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Corruption and SDG 6: Clean Water and Sanitation for All

Ensure Availability and Sustainable Management of Water and Sanitation for All

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Abstract

This chapter explores the relationship between corruption and the achievement of Sustainable Development Goal 6 (SDG 6) – ensuring clean water and sanitation for all. We begin by reviewing key literature on the impact of corruption in the water and sanitation sector. We then use a case study of the wastewater sector in Bangkok’s Extended Metropolitan Region (EBMR) to illustrate these issues in practice. Through interviews with key stakeholders, the chapter examines how corrupt practices, weak governance, and regulatory fragmentation hinder access to clean water and sanitation, exacerbating social inequalities. Finally, we offer recommendations aimed at improving transparency, strengthening regulatory frameworks, and empowering local groups to combat corruption and promote sustainable water management.

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Ethics

The authors declare that there are no conflicts of interest.

Introduction

Sustainable Development Goal 6 matters because access to clean water and sanitation supports health, economic development, and the environment. Without safe water, people are more exposed to disease, food production suffers, and economic opportunities are limited. It also affects the implementation of other goals by reducing illness, allowing more children to attend school and adults to work, and supporting agriculture, stable livelihoods, and urban development. Managing water resources well helps communities adapt to climate change and reduces conflict over scarce resources. Meeting this goal strengthens the foundation for broader social and economic progress.

SDG 6 has six outcome targets:

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- 6.1 Achieve universal and equitable access to safe and affordable drinking water for all
- 6.2 Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- 6.3 Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
- 6.4 Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
- 6.5 Implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
- 6.6 Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

The means of implementation targets, 6.a and 6.b, relate to enhancing international cooperation and capacity-building in water and sanitation initiatives, as well as strengthening community participation in water and sanitation management. In the following sections, we examine how corruption hinders progress toward SDG 6. We begin by reviewing key mechanisms and findings from the literature on corruption in water and sanitation, followed by an in-depth case study of the wastewater sector in

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Bangkok, drawing on interviews with key stakeholders. The chapter concludes with a discussion of the policy implications of our findings.

Corruption, Water and Sanitation

Corruption, the abuse of public power for private gain, threatens the right to clean and safe water for billions of people. Previous studies find that it hinders access to safe drinking water and adequate sanitation (Anbarci et al., 2009), contributing to millions of preventable illnesses and deaths every year (Montgomery and Elimelech, 2007). Several prominent studies have found that corruption is pervasive in the water and sanitation sector; this ranges from bribery, to falsification of meter readings, to institutionalised corruption at high levels of government (Davis, 2004; Butterworth and De La Harpe, 2009; Gonzalez de Asis et al., 2009; Tetreault and McCulligh, 2018). In response, the United Nations Sustainable Development Goals 6 and 16 have prioritised access to safe water and the fight against corruption. Scholars of water governance have also proposed a series of creative solutions to the problem, including greater attention to the study of incentive structures (Araral and Wang, 2013), citizen participation (Carr et al., 2012), and innovative technologies (Krolikowski, 2014).

The human cost of corruption in the water and sanitation sector is severe, with prominent studies finding that it limits access to safe drinking water (Anbarci et al., 2009; Kenny, 2009) and enables the spread of waterborne diseases (Duflo et al., 2012). Estimates also suggest that millions, and possibly billions, of people are affected.

Transparency International (2008) estimates that in a best case scenario as much as 10

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per cent of expenditure on water is lost to corruption, while a worst case scenario suggests a loss of as much as 30 per cent.

There are several reasons why the water and sanitation sector is prone to corruption.

First, the sector is typically monopolistic in structure, and water infrastructure requires high upfront costs to build and maintain (ibid). Second, water governance is often weak and fragmented, with a small number of officials having substantial discretionary power over spending decision. Third, regulatory fragmentation is very common, where water management is the responsibility of multiple and sometimes overlapping agencies and ministries, which gives rise to conflicts of interest and inefficiencies in service delivery.

