. 2). Essentially, fundamental Marxism argues for an understanding of the social power structures which limit the individual's ability to make decisions and enact change: the basis of structuralism.²⁹ It follows that individuals may inadvertently perpetuate or 'prop-up' systems of oppression, simply by participating in their day-to-day lives. Even if actors

²⁸ This is a simplified version of the structure versus individual agency debate, widely attributed to Althusser and Thompson, respectively. For more, see: Callinicos (2004); Anderson (1980).

²⁹ Foucault, widely recognised as the 'father of poststructuralism', sought to build upon and simultaneously contest structuralism.

involved in dumpsite-to-landfill transitions are well-intentioned, they may be inhibited by (or participating) in power structures which negatively impact the very people they seek to help.

Conversely, the argument for individual agency maintains that “history is the process through which human beings constantly make and remake their lives” (Callinicos, 2004, p. 2), placing greater emphasis on individual ability (power) to enact change. Of course, there are different types of agency, including self-determination, routine conduct, and public initiatives (Anderson, 1980), and differing social/political/historical/environmental circumstances in which each ‘agency’ manifests. Within the context of this research, agency helps understand power for two key purposes: stakeholders’ ability to act and facilitate waste-picker outcomes (or the extent to which stakeholders might limit or enable waste-pickers’ agency), and the ability of waste-pickers themselves to determine their own outcomes within the dumpsite-to-landfill process.

Yet are agency and structure mutually exclusive? Callinicos (2004), among others (such as Anderson [1980]), maintains that the polarity of structure and agency can be overcome; ‘agency’ and ‘structure’ can both be ‘true’. I recognise both the power that individuals hold to enact change in their lives, but that this ability is oftentimes determined by the wider social/political/historical structures within which individuals exist. As Young (1990), referring to how oppression and injustices occur, writes: “while individuals should be free to pursue life plans in their own way, it is foolish to deny the reality of groups” (1990, p. 47).

7.2 CONVOLUTED GOVERNANCE: IMPLICATIONS FOR JUSTICE

The discussion of structure and groups (and how these impact justice) integrates governance barriers which have emerged throughout my research. While political ecology maintains the importance of extending justice analyses beyond the state (i.e. ‘government failure’ alone is no explanation for injustice), analyses of state/governance structures nevertheless prove useful in unpacking justice issues. In practice, the ambiguous governance of the dumpsite-to-landfill process (evident through stakeholder confusion) has resulted in across-the-board failure to engage with waste-pickers. This does not bode well for facilitating just outcomes, as it limits waste-pickers’ ability to participate in the process, which simultaneously limits the extent to which waste-pickers can cooperate with decision-makers in determining workable and just solutions.

Uncertainty regarding central and local government authorities’ respective responsibilities present barriers to effective policy implementation (Harvey, 2014). In a case study of the governance response to ‘inadequate solid waste management’ in Cusco, Peru, Harvey (2014) identified a tension in

implementing SWM solutions which simultaneously require *decentralised* ownership of the waste issue (and often locals' buy-in to the solution) while implementing technical, engineered, infrastructural improvements of *national* significance and often involve central government management and oversight. Indeed, this is the case for the Tibar dumpsite-to-landfill upgrade; considering that Dili constitutes the majority of Timor-Leste's solid waste, there is an argument that central government have stakes in ensuring the implementation of the project. Yet Dili Municipality is considered the implementing body, while State Administration worked closely with the ADB in forming the policy - there is certainly ambiguity as to the primary responsible body for the process, particularly between forming the policy in 2016 and implementing the upgrade (anticipated in 2020). This echoes Palmer and Amaral de Carvalho (2008), who write: "in the struggle to rebuild Timor Leste's economy, infrastructure and institutions, the issue of power-sharing and centralisation is increasingly contentious. My research evidences Harvey's (2014) argument that there is no single authority responsible for solving problems that arise with a project's development; governance does not typically manifest in one 'state presence', but through the negotiations that occur between and across state-levels, transnational markets and technologies, and non-state actors through "the enactments of international regulatory standards of multilateral lenders who require evidence of public participation in the formulation of public policy" (Harvey, 2014, p. 69). Poor communication (ergo negotiation) between state-levels and non-state actors ultimately signals that the governance of the Tibar dumpsite-to-landfill upgrade was (and perhaps still is) inadequate to reach effective, just solutions.

Above, Harvey (2014) identifies the interplay of international organisations, such as, in this case study, the ADB, and their social safeguards obligations within decision-making processes. This returns to the discussion of the interaction of international development agencies in development projects. As highlighted by several stakeholder participants (Andreas; Therese; Tatiana), there is a formal limit to the well-intentioned perspectives and advice of NG/IOs; waste-pickers' outcomes are ultimately dependent on government intention and implementation. The ADB, with a strong livelihoods and displacement focus, may have been well-placed to safeguard waste-pickers' best interests had the ADB had full implementation and decision-making ability. As the ADB is no longer providing a loan for the project, their role is limited to providing technical advice to gov

Though not explored in depth within this thesis, Government's decision to be autonomous from the ADB loan is entangled in central government politics on development loans. Postcolonialism, through the warnings of dependency theory, recognises the Government's autonomy to reject the ADB's loan as Timor-Leste is an emerging post-colonial state, subject to heightened international aid and advice, which may indeed be politically motivated (see Correia De Almeida [2015]). Without condemning Government's decision, my research nevertheless indicates that such a decision has resulted to increased confusion among stakeholders as to the upgrade's progress and plans, and has inhibited the ADB's ability to safeguard waste-pickers' livelihoods.

