

# Assessment of Community Resilience and Capacity Building against **Plastic Pollution and Climate Change**



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# 01

## Plastics are a Big - and Growing – Part of Global Pollution



Foam packaging



Plastics bags



Utensils plastics straws



Plastics bottles



Cups and plastics utensils

- Single-Use Plastics have become a **main part of river and ocean waste problems**
- 9% recycled, 12% incinerated, and **79% landfilled or littered in the environment**, especially in the oceans and rivers.

Plastic revolution has created  
**“single-use”** and  
**“throwaway”** culture  
around the globe.

### Linear Economy



# 01 Plastic Land-Based Sources and Plastic waste Management in Riverine Community: How dire is the situation?



## Land-based source

Generated from household activities washed to water way



80% of plastics in the river and ocean are from **“land-based sources”**



Ineffective waste management system

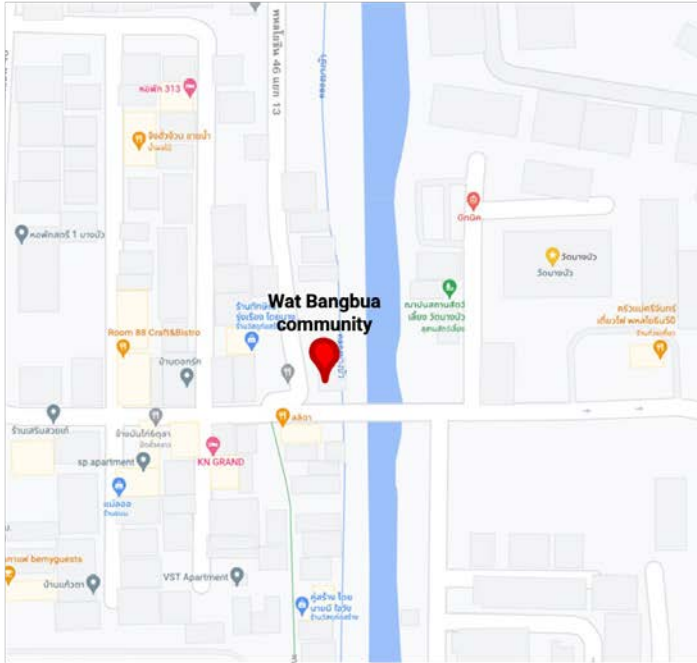


Plastic litter is flushed into the ocean by storms and river systems





# 02 Community **baseline survey** : How dire is the situation?



(a)



(b)