Institutions, actors and incentives feature prominently in most political economy research in the area of water and sanitation. Krause (2007, 2010), for example, finds that the level of democracy and the robustness of the rule of law is associated with greater access to water and sanitation services and that poor quality governance at the subnational level affects the efficiency of providers, which in turn hinders access to services. Harris et al., (2011) also emphasise the importance of institutions, actors and incentives in their political economy framework. Institutions alone thus do not explain everything that we observe in the wastewater sector. A wide range of historical, developmental and distributional issues also feature prominently in the literature. Auriol and Blanc (2009), for example, present evidence on access to water in sub-Saharan Africa, finding that it is vulnerable to capture by the ruling elite. Gandy (2008) points to the historical and postcolonial roots of Mumbai's dysfunctional water infrastructure, arguing that problems that originated in the colonial era have been exacerbated by rapid

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urban growth, authoritarian forms of political mobilisation, and the dominance of middle-class interests. Kjellén (2018) shows how the burdens and risks of pollution are displaced onto the poorest or more distant populations, and that this process is compounded by economic growth. Taking our lead from these findings, we expect that the problem of unequal losses is compounded by corruption in water and sanitation.

While existing studies shed light on the causes and consequences of corruption in water and sanitation, there is still much that we do not know about the scale of the problem. Cross-national data on corruption in water and sanitation is patchy and there are significant issues regarding its reliability. Most empirical work on corruption uses Transparency International's Corruption Perceptions Index or the World Bank's Control of Corruption Indicator. Both are based on expert perceptions of corruption and there is an ongoing debate about their limitations. Neither take into account the difference between grand or petty corruption or tell us where corruption is located in the public sector. Many scholars have also criticised them on methodological grounds, arguing that they are vulnerable to the biases of the experts who compile the indicators (Svensson, 1999; Reinikka and Svensson, 2006; Fan et al., 2009) and are slow to keep up with new developments (Knack, 2007; Kenny, 2009).

Davis (2004) gives us the most comprehensive snapshot of corruption in the sector. She documents the types and magnitude of corrupt behaviours in water supply and sanitation services in several localities in South Asia. Her findings suggest significant evidence of petty corruption, with respondents reporting corrupt activities related to

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falsifying meter readings to produce lower bills and the paying of bribes to expedite repair work and new connection applications. The most common type of bribe was that paid to have meter readings falsified. 41% of respondents had made more than one payment for this purpose in the previous six months. Water and sanitation agencies agreed that it was a common behaviour.

Several further initiatives now collect micro-level evidence on corruption in the water sector – for example, the World Bank’s Enterprise Surveys and Afrobarometer ask firms and households directly about bribery and water access. Using Afrobarometer data, Breen and Gillanders (2024) provide the first test using this micro-level evidence and show that utilities corruption markedly lowers household access to clean water across Africa; although bribes may help secure a connection, they degrade service quality by diverting resources away from maintenance and improvement. Despite the richness of these surveys, their findings remain under-explored, leaving major gaps in our understanding of how corruption in water and sanitation systems interacts with wider political and cultural institutions and what its full consequences are.

In addition to survey-level evidence, scholars in corruption studies have increasingly turned to experiments and other types of data collection, including the gathering of public procurement data. Adam et al. (2020) use this approach to study corruption in the water sector in Ecuador, Jamaica, Mexico, Paraguay and Uruguay from 2006 to 2018.

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They estimate the financial costs of corruption on contract award prices and the social costs of corruption in stifling projects through delays and cancellation. They find significant variation in levels of corruption across countries, with substantial prima facie evidence of corruption risk in the water sector.

Corruption in Bangkok's Wastewater Sector

In this section, we examine the challenge of fighting corruption in water and sanitation through a case study of the wastewater sector in the Extended Bangkok Metropolitan Region (EBMR). We argue that studying the EBMR is important for understanding corruption in wastewater because the region is experiencing several interconnected social processes common in developing regions. Among the most important of these are rapid industrialization and urbanization, which have recently put immense pressure on the region's water infrastructure. A fragmented regulatory structure has made the problem worse, pushing the sector into crisis and dysfunction, creating a breeding ground for corruption. Our study sheds light on this complex issue, offering insights into the political economy of corruption in the sector and its wider social and environmental consequences.

Through interviews conducted between 2019 to 2020 with 31 key informants, we document a range of corrupt behaviours in the wastewater sector. Our analysis follows the classic definition of corruption as the abuse of entrusted power for private gain, which includes bribery, undue influence, and both grand and petty corruption. In the wastewater sector, these behaviours typically take the form of bribes to avoid paying

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fees or to enable illegal dumping, as well as corruption related to the construction of wastewater treatment plants (WWTPs). While our analysis sticks to the classic definition, scholars of corruption argue that we should also consider questions of integrity in public life (Rose & Heywood, 2013). For example, lax enforcement of wastewater and pollution regulations might not be considered corruption, but it can still pose a significant threat to society. To address this, our analysis expands to include integrity failures alongside behaviours typically defined as corruption.