SWM decisions occur within Timor-Leste's emerging political and governance institutions, which presents a further barrier to a just decision-making process. The governance issues associated identified in my research echo Palmer and Amaral de Carvalho (2008) in that Timor-Leste's governance system is in the process of establishing itself. This is evident from frequent elections and political impasses despite their 5-year electoral cycle, for example, following parliamentary elections in July 2017, no party was able to form a majority coalition. The National Parliament dissolved in January 2018, with a parliamentary election held on in May 2018. As would be expected, this presented significant barriers for government processes and the development and implementation of policy, mentioned by several UNDP colleagues (Fieldnotes, March 2019). More recently, the governing alliance collapsed in January of this year having failed to reach consensus on the 2020 budget, leading to another political impasse. As the decision-making power ultimately resides with central government, this political instability trickles down to the decision-making and implementation of projects such as the dumpsite-to-landfill upgrade.

7.3 SOLID WASTE MANAGEMENT: INTEGRATED AND POLITICISED

As proposed by integrated SWM framework (Wilson et al., 2013), the Tibar dumpsite upgrade is not an isolated element, but exists with a wider SWM system. The dumpsite upgrade is part of the ADB's wider SWM proposal, situated in Timor-Leste's SWM context. Accordingly, wider decisions on SWM related proposals, such as the suggested waste-to-energy incinerator³⁰ and plastic reprocessing plants (Fieldnotes, April 2019), would significantly impact the progress or existence of the dumpsite upgrade.

SWM proposals are deeply political, which Harvey (2014) attributes to the transformative duality (hidden value) of waste. My research demonstrates that Tibar's waste-pickers have been realising this hidden value for decades by virtue of their daily work. Significant SWM proposals, such as waste-to-

³⁰ See: <http://timor-leste.gov.tl/?p=12118&lang=en>

energy, transform the economic value of waste in the form of a business proposal to governments. This is the case throughout the world, such as in Aotearoa New Zealand³¹, but presents particular challenges for LMICs such as Timor-Leste. As David warned: “I can tell you that sometimes these politicians, when they talk to businessmen, businessmen propose solutions and they [politicians] suddenly say ‘this is a good solution’.” This sentiment was echoed by Ana, another government official, who expressed concern that politicians may progress decisions without considering expert advice. A decision was made to prioritise the 2015 waste-to-energy plant over the ADB’s proposal, halting the progress of the dumpsite-to-landfill upgrade. This demonstrates that SWM decisions in Timor-Leste are susceptible to political will, supporting Harvey’s politicised transformative duality of waste; the waste that waste-pickers deal with at Tibar is the same matter that is transformed into a valuable resource in waste-to-energy proposals.

7.4 THE VALUE OF WASTE & THE VALUE OF WASTE-PICKERS

The environmental justice analysis (section 5.4) has evidenced Fredericks’ (2014) claim that waste-pickers bear the brunt (and costs) of the current SWM infrastructure. Through racial capitalism, I have further argued that Tibar’s waste-pickers’ resource recovery, recycling, and disposal SWM labour (and the costs borne for doing such labour) is not valued in capitalist economic and political systems. This is in part because of the informal (read: not officially recognised by the state) nature of their work. I argue that such devaluing extends to stakeholders’ perceptions of waste-pickers, as evident through authorities allowing waste-pickers to continue bearing the costs of the inadequacies of Dili’s SWM system, coupled with the lack of meaningful engagement waste-pickers have had throughout the development of the dumpsite-to-landfill upgrade (i.e. the basis of procedural injustice). Section 6.3.2 attributes this devaluing to the relative power between waste-pickers and ‘professional’ stakeholders. Below, I explore how waste is valued within the dumpsite-to-landfill upgrade and how this correlates with stakeholders’ perceptions (value) of waste-pickers and how this both perpetuates procedural justice and limits future just outcomes for Tibar’s waste-pickers.

As identified by Gregson and Crang (2010) and Harvey (2014), waste is a political object with changing meaning and transformative value. Within the context of my research, this manifests as a disjuncture

[...] are the ones who treat the waste as resources. Even the government treats waste as waste because the government system is just ‘bring in the waste and throw it into the landfill’ [...] it’s the waste-pickers who are actually collecting this waste and giving it back to recycling companies to be recycled and bring this waste back into the economy.

- Ursula

³¹ See: <https://www.rnz.co.nz/news/regional/282757/buller-keen-on-clean-energy-plant>

between government valuing waste as business prospect (such as the aforementioned waste-to-energy proposal) versus the status quo of complete absence of formal value in the current SWM system, as summarised by Ana: “what we [government] do with waste in the existing system is we are actually burying the money”. Similar to O’Hare’s (2017) research, my findings demonstrate that waste-pickers’ work inherently recognises the hidden value of waste, “[...] because everything here is still valued, it means we can earn money from them [...]. People throw them away because rubbish is invaluable things, but they are actually worthy in another part” (Silvio). Ursula succinctly identifies that, in doing so, Tibar’s waste-pickers:

Herein lies a dichotomy reflective of Harvey’s ‘transformative duality of waste’. In Harvey’s research, when the value of waste was realised within plans for a recycling plant, this presented governance issues between central and local government as both held stakes in the project, given the scale and value of the project. The transformative value of waste therefore also represents the politicised nature of SWM governance, as discussed above.