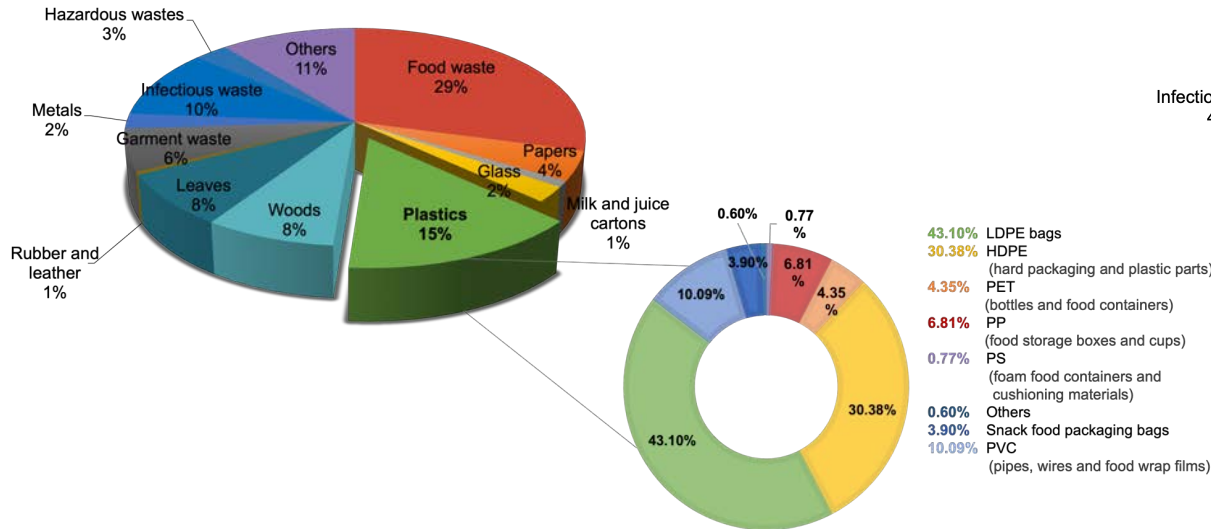


**Wat Bangbua community** is a riverine community, located nearby Ladprao canal, Chatuchak, Bangkok

- Total area: 6,832 m<sup>2</sup> or 4.27 rai
- Total household: 125 house (0.065 inhabitants per m<sup>2</sup> )
- Vulnerable to **both plastic pollution and (flooding) impact**
- Garbage open dumping and leakage into canal, especially plastic waste
- Flooding causes immediate impacts including loss of human life, damage to property, destruction, and deterioration of health conditions

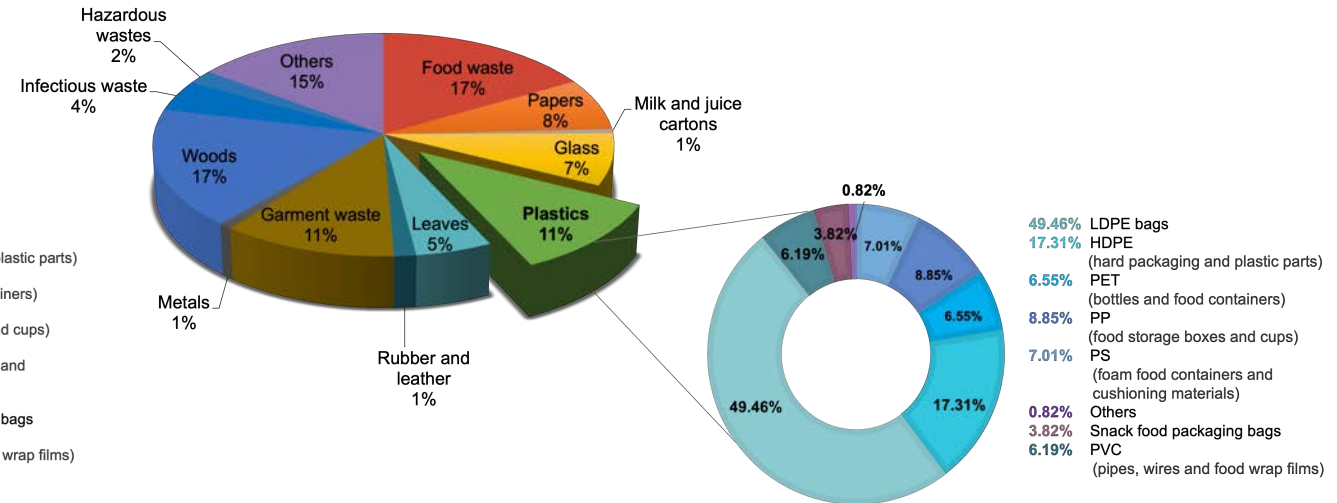
# 02 Community baseline survey : How dire is the situation?

## Waste composition at the household



- **Major component at the household:** Food waste (29%) and plastic waste (15%); mostly LDPE (43%) and HDPE (30%) ; hard packaging
- Infectious wastes (e.g. used face masks, ATK waste, 10%)
- Mixed solid waste points to **the absence of provisions for proper solid waste segregation and collection in the community.**

## Waste composition in the canal

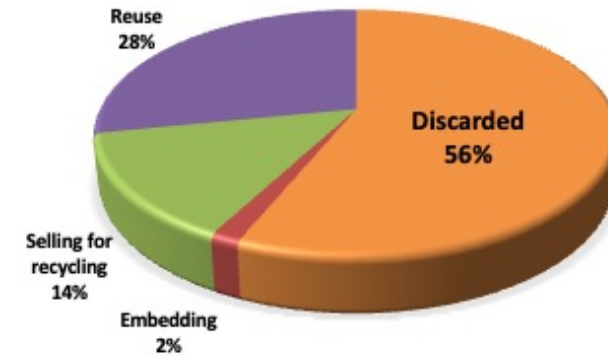
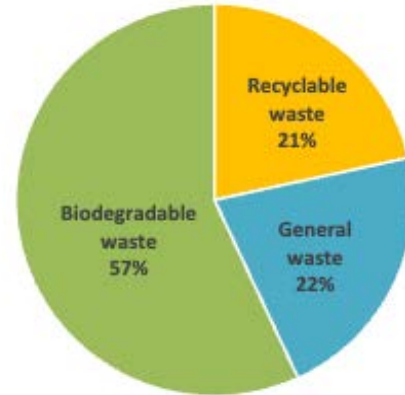