Our findings support previous studies that identify corrupt behaviors ranging from petty corruption and favorable treatment to grand corruption that has made national headlines. We suggest that rapid development has put pressure on infrastructure, leading to corruption as a way to 'get things done.' This is made worse by regulatory fragmentation, weak oversight, deregulation of environmental controls, and distorted incentives in state agencies. While some of these findings are familiar to scholars of corruption and water governance, our interviews also highlight new effects, including significant spillovers from the wastewater sector to other economic sectors.

Lessons from Interviews with Key Informants

Integrity failures play a key role in the increasing problem of the EBMR's wastewater and in the failure of all levels of the Thai government to tackle this problem. Government officials, NGO officials, and community leaders all agreed with this. For example, a PAO officer in Pathum Thani declared that, regarding wastewater, "[t]here is corruption at the

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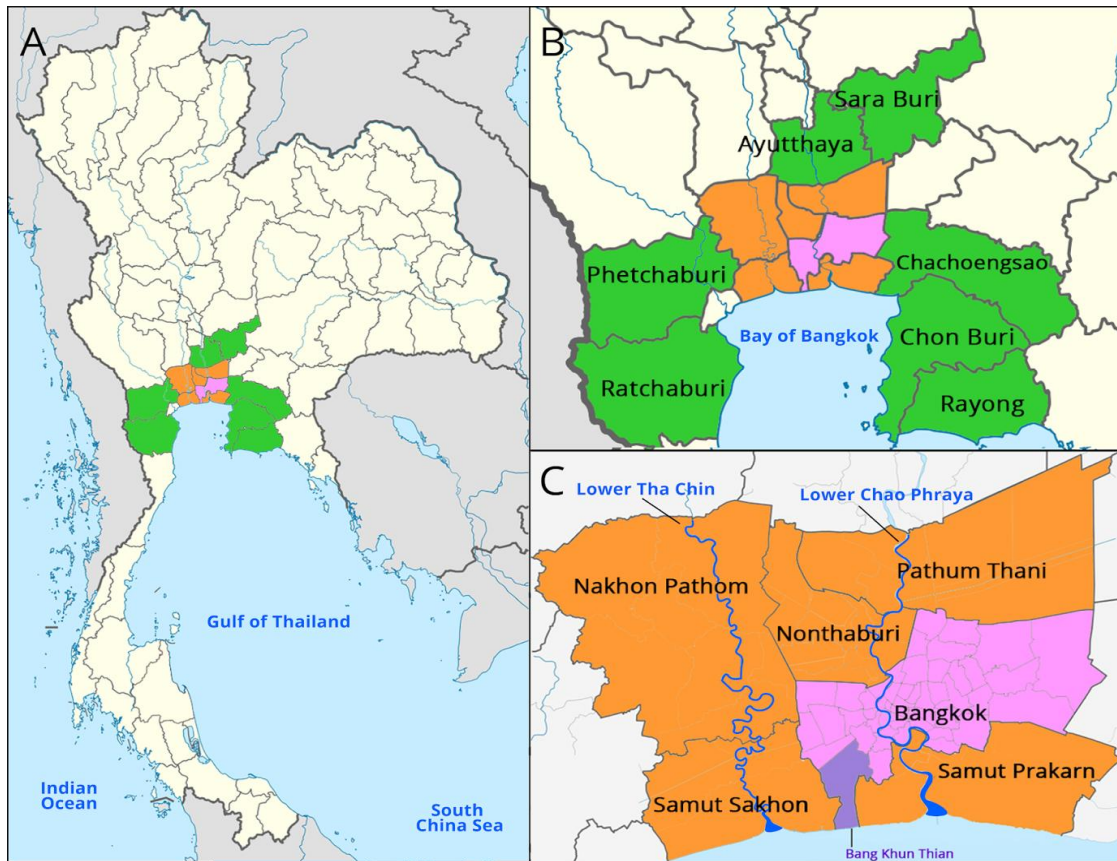
highest level". A Samut Prakarn PAO officer agreed, commenting that, "[t]he corruption issue is stopping solutions from being implemented". This section goes on to describe the three major types of corruption in the sector and examines their underlying drivers.

