

**CRIC**

*(Climate Resilient and Inclusive Cities)*

Urban Analysis Reports

**KUPANG CITY**

**Presentation of the findings**

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# Kupang City



## TEAM



Source: Wikipedia

### **Lead Expert :**

Dr. Muhammad Ridwansyah

*A senior economist with extensive knowledge of the Natural Resource Management in Indonesia. Associate professor at Faculty of Economics and Business at University of Jambi, University of Prasetya Mulya, and Islamic University of Syarif Hidaytullah, Jakarta and Tri Sakti University.*



### **Members :**

Dr. Franky Telupere

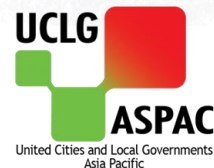
Fadwa Rhogib Asfahani

Utari Nur Qalbi

Achmad Farras Kanzil



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## *Methodology*

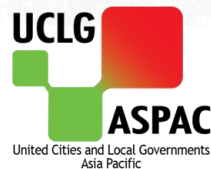
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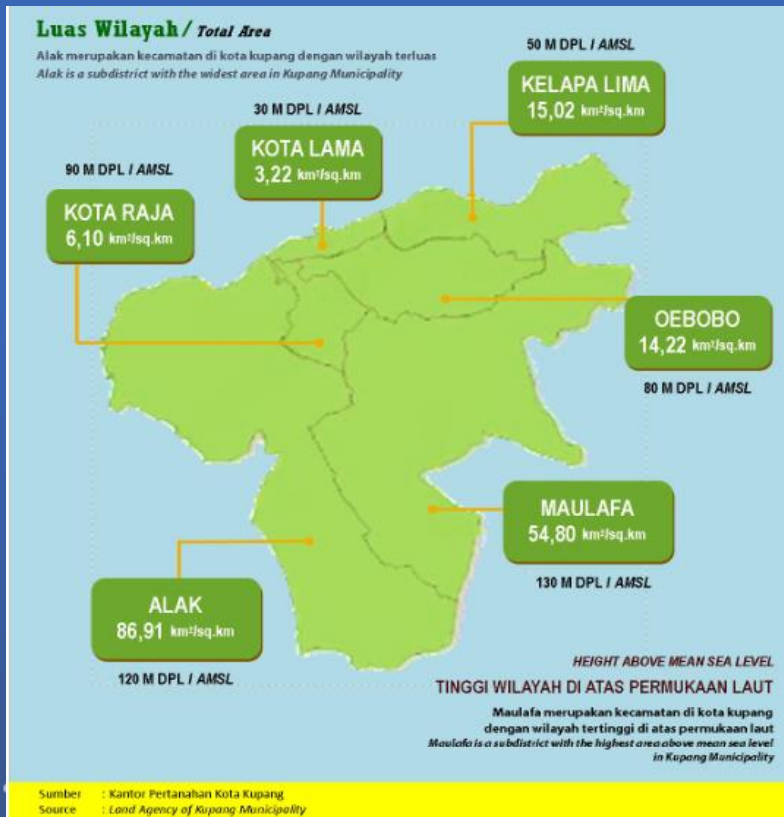


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# Kupang City Features



Kupang City is located on the island of Timor, has a strategic role, not only as the Capital City of Nusa Tenggara Timur Province but also as an important role for Indonesia's geopolitics as close to the Country Timor Leste

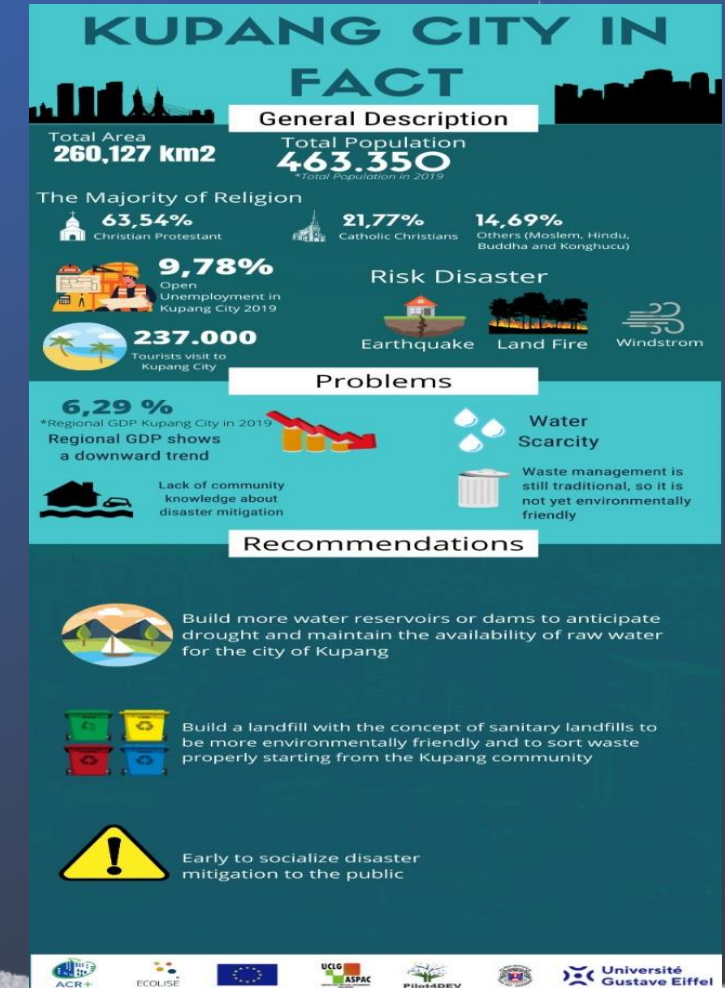


The average temperature in Kupang City ranges from 23.8 ° C to 31.6 ° C. Dry season is longer and causes problems such as fires and shortage of clean water