As waste is not formally valued within Dili’s current SWM system, this raises further questions around the extent to which waste-pickers’ themselves are valued by stakeholders and whether or not a similar transformative duality may apply. O’Hare (2017) identifies that waste workers who were formalised as part of a new recycling plant were perceived by institutional actors (stakeholders) to be “a homogenous extreme poor who earned a low income from the sale of stock recyclables and would thus be content with low monetary wages” (p.159). O’Hare continues, “In fact, they were a heterogenous group with composite incomes, differing levels of capital, and divergent earning potential” (p. 159). Both of O’Hare’s points ring true for my research: Tibar’s waste-pickers are perceived by some stakeholders as ‘poor’, while my findings have presented waste-pickers as a diverse group with differing circumstances, needs, and abilities. O’Hare’s research flags the interdependency between waste-pickers’ social/labour status and their corresponding perceived value within SWM project developments, in addition to forewarning potential unjust outcomes (namely recognising the true economic value of waste-pickers’ work). The following discussion explores the ways in which this value is constituted through waste-pickers class (labour) status and their association with the dirtiness of waste.

There is broad consensus that the urban poor are, time and again, excluded economically, politically, and socially (see: Millar [2012]): a central focus of social justice. When discussing whether Tibar waste-pickers (and the wider Tibar community) had been consulted, Therese openly stated “we don’t know,

no one even cares about it cos they're so poor, no one even visits them so who knows what happens to these people". In other words, Therese understood that Tibar's waste-pickers had not yet been engaged because they were perceived by the wider stakeholder group as poor and therefore, as Young's (1990) framework presents, with limited autonomy. My research has suggested that such exclusion is happening not only because waste-pickers are comprised of the urban poor, but because of the intersection of waste-pickers' labour class and the "yucky" nature of their work.

Fredericks, among others (O'Hare, 2017; Sternberg, 2013; Whitson, 2011), signal that waste-pickers may be subject to social stigma due to the 'dirty' nature of their work.³² While my research does not evidence that Tibar's waste-pickers are subject to overt social stigma, waste-pickers have been, albeit subconsciously, devalued by stakeholders within the dumpsite-to-landfill process. Through Young (1990), this devaluing is attributed to the differences between the two groups, on the basis of labour-status, coupled with the extent to which each group directly engages with the 'dirtiness' of waste matter. Within my findings, an example of this 'dirty' narrative is:

I couldn't imagine myself living near that place, it's very unhealthy for them. But, I mean, that's life - some people are really poor, like I see girls like going through the rubbish and [...] it's just so unhealthy and so yucky.

- Therese

While Therese supported the safeguarding of waste-pickers' livelihoods, here she distinguishes the differences between herself and waste-pickers, an intersection of socio-economic status and the dirtiness connotations of waste. David expressed a similar view: "I don't think, normal people, they would want to live in that, too close to that place [Tibar dumpsite]". Both these excerpts identify the predominant perception of waste as 'dirty' and 'transgressive' (Douglas, 1966; Hawkins, 2003; Hawkins, 2005), whereby 'society' seeks to distance itself from waste (Lupton & Miller, 1992).

However, in reality, society is split into groups; though well-meaning, both David and Therese identify waste-pickers as separate from "normal people". Through Young's (1990) oppression framework oppression, whether in the form of social stigma, exclusion from processes, or limited decision-making power, is attributed to class differences (among many other differences such as gender, race, ethnicity or any combination of these), or, the distinction between professional and non-professional class. These social differences prop up injustice and oppression on the basis of the relative and perceived

³² There is a particularly cruel dimension of this when this very waste work is generated by the consumption patterns of people from the middle- and upper- classes.

power between social groups and the individuals within them – Young’s politics of difference. At Tibar dumpsite, this difference manifests between waste-pickers and the wider stakeholder group on the basis of the type of waste work that each group does: waste-pickers constitute the waste labour, while government officials’ and NG/IO representatives’ work is concerned with waste policy. One group directly manages ‘dirty’ waste matter, while the other is concerned with how that waste matter is managed.

In practice, these differences between groups have rendered waste-pickers as powerless decision-makers within Tibar’s dumpsite-to-landfill upgrade - where environmental and procedural justice otherwise establish waste-pickers as key stakeholders within the process. Wider stakeholders’ Failure to provide space for waste-pickers’ input within the process development implicitly reduces waste-pickers’ autonomy to decide their future livelihoods. In other words, they will do whatever they are told: “I think we are prompt to accept anything they [government] say” (Peter). This power imbalance is cemented by the stark information asymmetry between decision-makers and waste-pickers within the decision-making process: government has the upper hand over waste-pickers in the decision-making. This further evidences Young’s (1990) oppression through ‘cultural imperialism’ and ‘powerlessness’, where the relative labour status of waste-pickers equates to their limited decision-making power.