Bribes to avoid paying wastewater fees or to enable illegal wastewater dumping

A major source of corruption is at the citizen-institution interface; this includes bribes to government officials in order to obtain factory licenses or to avoiding paying fines or fees related to wastewater. According to Penchom Saetang, director of the local NGO, Ecological Alert and Recovery Thailand, it is also related to the rise of imported waste in Thailand, particularly in the EBMR. In June 2019, she raised the question, "What does Thailand want with this kind of waste?", and then herself answered that, "corruption has a lot to do with it" (quoted in Rojanaphruk, 2019). A Thai NGO official added that in June 2020 she interviewed a recycling factory owner who told her that, according to the law, the licensing fee to operate that type of factory was around 10,000 Thai baht. She added, however, that to obtain the license he had to pay one million baht to provincial DIW officers. One benefit he received in exchange for the bribe was that he would not be fined for discharging wastewater from his factory. She called this process a "vicious cycle" because it leads to a steady increase in corruption and wastewater dumping.

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Figure 1. Map of a) Thailand; b) the Extended Bangkok Metropolitan Region; and c) the Bangkok Metropolitan Region.



Source: Fisher (2021).

Another alleged licensing case occurred in Rayong (see Figure 1), a city on the east coast of the Gulf of Thailand. As mentioned, farmers there complained that wastewater was destroying their crops. According to a local NGO official, at first this factory did not process waste and there was no wastewater problem. Problems arose, however, when the company Win Process took over the factory. The company obtained three factory licenses for operating different types of industrial activities: 1) Type 40, for sorting unusable materials, compressing paper, metal and plastic scraps; 2) Type 60, for

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smelting and casting metals; and 3) Type 106, for recycling used fuel oil and for container-cleaning with solvents (Pawa, 2020). The NGO official pointed out, however, that the owner should not have received the last two licenses because the factory is located in the middle of an agricultural community, not an industrial area, and it is illegal to operate those types of industrial processes in such areas. He raised the questions, "How could the company obtain the Type 60 and 106 licenses if not for corruption? The [Win Process] owner is a politician in this province so he has very good connections. Is this why he can operate the company here?" His answer to these questions was that, "provincial [DIW] officers just ignored the [wastewater] problem"; they also ignored the complaints of the farmers and the NGO.

As he further elaborated:

We tried to close this company for a long time but because the owner is a politician and the provincial office supported him by issuing the two licenses, the government closed their eyes when the people informed them that the factory was dumping wastewater into paddy fields.

A former provincial officer of Chonburi Province, where the tourist city of Pattaya is located, stated that according to Environmental Impact Assessment (EIA) regulations, if somebody wants to build a hotel of 80 rooms or more in Pattaya, before he or she can build the hotel the owner must submit an EIA report and receive approval from the provincial MONRE (Ministry of Natural Resources and Environment) office. The EIA report must include a plan to treat wastewater, such as installing septic tanks and pipes

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which will connect the hotels to wastewater plants. To successfully obtain an EIA, however, the cost of the necessary equipment and technology and the inspection fees can amount to as much as 10 million baht and the process can take a long time.

Therefore, according to the officer, "so many owners build only 79 rooms or pay the local offices a bribe to receive approval. About 70-80% of owners can build [hotels] without an EIA". Once officers receive the bribe, they do not monitor the wastewater from these hotels, even though some of the hotels directly drain their wastewater into public pipes. He said that this was the case not only in Pattaya but also in other tourist destinations such as Phuket and Koh Samui. Another NGO official added that when there are EIA hearings, officials sometimes receive bribes from company owners who hope to receive an EIA and, in exchange, "they let the EIA pass".

Another example is from Om Yai municipality in Nakhon Pathom, which is about 35 km from Central Bangkok. A municipal officer told us that wastewater is a major problem here, with a major source being households. The municipality tries to force householders to install a septic tank to treat wastewater but, without enough municipal staff to monitor the situation, many households just release their wastewater directly into public waterways. The second major source of wastewater in Om Yai municipality is from factories. While some factories have built pipes which connect their wastewater to nearby WWTPs, others have installed pipes which illegally drain their wastewater into waterways. The municipal officer declared that most of the latter "have connections with politicians and decision-makers so the municipality cannot do anything". She also added that these factories often financially support municipal activities.

