

HOW TO TACKLE TRIPLE CHALLENGES OF SOLID WASTE, PLASTIC POLLUTION, AND URBAN FLOOD RISK

World Bank's approach and initiatives



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GLOBAL TRENDS – RAPIDLY INCREASING VOLUMES

Waste volumes continue to increase: 50% more waste expected by 2050 compared to 2022

Extraordinarily large quantities of waste remain unmanaged – 30% of global waste is uncollected or openly dumped

Under a business-as-usual scenario, the situation is likely to worsen significantly over time

Improvements will require substantially greater efforts, investments, and capacity

Large and growing volumes of waste pose a mounting challenge for local governments and strain the economy, public finances, health, and the environment

INTERPLAY BETWEEN WASTE AND PLASTIC POLLUTION

Estimated **80%** of plastic in marine environments
Comes from leakage from countries with inadequate
waste management systems

Inadequate waste management infrastructure

Inadequate waste collection service

Waste dumping and scattering

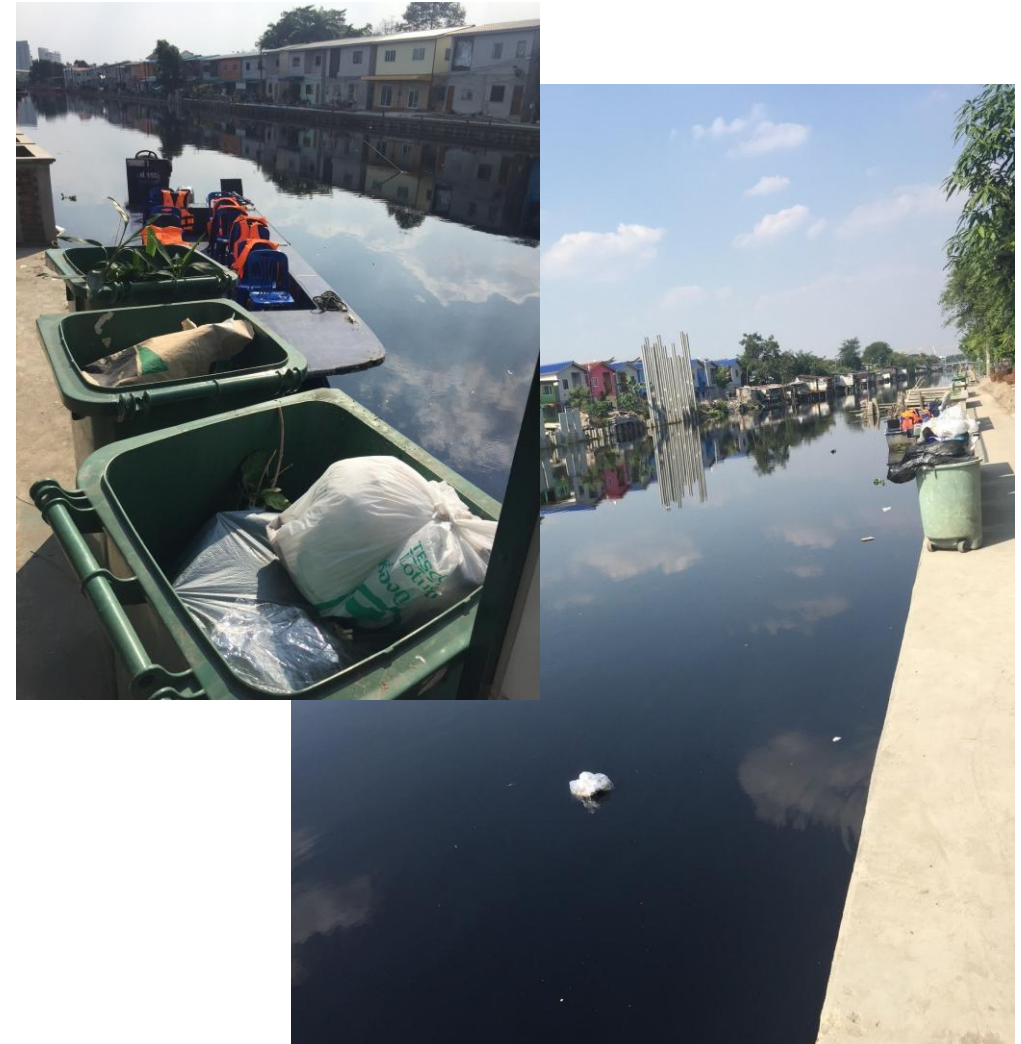


Figure 3.

