

# Climate Resilient and Inclusive Cities (CRIC) Urban Analysis

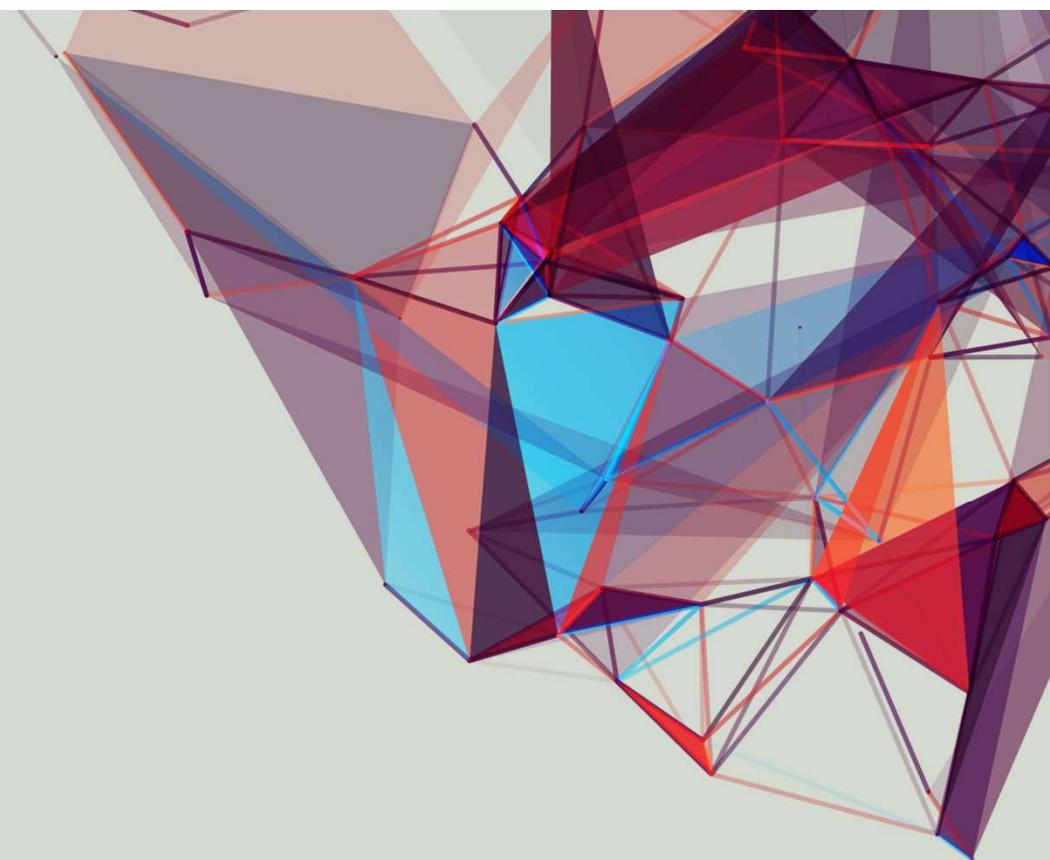
## Progress Report

Lead Expert: Mulya Amri, PhD

Team Member:

Jamalianuri

Risanti Delphia

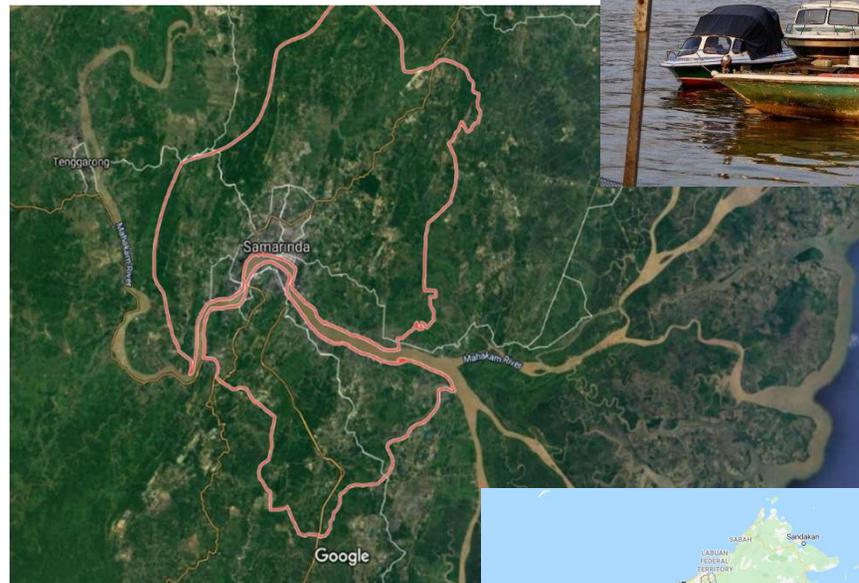


# Salient Features of Samarinda City

Samarinda is the **capital city** of East Kalimantan

The most populous city in Kalimantan  
Area: 718 km<sup>2</sup>  
Population (2019): 872,770