7.6 SUMMARY

Tibar dumpsite is as politically complex as it is environmentally hazardous (pictured in Figure 20). In seeking to reduce the environmental impact of the dumpsite, the upgrade process has exposed the politics of how waste, and waste labour, is valued. The founding aims of my research were to determine what plans were in place for safeguarding waste-pickers’ livelihoods within the upgrade process, and the extent to which these plans hindered or contributed towards justice for Tibar’s waste-pickers. Drawing on personal reflection and the chapters of this thesis, the following pages summarise: the interplay of waste and justice as it manifests in the Tibar dumpsite-to-landfill upgrade; how this research has contributed to the literature; and the limitations and further areas for research. This discussion is partially informed by my personal experience as a researcher; conducting research is, itself, a political process. I conclude with the implications of this research and how it might inform the future of the dumpsite upgrade within the context of recent developments.



FIGURE 20: SMOKE AND WASTE AT TIBAR DUMPSITE

In providing a case study of the Tibar dumpsite-to-landfill upgrade process, this thesis contributes towards literature on solid waste management in Timor-Leste. Chapter 5 presents the political complexities of Tibar dumpsite, where some waste-pickers enjoy a degree of autonomy, and pride, within their work: “we should work diligently and patiently, because we work for our country” (Silvio). Through environmental justice, my research has argued that this autonomy comes at a significant cost to Tibar’s waste-pickers. My research further establishes Tibar’s waste-pickers as constituting the labour force for the current SWM disposal management operations, in the absence of state-provided recycling, resource recovery and disposal services. Expanding the justice lens beyond government failure alone, political ecology identifies the tension between wider structural causes of waste-picking (i.e. racial capitalism) and waste-pickers’ reported agency onsite. Though environmental justice and political ecology are at times treated at odds with one another, my research demonstrates that justice analyses can be strengthened in using both lenses together.

Chapter 6 identified the procedural injustice of waste-pickers’ poor inclusion within the dumpsite-to-landfill upgrade (as of April 2019), signalled by the information asymmetry among all participants (particularly waste-pickers) regarding the upgrade’s plans and, more specifically, how waste-pickers’ livelihoods were accounted for within it. Procedural justice establishes that those most affected by a

change ought to be included in the decision-making process; a degree of procedural justice can still be met even if the outcomes of the process were not necessarily desired by the group. However, my research indicates that this process has not been adequate as waste-pickers had hugely varied understandings of the upgrade plan and their place within it - one interviewee was completely unaware of the proposed site development. The procedural justice analysis further established that the likelihood of just outcomes for waste-pickers being met is limited, given key stakeholders' ambiguity regarding who intended to engage with waste-pickers and when this would occur.

This procedural injustice finding is set against the well-meaning intentions of stakeholders. Though most stakeholders recognise the difficulties that waste-pickers face, and agree their livelihoods ought to be safeguarded within the upgrade process, my research identified a dichotomy between intention and action being taken to realise these intentions. Chapter 6 then provided a discussion of the wider structural barriers to attaining just outcomes.

7.6.1 LIMITATIONS AND FURTHER RESEARCH

This research was certainly limited by the timeframe for conducting fieldwork in Timor-Leste. Given the dumpsite-to-landfill is a dynamic, and still evolving process, my research only reflects a snapshot in time. An extended analysis over some years (such as O'Hare's [2017] study) would have enabled a deeper understanding of participants' perspectives and the overall developments of the upgrade process. In addition, longer time to conduct this research would have enabled more time to develop rapport and build relationships with research participants, which, following a post-colonial transformative methodology, may have shifted the research focus entirely. A further limitation is the comparatively small sample size of participants. The perspectives provided in this research, though rich, are only reflective of a selection of worldviews and experiences. Additional participants' perspectives may have provided more evidence for, or perhaps contested, the conclusions of this thesis.

My positionality as a young, female, white foreigner will have impacted the information shared with me by participants and, equally, how I understood this information and reproduced knowledge within the context of this thesis. As recognised by a postcolonial epistemology, it is not difficult nor uncommon for a foreigner researcher to insert themselves into an unfamiliar context and critique a process for failing to meet the researcher's imported 'evidence-based' standard.

There is certainly more to the analysis of Tibar's waste-pickers' justice than what has been explored within this thesis. I support future research over an extended timeframe to analyse the longer-term

health implications of working on Tibar dumpsite and other challenges faced, such as the power relationships onsite and between other actors in the informal waste sector. Certainly, there is more research to be done regarding the more complex relationships between Tibar's waste-pickers, as these relationships determine how groups and individuals interact with one another, and would provide insight as to waste-pickers' willingness to cooperate for collective aims such as securing higher or more stable prices for scrap metal, or negotiating with government authorities for their desired outcomes (i.e. livelihood security) within the dumpsite-to-landfill process.

7.5 TOWARDS JUST SOLUTIONS

In order to improve waste-pickers' livelihood outcomes and address exploitation, the literature broadly recommends forming cooperatives from waste-picker individuals and family groups, citing successful cases in Colombia, India, the Philippines and Indonesia (Medina, 2000; Paul et al., 2012; Sembiring & Nitivattananon, 2010; Wilson et al., 2006). Cooperatives enable members more agency as what were previously unorganised groups or individuals become an organised collective that is formally recognised by local authorities. Further, forming cooperatives is portrayed as an efficient way of removing the intermediate dealers (middlemen) who exploit the waste-pickers by on-selling recycled goods for a profit (Wilson et al., 2006), whereby establishing cooperatives will increase waste-pickers' autonomy to negotiate for a saleable value of their collected goods. Establishing waste-picker cooperatives comes with the caveat that the cooperative is supported by a well-established NG/IO (Medina, 2000; Wilson et al., 2006), which can provide legal advice and professional development to extend waste-pickers' expertise (Paul et al., 2012).