CONCEPTUAL FRAMEWORK FOR MODELING MATERIAL FLOW (GREEN/LIGHT BROWN), LEAKAGES (RED) AND WASH-OFF/TRANSPORT OF PLASTIC WASTE FROM LAND-BASED SOURCES VIA RIVERS (BLUE)



WHAT TYPES OF WASTE GOES INTO URBAN WATER ENVIRONMENT?

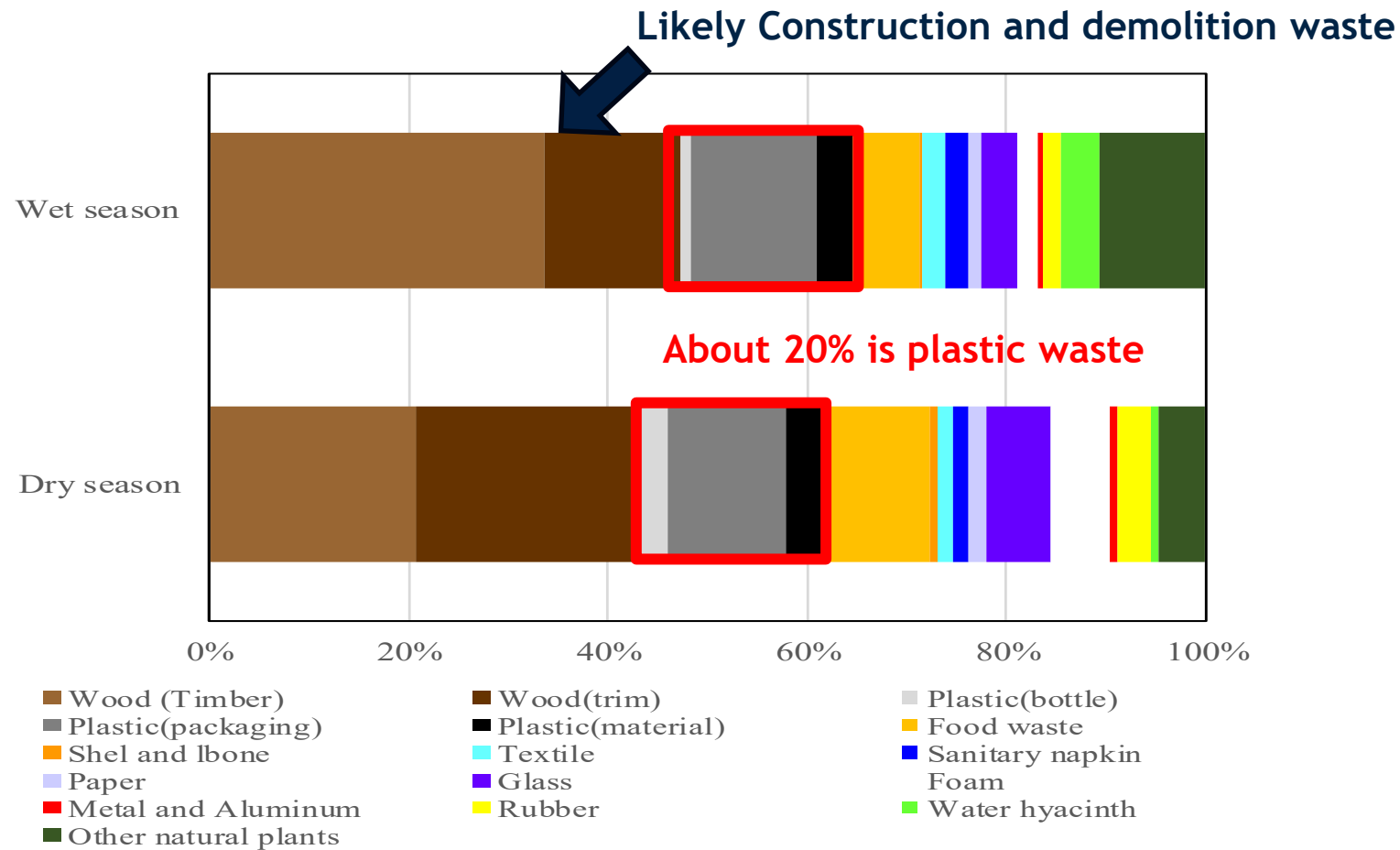
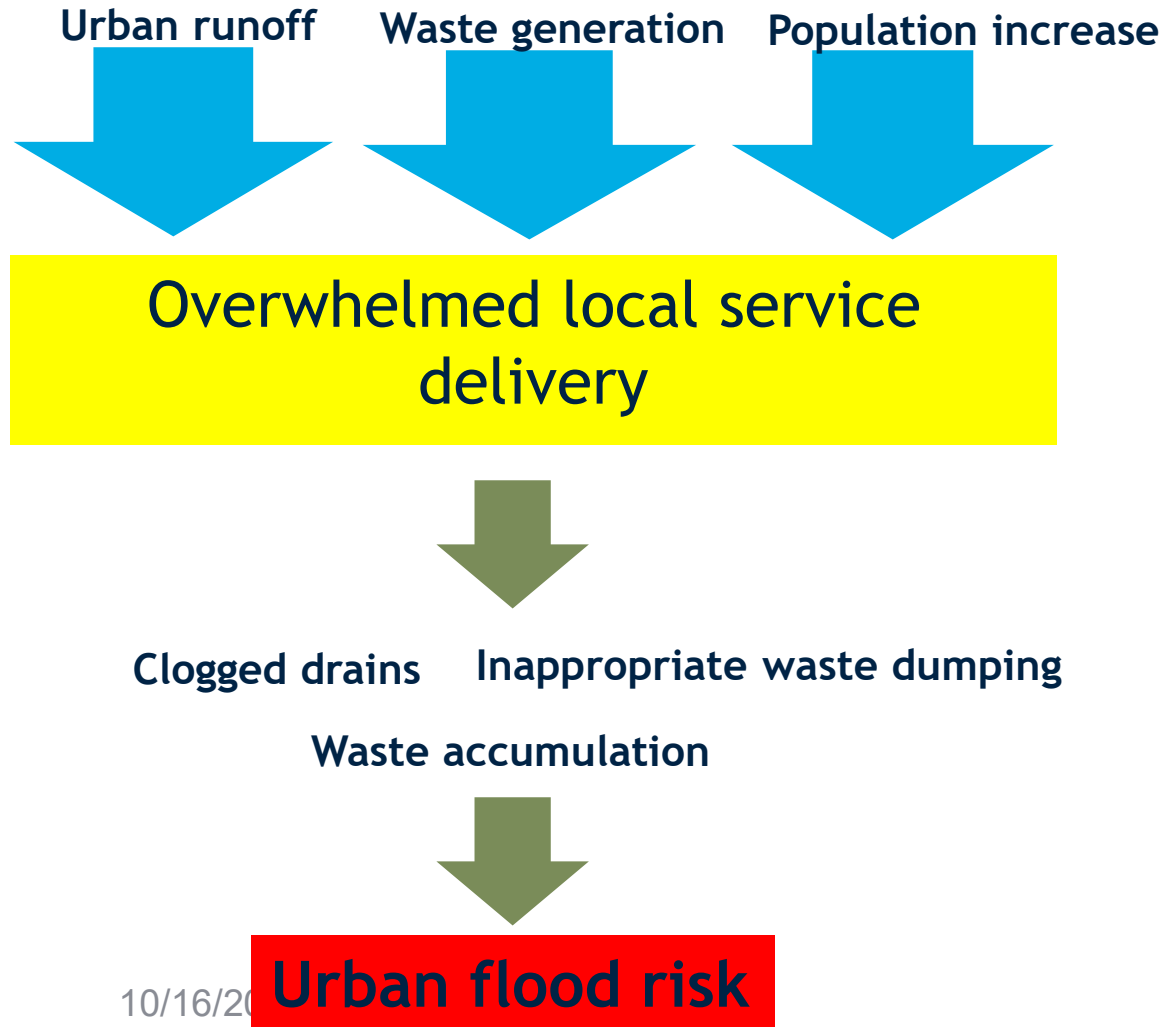


Fig. Composition of canal waste in Lat Phrao canal, Bangkok¹⁾

1) Ishigaki, T., Thaweesub, R., Kubota, R., Tajima, R., Lieu, P. K., Chiemchaisri, C. (2018): Investigation on solid debris in urban drainage system in tropical Asian cities. Proceedings of the 29th Annual Conference of Japan Society of Material Cycles and Waste Management, 541-542.