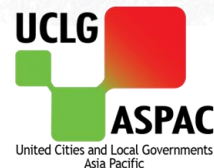


The ratio of land and water area of Kupang City is 5:2. This ratio indicates that the City of Kupang has a large enough coastal area, and vulnerables to disasters due to climate change.

## Summary of the report



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## General Remarks and Recommendation for Local Action Plan

“

Kupang City is one of the cities in Indonesia that is vulnerable to disasters due to climate change such as drought, rising sea levels, and windstorm. Climate disasters will have a direct impact on ecosystems, property, and infrastructure, which will affect people's lives, health, and safety. What is particularly worrying is that climate change intersects with other significant trends, urbanization, and together they create additional risks and vulnerabilities for many people.

”

### Recommendation Concerning Regulation

1. Issue regulations (mayoral decisions) to regulate the establishment of vulnerable Areas in Kupang City.
2. Regulations about the need for climate data and the sources of data must be settled.
3. It requires a regulation for micro spatial planning to rehabilitate and protect a water catchment area in Kupang City.
4. Establish standard operating procedures for disaster management.

### Recommendation Concerning Capacity Building

1. Strengthen groups of community members so that they may help disseminate ideas about climate change adaptation.
2. Build the capacity of city officials with regard to climate change adaptation.
3. Maximize BMKG roles to inform the community about information relating to climate. This can be coordinated with local BPBD to help make people aware of potential future hazards.
4. Give training to the community about alternative economic options so that they are more prepared when climate change hazards impact their livelihoods.

### Recommendation Concerning Programmatic for Local Action Plan

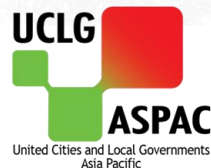
1. The government needs to review its infrastructure systems and building codes.
2. There is a need for more projects empowering coastal communities.
3. There is a need to establish hospitals in all of sub-districts as an effort to anticipate and reduce the impact of climate crises.
4. Utilization of water resources. Potential projects related to improving the use of water in Kupang.
5. There needs to be a strategy regarding the protection of the most vulnerable groups.



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# Climate Mitigation and Adaptation

## Key Problems

1. **Uncertain Climate**, dry season relatively longer than the rain season in one year.
2. **Climate change vulnerability** is in the form of high and medium occurred in 32 of 51 villages or kelurahan (areas)

## Development Activities

### Mitigation actions

Air quality and vehicle pollution monitoring

Distribution of efficient biomass cook-stoves (around 1500 cook-stoves)

Replacing public street lighting with on-grid metered public street lighting

Waste management through waste bank and recycling

Expanding open green spaces (Ruang Terbuka Hijau, RTH)

### Adaptation actions

Waste management at the household level, recycling, composting

Urban farming program at household level

Flood control infrastructure, land-slides

Mangrove rehabilitation and conservation

Water catchment area conservation and rehabilitation

Ground water utilization control through monitoring and permit issuance

Clean water distribution in dry season

Fire prevention

Local economy empowerment

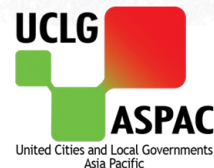
Coastal economy empowerment

Disaster area mapping and fire contingency plan

Poor people empowerment programme



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# Disaster Risk Reduction

## Key Problems



The threat of disasters due to climate change such as floods, high wind, droughts, and fires.



Lower involvement of community level in Disaster Reduction and Recovery (DRR).



## Priority



Technical Assistance activity, the Mainstreaming Disaster Reduction and Recovery (DRR) in Kupang City Government Program



Considering Kupang's geography, the program looks at the community's resilience



*Coastal Area prone to climate change*



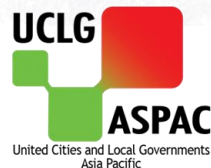
*Portrait of Fisherman's Poverty in Kupang Bay*



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## Pollution

AQI of Kupang City in 2018 is 92,03 that classified as a medium category in which, air quality level has no effect to human and animal, but has effect to sensitive plants and aesthetic values.

## Waste Management

Kupang City has implemented the solid waste management from upstream to downstream, namely: waste segregation, waste deposit system (TPS), transportation, composting activities.

