

CLIMATE RESILIENT AND INCLUSIVE CITIES PROJECT

Triangular cooperation between Europe | South Asia | Southeast Asia

POLICY RECOMMENDATIONS

Topic 1: Sustainable Urban Development

- Strengthen climate-dependent measures for the city to adapt to disaster risks, including droughts.
- Strengthen Green spaces/RTH reforestation, adaptive buildings, water catchment areas.
- Maintain marine ecosystems.

Topic 2: Circular Economy and waste

- Develop a joint program with NGOs the population and businesses on waste management to avoid open dumping of waste.
- Strengthen 3Rs programs and waste banks.
- Work further with the industry to curb illegal logging.
- Work with coastal communities to further reinforce coastal areas.

Topic 3: Early Warning system

- Develop contingency plans for droughts, floods, earthquakes.
- Develop smart technologies to counter the disasters' impacts (flooding, landslides).

Topic 4: Water and Sanitation

- Find technology solutions to increase the coverage of access to piped clean water.
- Develop cooperation to ease investment in infrastructure.
- Repair the pipe water system as leakage seems very high.

Policy Brief based on the Urban Analysis Report for the city of Gorontalo

Coordinated by: [PILOT4DEV](#)

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Key Features

- Located in the Maluku region, Gorontalo is an important growing urban area, and a transportation hub, while marine and fisheries remain important sectors.
- The city is prone to disasters such as earthquakes, floods, droughts and extreme weather events (storms), and is categorized as medium risk (on the disaster index).
- Investment is needed to strengthen the access to clean water (68,03%)
- The city has exemplary initiatives in the reduction of plastic waste which could be replicated.

Key Numbers

- Population: 219.399 inhabitants (2019)
- Surface: 60.07 km² divided into 9 districts and 50 sub-district areas
- Density: 3.386 inhabitants per km². This density varies in several districts
- Population growth in the last 25 years: 67.93%
- Unemployment rate: 6.3% in 2019
- Poverty rate: 5.45 % in 2019 (lower than in other pilot cities)
- Gorontalo is 70% on wetland and 30% on dry land
- Waste collected (2016): 134 t/day collected; no data about generated waste

Key numbers on the environment:

- Air Quality Index: 46 on air-quality.com
- Access to clean water: 68.03%
- 94.69% of houses in Gorontalo already have access to sanitation. However, using a different indicator (access of households to proper sanitation), 22.84% of households still do not have access to proper sanitation
- 68,3% of the community could have an improved access to waste management
- 74,8% of roads are in good condition
- Waste generated: 133,95 tons/day



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Further analysis

The Urban Analysis Report identifies several key problems, challenges, and Opportunities in priority sectors:

1. Based on the sanitation white book (UAR), 75% of water resources in Gorontalo are at risks of being polluted.
2. 94.69% of houses in Gorontalo already have access to sanitation — which has already surpassed the MDGs target. However, using a different indicator (access of households to proper sanitation), 22.84% of households still do not have access to proper sanitation. 80% of the households use a decentralized system (simple system of septic tank), while 20% rely on communal sanitation (many septic tanks are unsafe, and the wastewater pile leakage is 58%).
3. The city has the potential to attract and to develop tourism.
4. The Air Quality in Gorontalo is reasonably good (46 on air-quality.com), although the impacts on health are not to be excluded. There have been initiatives implemented, such as the blue-sky program.
5. The urbanization of the city is leading to pressure on agricultural land, which is further threatened by droughts and floods. Upstream deforestation is a possible issue.
6. Gorontalo's risk disaster index (69,23) is considered as medium and includes forest and land fires (high risks), earthquakes, floods, droughts and extreme weather (medium). The different districts are exposed differently to each disaster category (flood, landslides, dry of the Limboto lake and further eutrophication due to drought).
7. The RPJMD include the provision of housing, disaster risk mitigation, integrated drainage for flood control, 3R management and further development of waste banks, as well as the fulfilment of green open space to cover 30% of the city.
8. There is potential in developing green spaces and pedestrian areas. The open dumping of waste remains a problem and is leading to water pollution. Illegal logging in the upstream area is responsible for floods.
9. There are existing initiatives and strong potential in the multi-stakeholders' dialogue.



Policy recommendations

Recommendations on Air Quality - [Pilot4DEV](#)

1. Map the impacts of the industry and mining on the air quality by installing AQMS stations in industrial areas.
2. Map the pollutants (SO₂, NO₂, O₃, HC, CO) and the monitoring of Particle matters PM 2,5 and PM 10.
3. Create a health monitoring system and preventive solutions for the vulnerable population.
4. Further develop vehicles emission tests as a future green investment opportunity.
5. Invest in mass transit transportation and green lanes (for bikes, sidewalks for pedestrians).
6. Develop an Awareness Raising program with the population.
7. Develop policies to ban the stubble burning practices carried out by plantation owners.
8. Invest in Green plantations able to absorb pollutants and work jointly with the land planners.