- **Major component:** similar to the composition of household solid waste, Food waste (17%) and plastic waste (11%); mostly LDPE (49%) and HDPE (17%) ; hard packaging
- the linkage of the plastic waste generated from household activities and the floating plastic waste found in the canal is a **same route**

# 02 Community **baseline survey** : How dire is the situation?



Questionnaire survey to assess community vulnerability to plastic pollution and flooding  
\*Pre-test (n=10) and sample group (n=70)

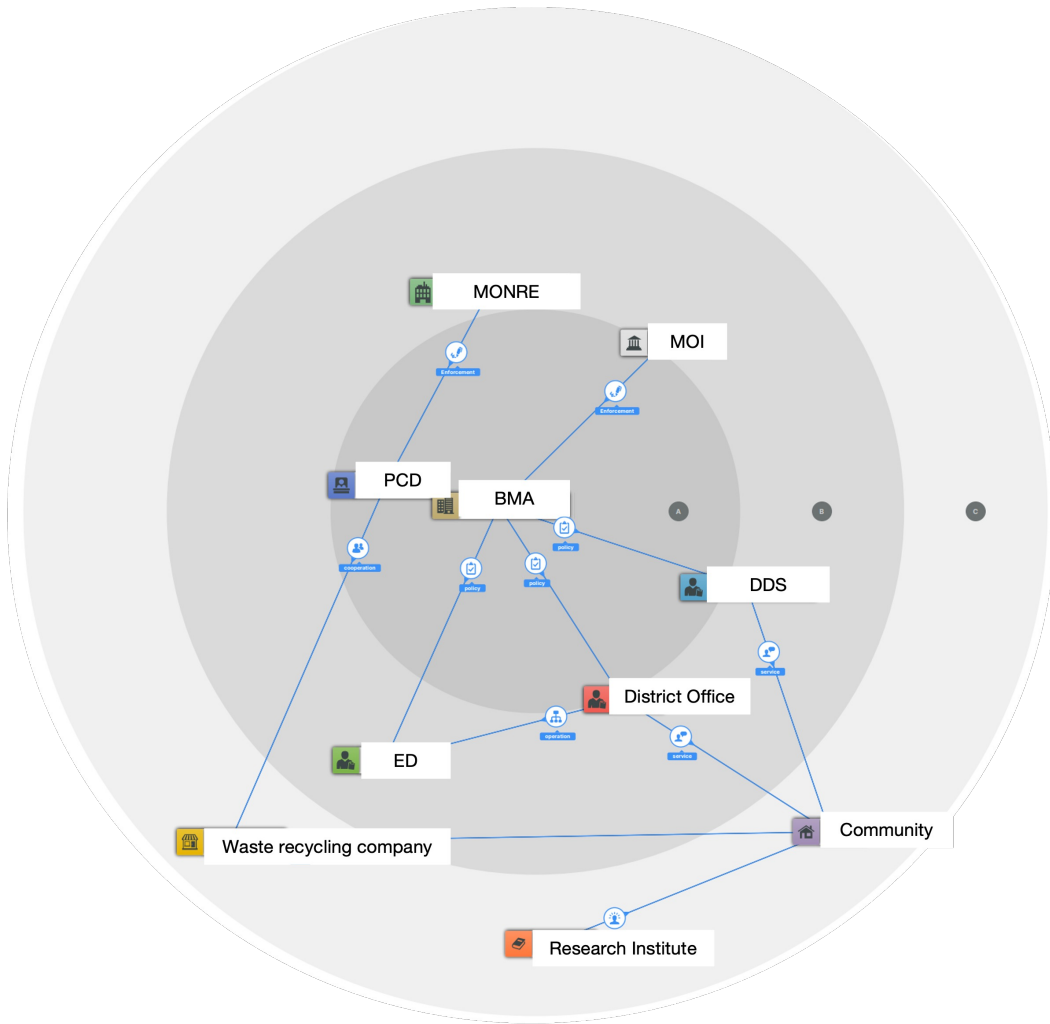


### Key findings:

- Household waste generation including biodegradable (57%), recyclable (21%), and general waste (22%)
- Half of plastic waste were discarded (56%), especially plastic bags obtained from shopping