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Overall, many factories in the EBMR are not concerned about violating environmental laws regarding waste disposal, including wastewater. This is because, as a Thai NGO official opined, "provincial officers do not fulfil their duties in monitoring, regulating, and enforcing the laws. So the factories are not afraid anymore. They can just pay some money to the officers". In return, officials will respond more slowly or ignore complaints, avoid law enforcement, or warn polluting factories before inspections (Tevapitak and Helmsing, 2019). Bribery is therefore one key reason why the EBMR has the highest concentration of factories that do not comply with effluent standards (Wangcharoenrung 2017). Other reasons – as already discussed – are the lack of inspectors and Thailand's fragmented wastewater governance.

Although interviewees did not give underlying reasons for extensive bribery, we suggest a few. Officials in this sector – as throughout the Thai bureaucracy – are poorly paid and they therefore have an incentive to supplement their incomes from bribe. Also, as discussed earlier – and again as is prevalent throughout the Thai bureaucracy – these agencies have a subculture of accepting bribes. The Om Yai and Rayong examples point to yet another driver, the prevalence of patron-client relationships. Patrons (politicians) protect their clients (factories) so that the latter can flout laws and evade fines. A final reason is the lack of transparency, which is discussed below.

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Corruption related to WWTPs

The second major source of corruption is fraud within public financial management, specifically that of WWTPs. In July 2012, PCD Secretary General Wichien Jungrungruang stated that, nationwide, 83 billion baht (US\$ 2.64 billion) had been spent on 101 WWTPs, 91 of which were fully completed. He then admitted that almost half of the country's wastewater treatment facilities had serious operational problems and that, consequently, the country had only 43 'good' WWTPs (Bangkok Post, 2013).

Unfortunately, this problem has not only continued but worsened. A Thai NGO official reported that as of 2020 approximately 80% of wastewater treatment facilities were unusable or functioned poorly after they were constructed. Another Thai NGO official concurred:

*Many municipalities borrowed money from the [central government's] environmental fund to build wastewater treatment plants but did not operate these plants very well because they could not afford the electricity costs. This is because they did not include this cost in their budgets. When they set their budget, they always request funding for hard equipment for construction, but not for the plants' operations.*³

He added that they did this because these plants presented an easy opportunity for government officials to make money from bribes. He said that for local construction

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projects, including wastewater plants, "it is well-known that the central government takes 12%, the provincial government takes 7%, the middle level takes 5% and the lowest level takes a 3% commission. So in total 25% already of the costs" are fraudulent. Another Thai NGO official whom we interviewed confirmed this, commenting that, "There is a lot corruption in the procurement process. For example, a construction company might charge 40 million baht for the plant, but really they spend 30 million baht on its construction". The head of a construction company agreed, telling us that,

Normally we have to budget in at least an additional 30% [for corruption costs] (...). It starts from the time the government lists which companies can bid for the project. If you want to be on the list you have to pay (...). In the city there are many committees so we also need to pay those committees as well.

As a result, contractors often overcharge for the plant's construction materials and technology and often use those of poor quality. An NGO official asserted that land also plays an important role in the corruption process of wastewater plants, such as in site selection. The Khlong Dan example discussed below vividly illustrates this linkage. The NGO official further added that,

We only have reliable evidence for one case: Khlong Dan. There are so many cases regarding wastewater plants not only in Bangkok but throughout Thailand

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but we don't have enough reliable evidence on those cases. Most facilities are not usable or do not function well.

A municipal officer of Pattaya, which has large population inflows from tourism, also suspects that corruption could have played a role in the poor performance of one of the city's two wastewater plants, Soi Wat Boon. She said that a contractor was hired to build the plant for 125 million baht (US\$ 3.8 million). She explained, however, that,

[t]he plant did not operate properly during the test run period. The project was already finished too late and so the contractor's contract had finished. Some said that the Pattaya mayor supported the contract and let the contract end so the municipality could not test what went wrong. There was likely under-the-table money given by the contractor to the Pattaya city staff. That is why the plant did not function well and there was no monitoring. As of now, the plant is not operating yet.

In May 2018, Pattaya netizens complained to the national government and shared pictures online of visibly polluted wastewater being released on Pattaya beach; they also reported a foul smell. This was not the first time that such an incident had been reported in Pattaya (Pupattanapong, 2018). Wastewater from houses and businesses is channelled to the city's wastewater plants. However, the city's first plant, according to a municipal official, does not have sufficient capacity to treat the rapidly increasing

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volume of wastewater. Soi Wat Boon is the city's second plant, which is supposed to enable the city to fully treat all of its wastewater. Corruption related to this plant is therefore likely contributing to the problem. The head of a construction company believes that corruption is worsening; he told us that, "Ten years ago, the government officials hesitated to ask for money, but now they ask for money like it is normal".