INTERPLAY BETWEEN WASTE AND URBAN FLOOD RISK



What is local solution to waste-plastic-
urban flood challenges?



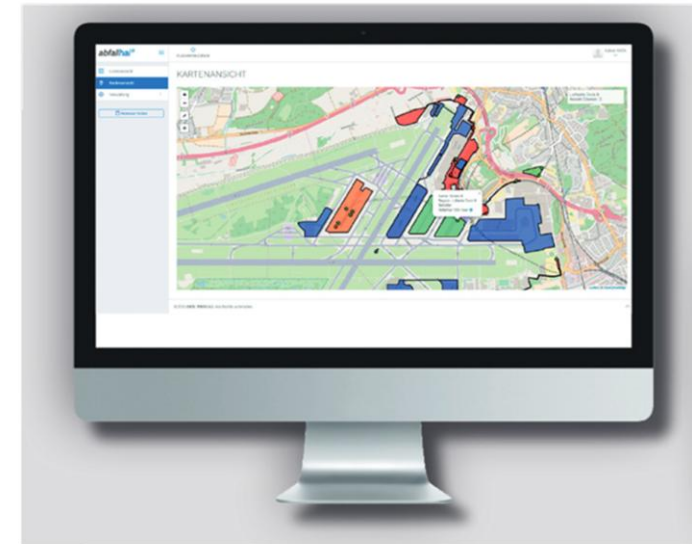
WASTE COLLECTION SERVICE IMPROVEMENT

- Effective waste collection from both **households and public area** is key in preventing waste enters waterways by littering and scattering
- Strategize waste collection by targeting **high-risk areas like waterways and coastlines**
- Reliable waste collection system with **good collection planning and education to waste collectors** lead to decrease in waste leakage
- Awareness raising to residents **to properly seal waste bags** is small but impactful way to mitigate unintentional waste scattering
- Making the waste collection service **“visible”** to the residents build trust in the government local service



World Bank project interventions – Benin project

- Construction and rehabilitation of drainage networks
- Results-based financing to expand waste collection coverage, improve service delivery, and promote community-based waste management enterprises
- Awareness raising about the impacts of improper waste disposal
- Digital Tools and Early Warning Systems
- Sustainable Operation and Maintenance



More recommendation can be found here.



Kitakyushu Model Subsector: Interplay between Solid Waste and Urban Flood Risk



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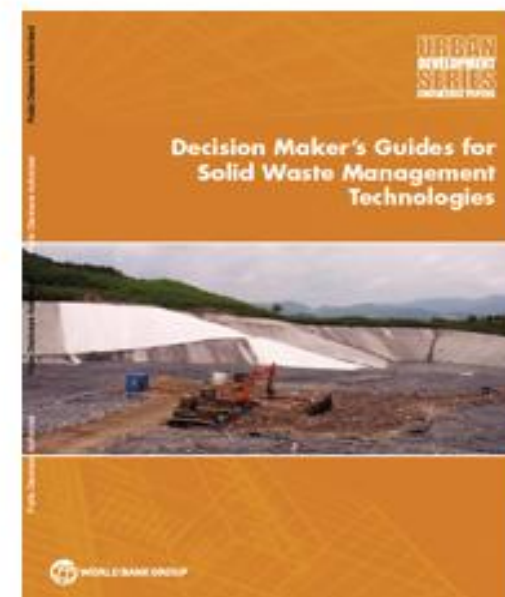
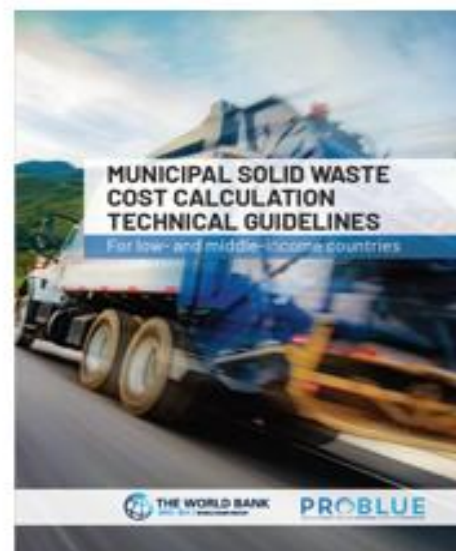
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Thank you