- People have discarded the garbage without segregation (>50%), due to insufficient container for the separated waste and the community have not an antique shop.
- 70% of participants accept the using of OK recycle application (user friendly and enhance segregation ability )
- 90% of participants willing to participate the application training activity.

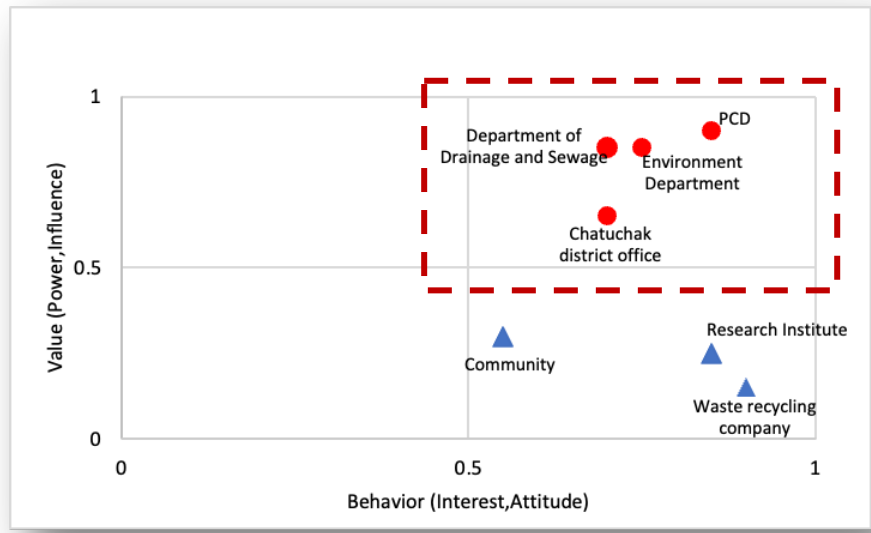
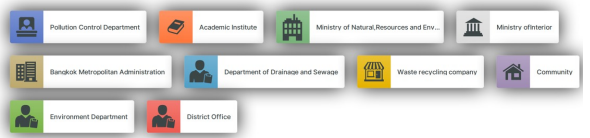


# 02 Stakeholder mapping : Who are involved?



- Enforcement
- service
- CSR
- Support
- policy
- operation
- cooperation

- A** Essential
- B** Important
- C** Interesting



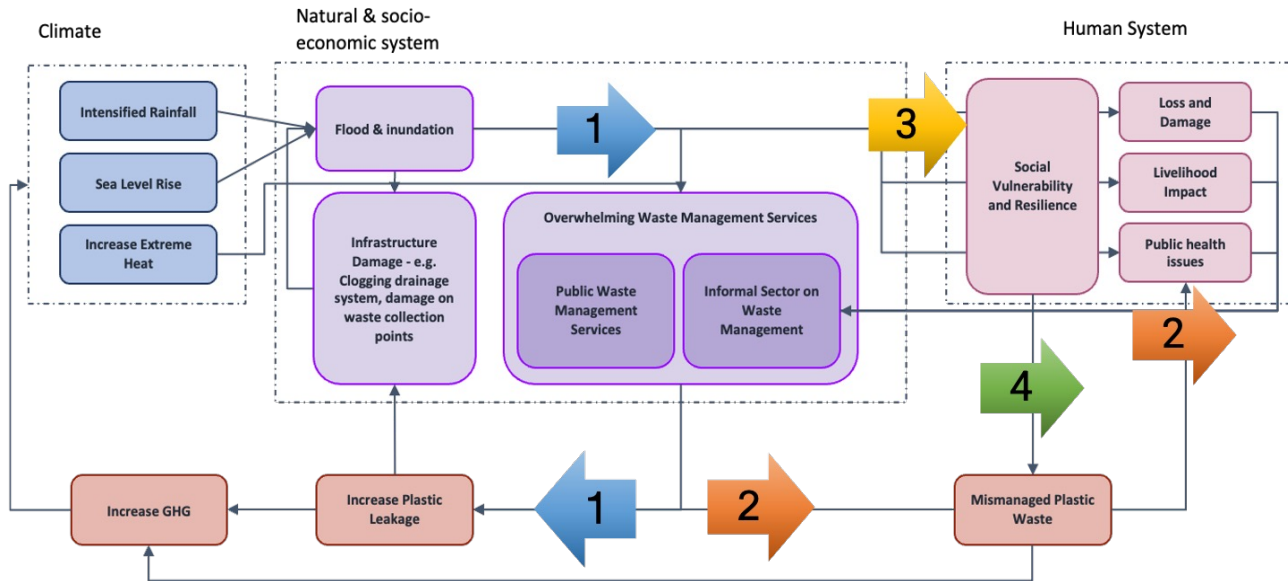
Levels of involvement of different stakeholder groups