As stated by the Thai NGO official, the only clearly publicly documented case of corruption regarding WWTPs in the EBMR is Khlong Dan, which was supposed to treat the wastewater of 1.2 million residents and about 4000 factories. Although this case occurred more than five years ago, it is still worthwhile including in this report. Not only is it the only documented case of corruption, but its failure to be constructed due to fraud still contributes to insufficient wastewater treatment capacity in the EBMR. A Samut Prakarn provincial official stated that, "We do not have enough plants here. However, we have one at Khlong Dan but it still has not opened yet".

Wider integrity failures

There are a number of wider integrity failures which also significantly exacerbate wastewater problems and which enable the persistence of the first two types of corruption. First, to return to the issue of WWTPs, according to a Pattaya municipal officer, local politicians in the EBMR, particularly mayors, prefer to spend their budgets on the construction of more lucrative and politically advantageous projects, rather than on building WWTPs and obtaining EIA licenses. The officer explained that in 2010 the national government identified Pattaya as a special area for environmental protection. This meant that if the Pattaya municipality wanted to build a WWTP with a capacity of

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more than 3000 m³ per day, which is what Pattaya needs, the city needs to receive an EIA approval before any expansion can occur. The problems, however, are not only that obtaining an EIA approval requires a lengthy approval process, but also that the Pattaya municipal government did not prepare a budget for this project. Budget allocation depends on local politicians such as the Pattaya mayor, but these politicians prefer to spend money on roads, floodwalls and buildings. The official reckoned that this is because such projects still present lucrative opportunities for procurement corruption and can also boost these politicians' re-election prospects. As Larkin argues (2013: 333), these projects are not merely technical; "[they] also operate on the level of fantasy and desire". Voters can more easily see projects that produce roads and other visible infrastructure and can more readily gauge their potential benefits; meanwhile, as the Pattaya municipal official also stated, wastewater treatment "is hidden underground so voters will not care about it unless it affects their lives".

A second failure of integrity occurred in April 2019, when the National Legislative Assembly under the military government revised the country's 1992 Factory Act. According to a local Thai NGO, this case is a strong example of business groups lobbying to weaken regulations through exerting pressure and influence. Supant Mongkolsuthree, chair of the Federation of Thai Industries, supported the new amendment, stating that, "More than 80% of factories are SMEs [Small and Medium Enterprises], and they need support from the government more than large factories do" (quoted from Apisitniran and Maikaew, 2018). Under the new law, only industrial companies with more than 50 employees which have machinery exceeding 50

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horsepower are subject to monitoring for waste discharge, including wastewater and anti-pollution measures. Analysts project that over 40% of the country's factories will benefit from the looser regulations, including companies with licenses to import electronic waste for recycling (MacanMarkar, 2019). Furthermore, factory licenses will no longer be subjected to a renewal process, instead allowing companies to extend their operation licenses without undergoing the verifications which had previously been required (Roberts-Davis and Saetang, 2019). Consequently, as Penchom Saetang argues, "not only will these small factories pop up everywhere, they will also not be subjected to regular inspections" (quoted from Rujivanarom, 2019).

Various NGOs, however, believe that this new law is unfair and that it is designed to satisfy business groups. They feel, in particular, that the law will increase pollution and corruption and will facilitate an increase in waste imports. "The new Factory Act opens the doors for companies to invest in factories and plants that will result in the country becoming more polluted", said Supaporn Malailoy, manager of the local NGO Enlaw Foundation. As Penchom also stated, the new law "will increase non-transparency and corruption" and will cause "worse environmental problems" to "pop up" (quoted from Macan-Markar, 2019). This amendment to the Factory Act followed another law which had disappointed environmentalists: Order Number 4/2559. Passed by the military government in 2016 without any consultation, this order suspended town and city planning laws that had previously prevented the opening of toxic and polluting waste processing projects in areas upstream of, or near, where people live and farm. Somnuck Jongmeewasin, an academic at Silpakorn University International College, argued that

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the order has increased the number of waste processing factories across the country because a new plant or factory "only needs permission from local authorities". But, as Somnuck asserted, this order also led to "corruption between the local government officials and the companies" (quoted in Macan-Markar, 2019).