Recommendations on Waste Management - [ACR+](#)

1. Raise the awareness and implement education activities in communities about waste management are crucial, engaging the whole stakeholder ecosystem with special efforts to be given towards reaching women.
2. Prioritize the management of the organic fraction, implementing source-separated collection schemes and valorising the treatment output (e.g. compost, digestate, biogas). Local markets and commercial areas should be put in the focus.
3. Implement source separated collection schemes for recyclables (e.g. packaging), taking into consideration the role of the informal sector.
4. Spreading of the waste collection services, especially focusing on districts with the lack of coverage. Number of the waste picking vehicles should be increased, and their timing and frequency should be adjusted to the daily life dynamic of the residents.
5. Local regulation on waste production, both for households and business activities, revise the local taxation on waste management, introducing incentives and rewarding schemes for waste prevention and source separation. Explore possibilities for introducing PES (Payment for Ecosystem Services) in the field of waste management.
6. Implement the life cycle thinking in waste management by going beyond the weight-centred approach. This may help to address the priority sectors assessing different impact categories (GHG emissions, land use, water consumption, etc.) and designing specific actions focused on waste prevention and reuse.

Policy recommendations

Recommendations on Governance and Links with Civil Society - [ECOLISE](#)

Continue the work towards more healthy livelihoods, by implementing and strengthening bottom-up approaches (such as the [Musrenbang](#)) and connect these with the local authorities, putting in place a clear and efficient channel of communication between the two. Suggestions and examples of methodologies to achieve this by:

1. Trusting your people and their creative power to solve simple issues and to self-organize in order to co-create with the local authorities.
2. Identifying the local natural leaders of the community (citizens, associations, ...) and assisting them in mobilizing citizens participation in the communitarian planning sessions, paying attention to the importance of diversity (ethnic, ideology, religious, age, gender, disabled).
3. Building trust among neighbours and building their capacity to engage actively in the development planning of their neighbourhood by sharing and helping implement organizational and decision making tools such as [Sociocracy 3.0](#) and [Open Space Technology](#) (Community and Village empowerment).
4. Invite and hire external facilitators to guide these community meetings, especially in the first years. Once the culture of meeting collaboratively is in place, the community will take the facilitation in its hands, not requiring the external input.
5. Consider the support and implementation of regular [Citizen's Assemblies](#) (3-6 per year).
6. Include children in the planning process partnering with schools, conducting regular gatherings (3-6 per year for example) to discuss their needs and desires for their villages/city. Example of [Children's Parliament](#) in India using Sociocracy.
7. Consider the support and creation of regular inquiry and reflection gatherings for women only in order to create a safe space for them to speak freely.
8. Create in the municipality the role of a "Civil servant of the citizens" - Someone whose sole function would be to interact regularly with the citizens, attend and support these meetings and communicate developments to the local government.
9. Identify and invite local NGO's to work regularly with your municipality (eg. Sahabat Pulau Gorontalo, Forum Komunitas Hijau, Forum Pengurangan Risiko Bencana Provinsi Gorontalo, Pusat Vulkanologi dan Mitigasi Bencana) using the [Municipalities in Transition system](#) aimed at bringing systemic thinking and a better collaboration between the two for a sustainable development.
10. In your community involvement for green open space development include the organization of celebration and leisure activities. Designate these public spaces outdoor and others indoor for the formal meeting.
11. Establish good communication channels with neighbouring municipalities and territories, so that there are a general overview and understanding of common issues, cooperation in the prevention of disasters and facilitate the replication of good practices. Create or strengthen Intermunicipal Forums or networks that meet bimonthly. [Ecoregions](#) is a good example of a model that tackles local culture, ecology and economic issues around agroecology.

Tool specific proposals

It is proposed to work jointly with the partners to improve **water and sanitation** as well as to **strengthen the involvement of stakeholders** (ECOLISE), waste management and the reduction of the use of plastics (ACR+), disaster risks and early warnings, smart technologies, drought disaster management plan (UGE), the protection of coastal areas and sustainable urban development (Pilot4dev), as well as on the funding opportunities (AIIISG).

Areas for further research, indicators and expertise needed

- Information on early warnings could benefit from further details and an in depth discussion with the city.
- Further data could also be collected on the environment (water, air...). Some information on the environment remains contradictory in the current UAR.
- The CRIC partnership could develop expertise on urban design adaptive to climate change and especially strong floods and droughts.
- The city has a strong potential in green energy.
- The impact of mining on air and soil pollution could lead to further studies and research.

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