### Results of stakeholder analysis based on their power and interest:

- Key stakeholders:
  - Pollution Control Department (PCD)
  - BMA including Department of Drainage and Sewage (DDS), and Environment Department (ED)
  - Chatuchak District Office
- Involved Stakeholders:
  - Research institute
  - Waste recycling company
  - Community



# 03 Assessment on the resilience and impacts



## Key findings:

- ✓ An effective flood prevention operation and adaptation strategies of proper plastic waste management can possibly **enhance community's resilience against plastic pollution and flooding**, as well as reduce health risk
- ✓ **People aware the impacts of floods and plastic pollution, people increase the motivation on working** on better plastic waste management



Households that were impacted by floods were more likely to be impacted by plastic pollution regarding to increased mismanaged plastic waste and leakage ( $p < 0.10$ )



Those who were affected by floods were more likely to have physical health problems ( $p < 0.10$ )

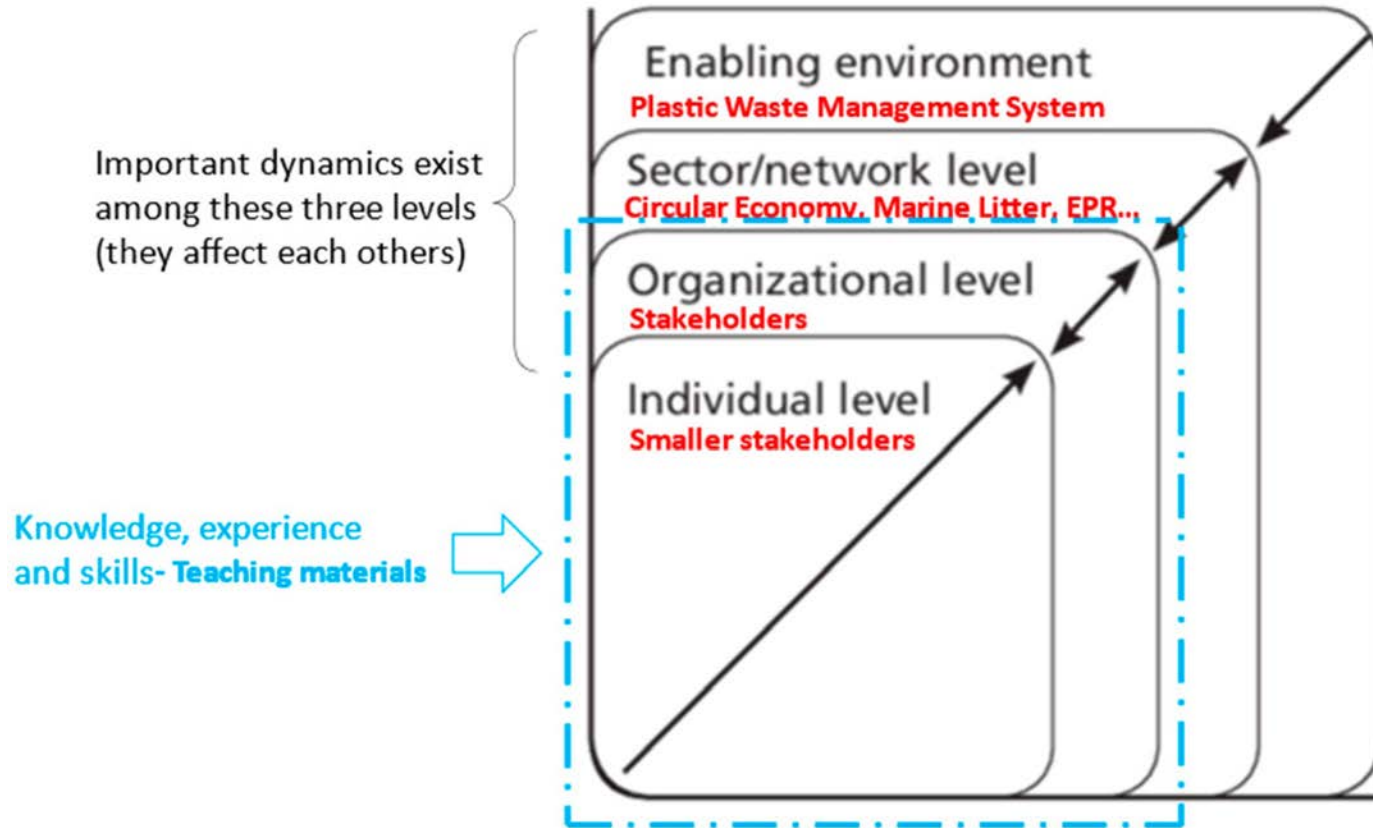


There is no significantly different among socially vulnerable groups, gender equity, and informal sector works can be affected by the differential impacts of floods and improper plastic management ( $p < 0.10$ )



Those who were affected by floods were more likely to participate in sorting household waste. ( $p < 0.10$ )

# 04 Capacity building and development



Capacity development framework in the context of plastic waste management (blue lines indicate at which level training takes place).