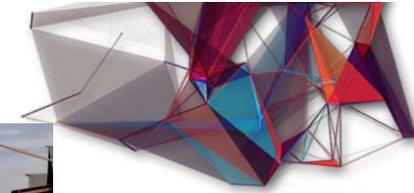
Samarinda is in the vicinity of **20 watersheds**.  
The Mahakam River is 500 meters wide & divides the city

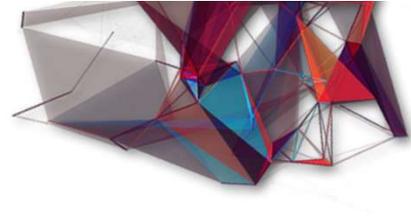


Surrounded by major oil and gas mining activities in neighboring districts, Samarinda has attracted many migrants

Much of the city lies in a low, flat area facing the bend of the river, making it prone to flooding from the river

Samarinda has a large land area. The city even has coal mining sites within its borders.





# Disaster Preparedness, Prevention, and Resilience

- The most common disasters are **floods and landslides**
- The Disaster Mitigation Agency stated that 80 percent of flooding is caused by human activities (behaviour issues, inconsistent economic activities with spatial planning)
- The Samarinda city has prepared a **disaster risk assessment** to assess the likelihood and magnitude of losses

## Local Government Actions

### Administrative Policies

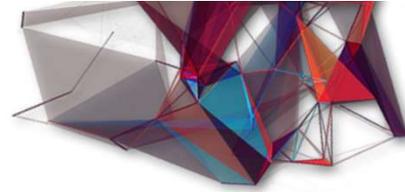
- Strengthen institutional capacity to enforce regulations
- Integrated disaster management plan
- Research, education, and training

### Technical Policies

- Protection of communities from disaster (mapping community evacuation process)
- Disaster management (emergency management and recovery)

Source: Samarinda City Risk Assessment Study 2018-2022, BPBD Samarinda City

# Air Pollution and GHG Mapping



## Air Quality

The Environmental Bureau measures ambient air using the Passive Sampler method

The results from 2017 to 2019 exhibited satisfactory results

## The Greenhouse Gas Emission Level (GEL)

In 2019, Samarinda City released Local Action Plan for Greenhouse Gases 2020-2030

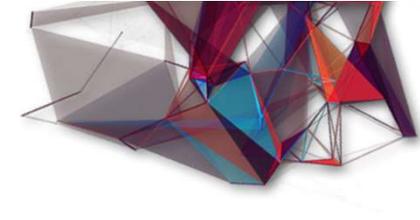
The biggest sources of GEL are energy and transportation sectors, contributing to 88% of emission

Source: Samarinda City Environmental Bureau

## The BAU Baseline and Reduction Targets of GRK Emission in Samarinda, 2020-2030

Sector	BAU Baseline		Mitigation		% Emission Reduction Scenario
	Total (ton CO2 e)	Percentage (%)	Total (ton CO2 e)	Percentage (%)	
Energy and transportation	42,084,972	88.25	34,897,252	88.3	17.08
Waste management	3,652,636	7.66	3,039,248	7.69	16.79
Farming, agriculture, forestry and other land usages	1,948,712	4.09	1,586,357	4.01	18.59
Total	47,686,320	100	39,522,856	100	17.12

# River Pollution and Waste Management



## Water Quality

The Environmental Bureau organizes a water quality test using the Sumitomo and Nemerow Pollution index method

Results from 2015 to 2019 show many rivers in Samarinda city are mildly to heavily polluted

The largest pollutant source is household waste, followed by waste from fisheries, livestock and industry.

## Solid Waste Management

Samarinda produces 600-800 tons of waste daily, dominated by food waste followed by plastic and paper waste

- Only 2 tons of waste is processed into compost monthly and around 1 ton of waste is picked up by scavengers daily.
- Bukit Pinang final landfill is overloaded; it is the only operating landfill, and it uses open dumping system.