In the truest sense, just outcomes would look like waste-pickers being fully informed on the proposed dumpsite upgrade, and their futures within it, and having the autonomy to decide whether they want to continue informal waste-picking/resource recovery under safer conditions, whether they have formalised roles onsite, or if they would prefer alternative livelihoods. Above all, an emancipatory postcolonial epistemology establishes that waste-pickers themselves are the ultimate judge of whether or not outcomes are just. Broadly, procedural justice establishes that justice translates to providing the space for waste-pickers to be heard (Lawrence et al., 1997; Lind & Tyler, 1988). The environmental justice analysis establishes the impetus for improved outcomes for waste-pickers, primarily on the basis of the environmental costs they have borne for decades. Inversing this, just outcomes therefore look like improved health outcomes, while retaining the benefits that waste-pickers enjoy from their current work (identified in section 5.3). Through Young's (1990) framework, 'just' outcomes translate to waste-pickers' increased value in the eyes of decision-makers, no social

stigma or exploitation, empowered to make decisions relating to their own outcomes and increased capacity to develop one's self. However, Young maintains that the causes of injustice are socially and systemically entrenched and, accordingly, will not be solved by simply formalising waste-pickers' roles.

On Friday 24 July 2020, an announcement was made via email to the East Timor and Indonesia Action Network (ETAN) mailing list. This announcement signalled open consultation on the draft Terms of Reference (ToR) for the Tibar dumpsite upgrade's Environmental Impact Assessment. Section 7.5.10 (Figure 21) of the draft ToR sets out the project's intention to conduct interviews with waste-pickers:

- **Socioeconomic baseline data (primary data survey) at waste picker, local and household level: demographics, population density, working age, gender, education levels, income/occupation, available skills, etc – including trend analysis of above. In addition, data from direct consultations/discussions with waste pickers and local communities on baseline conditions, impacts and opportunities of the Project.**

FIGURE 21: EXCERPT FROM TIBAR UPGRADE DRAFT ToR

Source: Dili Municipality and the Ministry for State Administration (MSA), through the General Directorate for Urban Organization (DGOU). (2020). *Tibar Dumpsite Rehabilitation and Upgrading Project: Environmental Impact Assessment Terms of Reference*. <https://administration06.wixsite.com/oasis-sustainable/copy-of-public-consultation-for-pro>

This recent information indicates that the upgrade process is still in its development. It is encouraging to see clear government intention (Dili Municipality in partnership with State Administration) to engage with waste-pickers in this development - this is when the real test of procedural (in)justice begins. My research advocates for all stakeholders to act within their power to ensure a just process, so that themselves are adequately informed to make decisions regarding their futures onsite. Waste-pickers ought to be recognised for their value within Timor-Leste's SWM system, rather than a health and safety complication in an infrastructural upgrade. Until then, I conclude with a salient message from Silvio to government officials: "please proceed as soon as possible".

APPENDIX A: INFORMATION SHEET (TETUN AND ENGLISH)



Husi *dumpsite* ba *landfill*: inklusaun sosiál hodi mellora jestaun lixu solidu iha Dili, Timor-Leste

FOLLA INFORMASAUN BA ENTREVISTA SEMI-ESTRUTURA

Ami konvida ita-boot atu hola parte iha peskiza ne'e. Halo favór lee informasaun ide-ne'e molok atu desidi ita nia partisipasaun. Obrigada barak ba ita-boót nia konsiderasaun

Saida mak ida-ne'e?

Kia ora, ha'u nia naran Jojo Woodham no ha'u estudante masteradu iha Estudu meu-Ambiente iha Universidade Victoria Wellington, Nova Zelandia. Ha'u interese tebes atu hatene oinsa sidade ida jere sira nia lixu solidu, no sé mak jere. Hanesan parte ida husi ha'u nia teze, agora daudaun ha'u halo hela peskija kona-ba jestaun lixu solidu iha Dili, Timor-Leste.

Projetu ne'e sei estuda kona-ba perspetiva ema sira ne'ebé involve an iha fatin soe lixu nian iha Tibar. Grupu hirak ne'e inklui; ema hili foer iha Tibar, organizasaun internasionál ne'ebe relevante no organizasaun naun-govermental (The Asia Foundation, Asian Development Bank, United Nations Development Project), no autoridade governu nian (Munisípu Dili, Sekretáriu Estadu Ambiente, no Ministeriu Administrasaun Estatal). Ho potenciál hadia lixu fatin "husi *dumpsite* ba *landfill*", peskiza ne'e sei esplora diak liu tan oinsá atu salvaguarda (tau matan) ba ema sira nia meius-subsisténsia, ne'ebé mak agora daudaun depende ba hili foer iha Tibar.

Peskiza ida ne'e hetan ona aprovasaun hosi Universidade Victoria Wellington, Umanu Étika Komité [0000027338].

Oinsá mak ita abele ajuda?