## Key findings:

- Capacity development (CD) framework include: individual level, organization level, sector level, and enabling environment
- In plastic waste management system, to achieve CD through enhancing the efficiency of the stakeholders
  - ✓ Improved through the strengthening of their relationships with other stakeholders
  - ✓ Influencing their attitudes, values, awareness and motivations with proper training and education.



# OK Recycle Application



## Capacity building trainings; at Wat Bangbau community (16 February 2023)

- Solid and plastic wastes segregation
- Application trainings



### OK Recycle Application : Seller

ตัวอย่างรายงานการส่งวัสดุรีไซเคิล

Example of selling history

วันที่ส่ง	ชื่อผู้ซื้อ	จำนวน	ราคาต่อหน่วย	รวม
16/02/2566	ATF Buyer	100	90.00	9,000.00
16/02/2566	ATF Buyer	110	110.00	12,100.00

Example of accumulated selling volume

ประเภท	ปริมาณ	ชิ้นรวม	มูลค่ารวม (บาท)
ขวดน้ำดื่ม	30,000	30,000	3,000.00
ขวดน้ำดื่ม (พลาสติก)	34,000	34,000	3,400.00
ขวดน้ำดื่ม (PET)	80,000	80,000	8,000.00
รวม	144,000	144,000	14,400.00

comparable to the reduction in greenhouse gas emissions

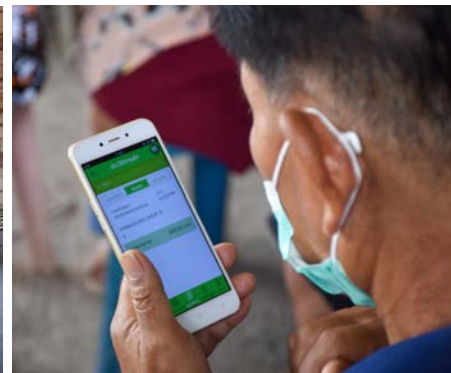
### OK Recycle Application : Buyer

ขั้นตอนการใช้งาน

1. เลือกประเภทวัสดุ (Choose the type of material)
2. เลือกวัสดุ (Choose item)
3. กรอกข้อมูล (Fill in item's quantity)

Click "save" to collect filled-in data

Click this button when finished with all items



- User friendly for both seller and buyer





**THANK YOU**