

Transportation Toward Sustainable Resilience City: Knowledge-Sharing on Kendari City's Urban Mobility Experience at the Uclg Aspac Forum

Susanti Djalante^{1*}, Tryantini Sundi Putri², Nini Hasriyani³, Ranno Marlany⁴, Adris Ade Putra⁵, Ridwan Syah Nuhun⁶, Januar Saleh Kaimuddin⁷

Lecturer in Transportation and Sustainability, Department of Civil Engineering, [Halu Oleo University], Southeast Sulawesi, Indonesia

Corresponding Author: Susanti Djalante: susantidjalante@uho.ac.id

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ABSTRAK

Rapid urbanization in Indonesian cities has intensified pressure on urban mobility, marked by congestion, weak intermodal integration, environmental stress, and vulnerability to disruption. As a transportation and sustainability researcher, the author was invited to share Kendari City transportation resilience experience at the UCLG ASPAC forum, Navigating Urban Uncertainty and Strengthening Resilience for Cities in Asia Pacific, held on 5 May 2026, through an oral presentation and case-based discussion framed around five resilience principles: connectivity, redundancy, robustness, rapidity, and adaptability. Field observation of Kendari initiatives revealed persistent coordination gaps among implementing stakeholders, while forum discussion reaffirmed that technology adoption and financial readiness remain the most decisive factors for advancing transportation sustainability in Asia-Pacific cities.

INTRODUCTION

Cities across the Asia-Pacific region is facing the growing of urban uncertainty driven by rapid population growth, climate change, and fast-moving economic dynamics. Within this context, the transportation system has played important roles as a strategic position, not only as the everyday driver of economic and social activity, but also as one of the main determinants of a city's ability to withstand disruption, whether recurrent, such as chronic congestion, or sudden, such as natural disasters and extreme weather. A resilient transportation system, following on UN-Habitat's City Resilience Profiling Tool (2018) and UNDRR's Disaster Resilience Scorecard for Cities (2017), a resilient city is one that preserves important urban functions while being able to foresee risks, withstand and adapt to pressures and stresses, and recover efficiently from disturbances. In Indonesia, Rapid urbanization has influenced mobility requirements that exceed the capabilities of current infrastructure in numerous cities, leading to congestion, inadequate intermodal integration, increased emissions, and transport systems that are susceptible to flooding and other climate-induced disturbances (World Bank, 2024). United Cities and Local Governments Asia-Pacific (UCLG ASPAC), the regional knowledge management hub for local government issues based in Jakarta, provides a platform for member cities to exchange practical experience and build capacity in addressing these shared challenges (UCLG ASPAC, 2026).

As a form of community service and knowledge dissemination, the author was invited as a speaker at the UCLG ASPAC forum "Navigating Urban Uncertainty and Strengthening Resilience for Cities in Asia Pacific" held on 5 May 2026, to present the experience of Kendari City, Southeast Sulawesi, in developing a transportation system that supports the implementation urban resilience. The contribution of this service activity lies in translating Kendari's practical, on-the-ground initiatives, ranging from road network development to public transport reform, into a transferable case study framed around five recognized resilience principles: connectivity, redundancy, robustness, rapidity, and adaptability. This paper documents the objective, implementation method, and outcome of that knowledge-sharing activity, and is intended to serve as a reference for other local governments in the region facing similar urban mobility challenges.

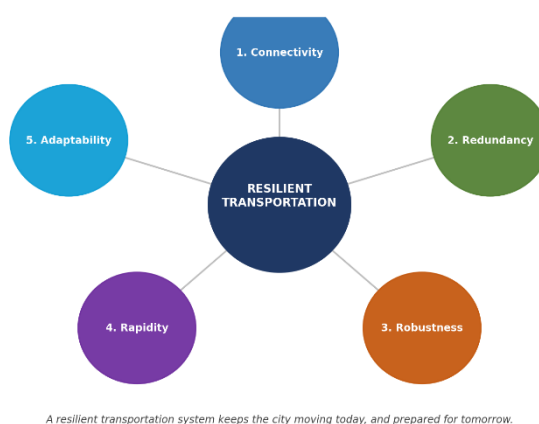
IMPLEMENTATION AND METHODS

This knowledge-sharing service activity was carried out on 5 May 2026, as part of the UCLG ASPAC forum "Navigating Urban Uncertainty and Strengthening Resilience for Cities in Asia Pacific." The forum brought together local government officials, urban planners, and technical staff from UCLG ASPAC member cities across the Asia-Pacific region, along with representatives of the Kendari City Government as the presenting party. The session was attended by participants representing local governments, students and lecturer, and government stakeholders related on southeast Sulawesi.

The service method used was an oral presentation combined with a case-based discussion. The material was structured around three parts: (1) an overview of Indonesia's urban mobility challenges, (2) a conceptual explanation

of how transportation contributes to a sustainable and resilient city, and (3) a detailed case study of transportation initiatives implemented in Kendari City. The conceptual explanation applied five resilience principles adapted from established urban resilience literature (Arup & The Rockefeller Foundation, 2015): connectivity, redundancy, robustness, rapidity, and adaptability, as illustrated in the conceptual framework in Picture 1. Each principle was then paired with a concrete example from Kendari, allowing participants to see how an abstract resilience framework translates into practical infrastructure and policy action. The session closed with an interactive question-and-answer discussion to allow participants to relate the Kendari experience to conditions in their own cities.