Ami hakarak konvida ita bo'ot atu participa tanba ita-nia hanoin sei kontribui ema sira [neébe hili foer / representante organizasaun internasionál / ofisiál governu] nia perspetiva. Se ita deside atu participa, ha'u sei halo entrevista iha ita-nia servisu fatin, ka kafe/restaurante neébe ita hili. Ha'u sei husu pergunta kona-ba jestaun lixu solidu iha Dili, espesifikamente Tibar *dumpsite*. Ho ita-nia autorizasaun, ha'u sei grava ita nia lian iha entrevista no depois mak hakerek. Entrevista bele ko'alia iha lian Tetun ka Inglés, depende ita nia hakarak. Se Tetun, kolega tradutór ide sei akompaña ha'u. Ita bele rezeita atu hatán pergunta ruma no ita bele hili atu hapara entrevista iha kualkér tempu, sem razaun. Ita bele retira/foti husi estudu neé liu-hosi kontaktu ha'u no ha'u-nia superiór molok loron 01 fulan Dezembru 2019. Se ita-boót hakarak atu retira/foti informasaun ne'ebé fornese ona, ami sei destroi tiha ka fo fila fali ba ita-boót sira.

Saida mak akontese ba informasaun ne'ebé ita fó?

Peskiza ne'e konfidensial*, signifika katak peskizador ne'ebé naran iha kraik ne'e sei hatene kona-ba ita-nia identidade, maibé dados peskiza no ita-nia identidade sei kombina hamutuk no sei la fó-sai iha kualkér relatóriu final, apresentasaun, ka dokumentasaun publiku. Ami sei la tau ita-boót nia naran, maibé ita-boot nia organizaasaun nia naran (karik ita autoridade atu aseita em nome de organizaasaun).

So de'it ha'u-nia superiór, tradutór (ne'ebé sei presiza atu asina akordu konfidensialidade ida neé) no ha'u sei rona gravasaun, lee nota no transkrisaun ba entrevista ne'e. Transkrisaun entrevista, inklui mós sumáriu no gravasaun sei continua rai seguru no la lakon iha Maiu 2024.

Saida mak projetu peskiza ne'e sei prodúz?

Informasaun husi ha'u-nia peskiza ida neé sei uza iha teze masteradu no relatóriu sumáriu badak ba Ministériu Negósiu Estranjeiru no Komérsiu Nova Zelândia. Peskiza neé sei iha possibilidade atu publika mós iha publikasaun akadémiku.

Se ita simu konvite ne'e, saida mak ita-nia direitu hanesan partisipante peskiza ida?

Ita la presiza atu simu konvite ne'e, se karik ita lakohi. Se ita deside atu partisipa, ita iha direitu atu:

- Hili hodi la hatan ba pergunta ruma;
- Husu atu hapara/taka gravador iha kualker tempu durante entrevista
- Retira/foti estudu neé molok loron 01 fulan Dezembru 2019;
- Iha direiru atu manda email ba peskizador hodi husu kopia relatóriu

Se ita-boót iha pergunta ruma, agora ka iha futuro, sente livre atu kontaktu ha'u ka ha'u-nia supervisor, Amanda Thomas (Bele haree kontaktu detallu iha kraik):

Estudante/Peskizador Primariu:

Jojo Woodham
Environmental Studies Master's candidate
woodhajoan@myvuw.ac.nz

Supervisor:

Dr Amanda Thomas
Lecturer at School Geography, Environment
and Earth Sciences

[Contact details redacted]

Informasaun Komité Étika umanu

Se ita-boót iha kualkér preokupasaun kona-ba étika hala'o peskiza ida neé, bele kontaktu Victoria University HEC Convenor: Dr Judith Loveridge. Email

[Contact details redacted]

* Konfidensialidade sei prezerva, excetu ita hateten buat ruma neébe bele sai risku ba ita nia seguransa ka seguransa ema seluk nian



From dumpsite to landfill: social inclusion within solid waste management improvements in Dili, Timor-Leste

INFORMATION SHEET FOR SEMI-STRUCTURED INTERVIEWS

You are invited to take part in this research. Please read this information before deciding whether or not to take part. Whether you decide to take part or not, thank you very much for considering this request.

What's this all about?

Kia ora, my name is Jojo Woodham and I am a Master's student in Environmental Studies at Victoria University of Wellington, New Zealand. I am really interested in how different cities manage their solid waste, and who manages it. As part of my Master's thesis, I am currently researching solid waste management in Dili, Timor-Leste.

This project will explore the perspectives of the different people involved in waste disposal at Tibar dumpsite. These groups broadly include; waste workers at Tibar dumpsite, relevant international organisations and non-government organisations (The Asia Foundation, Asian Development Bank, United Nations Development Programme), and government authorities (Dili Municipality, Secretary State for the Environment, and Ministry for State Administration). With a potential landfill upgrade happening, this research will explore how best to safeguard the livelihoods that are currently dependent on waste-picking at Tibar dumpsite.

How can you help?

You have been invited to participate because your views will contribute toward the [*choose appropriate option* - waste worker / government official / international organisation representative] perspectives. If you agree to take part, I will interview you at your workplace, or a café/restaurant of your choosing. I will ask you questions about solid waste management in Dili, specifically Tibar dumpsite. With your permission, I will voice record the interview and write it up later. The interview will happen in Tetun or English, whichever you prefer. If Tetun, a translator colleague will accompany me. You can refuse to answer any questions and you can choose to stop the interview at any time, without giving a reason. You can withdraw from the study by contacting me or my supervisor any time before 01 December 2019. If you withdraw, the information you provided will be destroyed or returned to you.

What will happen to the information you give?

This research is confidential*. This means that the researcher named below will be aware of your identity but the research data will be combined and your identity will not be revealed in any reports, presentations, or public documentation.