The third failure of integrity occurs when government officials laxly enforce regulations regarding wastewater and when they monitor wastewater pollution in such a way as to conform to the government's priority of supporting factories and other businesses. A PCD official stated that the PCD, which cannot bring the law to bear in instances of non-compliance, will inform the DIW that factories are illegally dumping wastewater and will then send them the test results. When this occurs, however, the DIW does not fine these factories; instead, it informs them in advance of its visit. Consequently, "when [DIW] staff visits, the factory will have already temporarily improved its water quality, so DIW will not find anything" and, after the DIW visit, the factory will revert to its old practice of secretly dumping wastewater. Another PCD official stated that government officials from other agencies, including PCD and the police, knew that factories were illegally dumping wastewater but turned a blind eye to the problem; he stated that, "us officers know that something is wrong but we just ignore it". He called this practice "not my business corruption". Despite the two agencies' delineation of responsibilities, they rarely conduct joint inspections or systematically corroborate findings (Roberts-Davis and Saetang, 2019). Relatedly, a third PCD official stated that farmers' feeding of river fish is illegal and is polluting the rivers due to the fish farms' release of untreated wastewater into those rivers (Sampantamit et al., 2020). Many farmers continue to do

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so, however, as the Ministry of Agriculture secretly allows it to happen. This is because, according to the same official, Ministry officials prioritise the interests of farmers over those of the wider public.

These integrity failures have arisen due to the undue influence of business groups on the policymaking process that has risen since the 2014 coup (see Kanchoochat et al., 2021); it is also due to intergovernmental fragmentation and conflicts of interest. The politics of visibility play their part as well; that is, groundwater resources such as treated wastewater, being less visible, receive less attention from the public and the press (Colven, 2020) and thus are a lower priority for political leaders.

Conclusion

This chapter explores the problem of corruption in water and sanitation through a case study of the wastewater sector in Bangkok and provides an overview of the different types of integrity failures occurring within it. We find that horizontal and vertical fragmentation, weak oversight, deregulation of environmental requirements, and flawed incentive structures within state agencies have all contributed to widespread corruption in the sector.

Corruption in this sector is significant in several ways. As Adam et al. (2020: 11) argue, “corruption corrodes public institutions and causes the loss of legitimacy and credibility of the State in the eyes of citizens.” Thailand has faced widespread protests in

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2020 and 2021, partly due to the erosion of the state's credibility among the nation's youth (Bandow, 2020). As this chapter also shows, corruption in the wastewater sector in the EBMR deepens inequality, benefiting government officials and business owners while harming the livelihoods of the poor, such as smallholder farmers, and degrading the water quality vital to their survival.

This study offers several important insights into the political economy of corruption in the wastewater sector. First, echoing Colven's (2020) argument about land subsidence in Jakarta, the inherently limited visibility of wastewater issues makes them less likely to attract attention, allowing corruption to flourish and making it harder to address.

Second, while decentralization is often seen as a way to reduce corruption by bringing management closer to service recipients (McGuire, 2010), our findings suggest that it is not a silver bullet for improving wastewater management or reducing corruption. Third, as Goel and Nelson (2011) found in the US, more fragmented governance structures can heighten corruption. In the wastewater sector, fragmentation creates more opportunities for rent generation while reducing accountability and transparency.

Our findings also point to several policy implications. To reduce integrity failures in the wastewater sector, the Thai government should revise the Factory Act based on public input. New facilities should undergo public hearings, Environmental Impact Assessments (EIAs), and emissions inventories. Discharge permits should be required, and pollution data, including wastewater data, should be made publicly available.

Information should be easily accessible and clearly presented to increase transparency

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(Roberts-Davis & Saetang, 2019). Another key recommendation is to strengthen the implementation of the Freedom of Information law. The government should set specific timeframes for releasing information about polluting industries to those who request it. The government should also revise laws to expand the authority to fine and charge those who illegally discharge wastewater, and the PCD's authority should be extended to cover industrial, agricultural, and residential wastewater. Additionally, agencies like the DIW, which have been linked to corruption, should lose their authority. This would also reduce fragmentation within wastewater governance. Finally, as suggested by an NGO interviewee, the PCD and other actors should enhance the capacity of local watchdogs, such as the We Love Tha Chin River Club, by providing additional funding and helping them network with government officials and other watchdog groups.

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