## Informal Settlements



Government needs plans to build residential area for low-income people and immigrant

### Key Problems

- ✕ Sources of GHG emission in Kupang City, energy consumption (including transportation and electricity); and
- ✕ Kupang's domestic waste reaches 382 m3/day, of which only 268 m3 can be transferred to landfill
- ✕ Lack of public awareness of waste disposal
- ✕ Kupang City does not have adequate Incinerator equipment, and only one estate in the Borromeus Hospital, its capacity is not sufficient.
- ✕ There is no waste recycling tool / program and it still uses the open landfill system.
- ✕ Waste transportation fleet that is still lacking
- ✕ High rate of urbanization/migration led to growing informal Settlements



## Participation of Civil Society and Governance



There are NGOs engaged in the environmental activities, such as forest and water catchment conservation



The Government has issued a *Green Kupang Movement* who invites public to plant trees and controlling waste



Public participation to formulate regulation concerning climate change mitigation and adaption is low

## Challenges in Terms of Land Use



The spatial planning is outdated and need a further revision





Many settlements in coastal areas are prone to strong winds



Many buildings are not in accordance with the building construction permit, lead to congestion and lack of water catchment areas







## *Articulation with National Policies*

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-  The government and academicians have discussed a housing design, not only for wind resistant but also earthquake resistant, which will later become a flagship program.
-  National government in cooperation with local government plan to build Reservoirs in order to increase water supply of Kupang City

## *Best Practice and Challenges of Municipality*

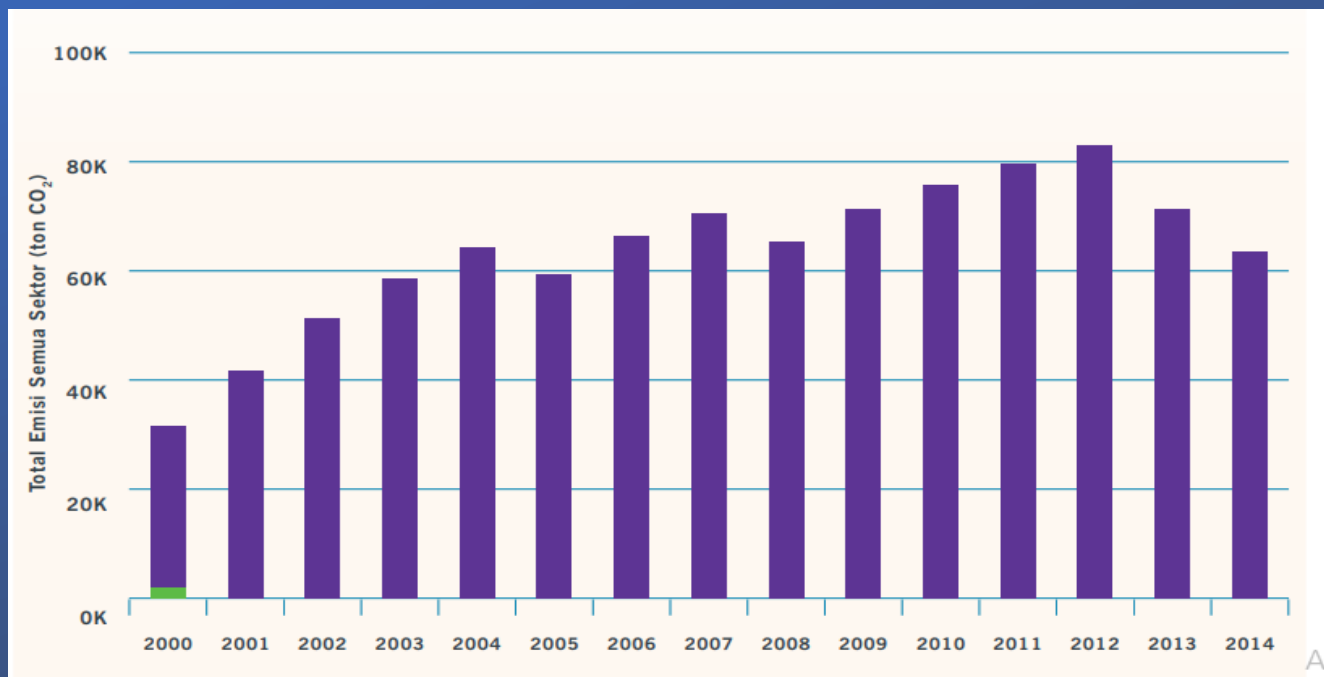
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-  Recently, a waste bank was established in Kupang City to solve the waste problem in Kupang City.
  -  Improvement in the drainage system lead to almost no more flooding.
  -  Kupang City is highly tolerant for inmigrasion, this is the main modalities of Kupang City
-  There is still an imbalance between the volume of waste and the transportation fleet.
  -  Kupang need to build a big reservoir or dam.
  -  Government needs to build residential area for low-income people and immigrant



## GHG Mapping




### Kupang's greenhouse gas emissions from waste



Source: Torry, Kuswardono, and Tumiwa, 2016

## Conclusion

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-  *Kupang City is one of the cities in Indonesia that is vulnerable to disasters due to climate change such as drought, rising sea levels, and windstorm.*
-  *The disasters caused by climate change will not only affect environment but also the livelihood and economy of Kupang City.*
-  *The government needs to review their regulation concerning climate change and intensify the public participation to resolve climate change problems.*

*Thank You*