* Confidentiality will be preserved except where you disclose something that causes me to be concerned about a risk of harm to yourself and/or others.

You will not be named in the final report but your organisation will be named (provided you have the authority to agree to this on behalf of the organisation).

Only my supervisor, the translator (who will be required to sign a confidentiality agreement) and I will hear the recordings, read the notes and transcript of the interview. The interview transcripts, summaries and any recordings will be kept securely and destroyed in November 2021.

What will the project produce?

The information from my research will be used in Master's thesis and a brief summary report to the New Zealand Ministry of Foreign Affairs and Trade. It is possible that this research may be published in academic publications.

If you accept this invitation, what are your rights as a research participant?

You do not have to accept this invitation if you do not want to. If you do decide to participate, you have the right to:

- choose not to answer any question;
- ask for the recorder to be turned off at any time during the interview;
- withdraw from the study before 01 December 2019;
- ask any questions about the study at any time;
- receive a copy of your interview recording;
- receive a copy of your interview transcript;
- read over and comment on a written summary of your interview;
- be able to read any reports of this research by emailing the researcher to request a copy.

If you have any questions, either now or in the future, please feel free to contact either me or my supervisor, Amanda Thomas (contact details are found below):

Student/Primary Researcher:

Jojo Woodham

Environmental Studies Master's candidate

woodhajoan@myvuw.ac.nz

Temporary contact number in Timor-Leste:

Supervisor:

Dr Amanda Thomas

Lecturer at School Geography,

Environment and Earth Sciences

Victoria University of Wellington

[Contact details redacted]

APPENDIX B: CONSENT FORM (TETUN AND ENGLISH)



Husi *dumpsite* ba *landfill*: inklusaun sosiál hodi mellora jestaun lixu solidu iha Dili, Timor-Leste

KONSENTIMENTU BA ENTREVISTA

Forma konsentimentu ida-ne'e sei hala'o oha tinan 5 nia laran.

Researcher: Jojo Woodham, estudante masteradu iha Estudu meu-Ambiente iha Universidade Victoria Wellington, Nova Zelandia.

- Ha'u iha lee boot Informasaun Tan no projetu ne ' ebé iha ona esplika mai ha'u. Ha'u-nia pergunta dehan ona ba ha'u-nia satisfasaun. Ha'u hatene katak ha'u bele husu tan pergunta iha kualkér tempu.
- Ha'u konkorda atu hola parte iha entrevista rejistradu audio.

Ha'u hatene kona-ba:

- Ha'u bele foti husi estudu ida ne'e iha kualkér pontu iha loron 01 fulan Dezembru 2019 nia oin, no kualkér informasaun ne ' ebé mak ha'u fo sei fila fali ba ha'u ka lakon.
- The identifiable information I have provided will be destroyed in 2024.
- Informasaun ruma ne ' ebé fó ha'u sei mantén konfidensiál researcher nian no nian superiór no tradutór ida-ne'e.
- Ha'u hatene katak sei uza rezultadu ba Na'i nia thesis no relatóriu sumáriu badak kona ba Nova Zelândia Ministériu Negósiu Estranjeiru no Komérsiu. Iha possibilidade katak peskiza ida ne'e bele publika iha publikasaun akadémiku.
- Ha'u autorizasaun ba informasaun ka opiniaun ne ' ebé mak ha'u fó ona atribui ba ha'u-nia organizasaun iha kualkér relatóriu kona-ba peskiza ida ne'e no iha kbiit atu konkorda ba ida-ne'e, naran organizasaun nian: Sin ☐ Lae ☐
- Ha'u hakarak kópia rejistu kona-ba ha'u-nia entrevista: Sin ☐ Lae ☐
- Ha'u hakarak kópia transcript kona-ba ha'u-nia entrevista: Sin ☐ Lae ☐
- Ha'u hakarak sumáriu ida kona-ba ha'u-nia entrevista: Sin ☐ Lae ☐
- Ha'u hakarak atu simu kópia relatóriu finál no hatutan iha ha'u-nia email rezolve iha kraik. Sin ☐ Lae ☐

Asinatura ba partisipante sira: _____

Naran ba partisipante sira: _____

Loron: _____

Detalle sira ne ' ebé kontaktu: _____



From dumpsite to landfill: social inclusion within solid waste management improvements in Dili, Timor-Leste

CONSENT TO INTERVIEW

This consent form will be held for 5 years.

Researcher: Jojo Woodham, School of Geography, Environment and Earth Sciences, Victoria University of Wellington.

- I have read the Information Sheet and the project has been explained to me. My questions have been answered to my satisfaction. I understand that I can ask further questions at any time.
- I agree to take part in an audio recorded interview.