# Land use, spatial planning, housing, and green open spaces



## Land Cover

Overall Samarinda City is dominated by natural vegetation (45%) but it is the only provincial capital that has mining area (**14% of the city's land area**)

## Problems

- Hydrological: potential to increase the amount of surface runoff
- Mining activities remove the vegetation and scar the land
- Un-reclaimed mining pits is dangerous due to toxic chemicals

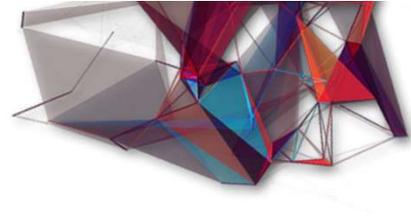
Current Public Green Open Space Ratio:  
**5.13% of city's land area**

- Ultimate target, as mandated by spatial planning law: 30%
- Informal settlement area: **86%** of total 112 km<sup>2</sup> residential area

## Problems

- Slums on the riverbank
- Building construction does not conform to land use plan
- No regulation covering the activities of mature land plots
- Growing area of informal settlements

Source: Samarinda City Environmental Bureau, Samarinda City Housing and Settlement Services



# Participation of civil society and governance

Lack of transparency and accountability, less integration and synergy of all urban stakeholders.

Low involvement of community in planning and decision making of sustainability issues

Climate resilience has not been a major concern for stakeholders to work together on

Lack of public education on the part of entrepreneurs, especially small and medium enterprises

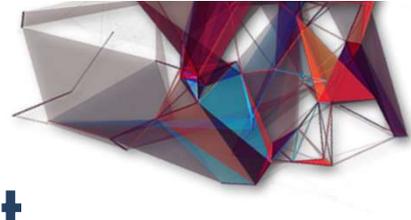
Environmental policies are still arbitrary, such as reforestation program

## Opportunities

**As the provincial capital and education center, Samarinda has the potential to optimize knowledge sharing,** to generate more active participation from civil society and private sectors.

**Several civil society organizations are collaborating with different departments in Samarinda City** such as the Samarinda Organic Farmers Association (APOS), Movement of Picking Up Trash in Karang Mumus area (GMSSKM).

**Collaborative urban governance with civil society** can be an important catalyst for improvement and provide opportunities to achieve more open and better decision making.



# Articulation of national policies by the local government

Presidential Regulation No. 59 of 2017 on Implementation of the Sustainable Development Goals Achievement

East Kalimantan Provincial Regulation No. 7 of 2018 on Sustainable Development

Presidential Regulation No. 61 of 2011 on National Action Plan of Greenhouse Gas Emissions Reduction

East Kalimantan Provincial Regulation No. 7 of 2019 on Climate Change Adaptation and Mitigation

Head of the National Disaster Management Agency Regulation No. 2 of 2012 on General Guidelines for Disaster Risk Assessment



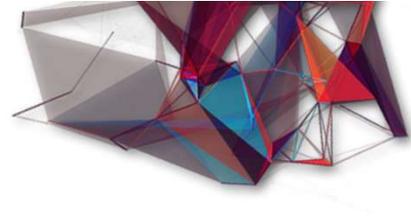
**Local Action Plan of Sustainable Development Goals Samarinda City (RAD-SDG) 2018-2021**



**Local Action Plan of Greenhouse Gas Emission Samarinda City (RAD-GRK) 2020-2030**



**Disaster Risk Assessment of Samarinda City 2019**



# Best practice and challenges of the municipality

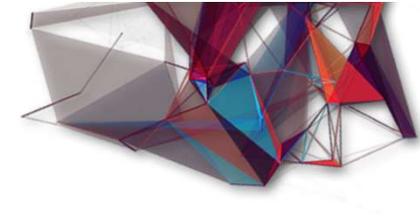
## Challenges

- Political will, commitment and participation of local leaders regarding sustainable development
- Changes in landscape and construction permits that are inconsistent with the land use plan.
- Utilization of ICT in government administration related to the environmental management such as Geographic Information System (GIS)
- Optimizing disaster prevention and waste management systems

## Best Practices

- Household waste disposal in appointed spots from 6pm to 6am
- Regulation to reduce plastic bag usage
- Making available the documents concerning environmental and sustainability study
- Revision of the local regulation on Regional Spatial Plan (RTRW).

# Recommendations



- Conduct large-scale climate awareness campaign, aiming to build active involvement of the private sector and civil society (including community groups)
- Build regional collaboration with nearby districts (kabupaten and kota) to deal collectively on watershed, pollution, forest fires, etc., which are cross-jurisdiction
- Integrate waste management and energy (circular economy)
- Ensure that the implementation of mitigation activities runs in line with the emission reduction target.
- Encourage the use of technology & smart city principles