I understand that:

- I may withdraw from this study at any point before 01 December 2019, and any information that I have provided will be returned to me or destroyed.
- The identifiable information I have provided will be destroyed in 2024.
- Any information I provide will be kept confidential to the researcher and the supervisor and the translator.
- I understand that the results will be used for a Master's thesis and a brief summary report to the New Zealand Ministry of Foreign Affairs and Trade. It is possible that this research may be published in academic publications.
- I consent to information or opinions which I have given being attributed to my organisation in any reports on this research and have the authority to agree to this on behalf of the organisation: Yes ☐ No ☐
- I would like a copy of the recording of my interview: Yes ☐ No ☐
- I would like a copy of the transcript of my interview: Yes ☐ No ☐
- I would like a summary of my interview: Yes ☐ No ☐
- I would like to receive a copy of the final report and have added my email address below. Yes ☐ No ☐

Signature of participant: _____

Name of participant: _____

Date: _____

Contact details: _____

APPENDIX C: INTERVIEW SCHEDULES FOR SEMI-STRUCTURED INTERVIEWS (WASTE-PICKERS, GOVERNMENT, NG/IO)

DRAFT QUESTIONS FOR SEMI-STRUCTURED INTERVIEWS TIBAR'S WASTE-PICKERS

- Briefly describe an average day at your workplace.
- Do you think waste is a problem in Dili?
- Do you work here by yourself, or with family/friends?
- How many people do you think work here? Do they come from down the road or far away?
- What is the best part of your day? What do you like most about your job?
- What are the daily issues/challenges you face working here?
- How much do you earn in a week, on average?
(remember, you can refuse to answer any question)
- Do you have access to clean water and healthcare facilities?
- How long have you been working at Tibar? Why did you start working here?
- How much longer do you see yourself working here? Indefinitely?

If participant does not mention landfill upgrade:

- Do you know if there is anything planned for the future of Tibar dumpsite?
>> if **no**, discontinue interview.

If participant does mention landfill upgrade:

- Do you know what is planned for the future of Tibar dumpsite? Do you know why are they doing it?
- Has anyone spoken to you (or other waste workers) about it? What organization were they from? What did they tell you?
- Do you think the upgrade is a good idea? Do you have any concerns about the potential upgrade?
- Will the proposed upgrade have any impacts on you/your family? How might it impact you?

DRAFT QUESTIONS FOR SEMI-STRUCTURED INTERVIEWS
NG/IOs

- What is your organisation's involvement in solid waste management in Dili, Timor-Leste?
- What is your role and how long have you been working here? Why did you start working here?
- What do you enjoy the most about your job? Are there any challenges?
- Do you think solid waste management is working well in Dili? What's working? What isn't?
- What would the perfect solid waste management system look like in Dili? (Feel free to draw to explain!)
- What is your understanding of what the government has planned for Tibar dumpsite?
- Who are the decision-makers responsible for this project? Which govt department(s), any private sector organisations? (If you want, draw how the hierarchy/structure works)
- Does your organization have a role in this? If yes, please elaborate.
- Has your organisation undertaken any consultation or discussion with the workers at Tibar? Are you aware of any other organization/authority that has?
- Are you aware of any plans in place to safeguard the livelihoods of the people and communities dependent on waste-picking activities at Tibar? If yes, please describe.
- How many people (waste workers) are at Tibar? Where do they come from / does anyone live there? How much do they earn? Do you know if there are any children working there? What are the impacts on human health from working at Tibar dumpsite? Do the waste workers have access to clean water and healthcare facilities?
- How much value do you think the waste workers at Tibar provide to Dili's solid waste management system?
- Do you think there is a role for the waste workers in the future of Dili's solid waste management system? If so, what?
- What might an ideal outcome for the Tibar waste workers look like, given the impending landfill upgrade?

DRAFT QUESTIONS FOR SEMI-STRUCTURED INTERVIEWS

GOVERNMENT

- What is your authority's involvement/responsibility in solid waste management in Dili, Timor-Leste?
- What is your role and how long have you been working here? Why did you start working here?
- What do you enjoy the most about your job? Are there any challenges?
- Do you think solid waste management is working well in Dili? What's working? What isn't?
- What would the perfect solid waste disposal system look like, in Dili? (Feel free to draw to explain!)
- What are the government's plans for Tibar dumpsite?
- Who are the decision-makers responsible for this project? Which govt department(s), any private sector organisations? (If you want, draw how the hierarchy/structure works)
- Has your authority/department undertaken any consultation or discussion with the workers at Tibar? Are you aware of any other organization/authority that has?
- Are you aware of any plans in place to help the people and communities dependent on waste-picking activities at Tibar in this transition? If yes, please describe.
- How many people (waste workers) are at Tibar? Where do they come from / does anyone live there? How much do they earn? Do you know if there are any children working there? What are the impacts on human health from working at Tibar dumpsite? Do the waste workers have access to clean water and healthcare facilities?
- How much value do you think the waste-workers at Tibar provide to Dili's solid waste management system?
- Do you think there is a role for waste-pickers in the future of Dili's solid waste management system? If so, what?
- What might an ideal outcome for the Tibar waste workers look like, given the impending landfill upgrade?

APPENDIX D: PARTICIPANT GROUPS AND PSEUDONYMS

WASTE-PICKERS OF TIBAR'S DUMPSITE

Juanita

Penelope

Maria (conducted interview with Penelope)

Silvio

Jose ('elder brother' figure)

Peter

Jorge

INDIVIDUALS FROM NON-GOVERNMENTAL/INTERNATIONAL ORGANISATIONS

Andreas: Asian Development Bank (ADB)

Ursula: United Nations Development Programme Timor-Leste (UNDP)

Tatiana: The Asia Foundation (TAF)

Therese: The Asia Foundation (TAF)

GOVERNMENT OFFICIALS

Marco: Dili Municipality Sanitation Department

David: Previous official at Ministry for State Administration

Ana: Secretary of State for the Environment

Stefan: Ministry of Social Solidarity

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