Picture 1. Conceptual Framework of Transportation Resilience Principles



RESULTS AND DISCUSSION

The presentation opened by outlining five interrelated challenges commonly faced by Indonesian cities, namely rapid urbanization, congestion, weak intermodal integration, environmental pressure, and system vulnerability to climate-related disruption. These challenges were framed as a self-reinforcing "urban mobility pressure cycle" to help participants recognize how the issues compound one another rather than occurring in isolation.

The core of the session presented Kendari City as a practical case of applying the five resilience principles described in Picture 1. Table 1 summarizes the main transportation initiatives implemented in Kendari and the resilience aspect each one addresses.

Table 1. Kendari City Transportation Resilience Initiatives

No.	Initiative	Resilience Principle Addressed	Key Impact
1	Inner Ring Road	Connectivity & Redundancy	Additional circular route linking key districts; alternative paths reduce disruption risk and shorten travel time.
2	Kendari Bay Bridge	Connectivity, Redundancy & Integration	Links West and East Kendari and the port area; provides an alternative route and boosts logistics and trade.
3	Kadia River Area Infrastructure Upgrade	Robustness	Stronger pavement and wider, safer pedestrian facilities; more durable roads and a more walkable city.

4	MTQ Monument Traffic Management	Rapidity & Efficient Management	One-way system, ETLE enforcement, and CCTV monitoring; shorter queues, faster incident response, safer roads.
5	Translulo Kendari (Mass Public Transport)	Adaptability & Redundancy	12 routes across 4 corridors integrating buses and feeders; wider access and more resilient daily mobility.

Discussion with forum participants confirmed that the five initiatives function most effectively when applied together rather than individually. The Inner Ring Road and the Kendari Bay Bridge illustrate how new links simultaneously improve day-to-day connectivity between areas of Abeli district and Kendari old city and create redundancy for the network as a whole, since either route can absorb traffic if the other is disrupted. The infrastructure upgrade along the Kadia River shows that robustness is achieved not only through stronger flexible pavement but also through improving pedestrian facilities by strengthen the floor, installed lightening, strengthen various decorative elements for advertising, and add several plans and trees. All the points are the aspect to improve resilient infrastructure not only for all users but also for motorized vehicles. The MTQ Monument traffic management has demonstrated that rapidity of response, through real-time monitoring and electronic enforcement, can be achieved with moderate investment when paired with clear operating procedures. Finally, Translulo Kendari illustrates adaptability, as its route and corridor structure can be adjusted over time to match the city's growth, while simultaneously acting as an additional resilience layer by giving residents alternative ways to reach their destinations.

Picture 2. Explanation about Transportation toward Sustainable Resilience city



Several participating city representatives noted that Kendari's approach was replicable because it combined relatively modest, incremental infrastructure

investments with clear institutional coordination between the transportation agency, port authority, and traffic police. This finding reinforces the broader argument in the urban resilience literature that resilience is built cumulatively through many complementary, moderate-scale interventions rather than through a single large investment (Arup & The Rockefeller Foundation, 2015).

It is worth noting, from the author's direct observation of these initiatives, that the main technical challenge in the field was rarely the engineering work itself, but rather coordination among the stakeholders involved. The Inner Ring Road and Kendari Bay Bridge, for instance, required continuous alignment between the transportation agency, the port authority, and construction contractors, and at several points implementation programs overlapped in schedule and in the roads or corridors affected, which slowed progress and required repeated re-negotiation of work sequences. This observation suggests that resilience frameworks, while conceptually clear, still depend heavily on the institutional capacity to coordinate across agencies with different mandates and timelines, a dimension that is easy to underestimate when resilience is discussed only at the level of infrastructure design.

Picture 3. Participations and Speakers



During the question-and-answer session, one participant asked how a transportation system's sustainability could be improved beyond the resilience principles already discussed. In response, the author argued that among the various dimensions of sustainability, technology adoption and financial readiness are the two most decisive factors. Smart traffic management, real-time monitoring, and electronic enforcement, as demonstrated at the MTQ Monument area, only deliver lasting benefit if a city has the financial capacity to operate and maintain them over time; without adequate and consistent funding, even well-designed technological systems tend to degrade quickly. This view reflects the author's broader academic position that sustainable transportation planning cannot be separated from financial planning, and that many cities underestimate

the long-term operating cost of the very technologies meant to make their systems more sustainable.

Picture 3. the question-and-answer session



CONCLUSIONS AND RECOMMENDATIONS

This knowledge-sharing service activity demonstrated that Kendari City's transportation initiatives, the Inner Ring Road, the Kendari Bay Bridge, the Kadia River infrastructure upgrade, the MTQ Monument traffic management system, and the Translulo mass transit service, collectively illustrate how the five resilience principles of connectivity, redundancy, robustness, rapidity, and adaptability can be translated into practical, moderate-scale infrastructure and policy actions. Presenting this experience at the UCLG ASPAC forum allowed the author to share a transferable model for building resilient urban transport systems with fellow local governments across the Asia-Pacific region, fulfilling the forum's aim of navigating urban uncertainty through peer learning.

Based on this experience, three recommendations are offered for other cities seeking to strengthen the resilience of their transportation systems. First, cities should prioritize incremental, complementary infrastructure investments, such as ring roads and river-crossing bridges, that simultaneously improve daily connectivity and provide redundant routes during disruptions, rather than relying on a single large-scale project. Second, smart traffic management tools, including electronic law enforcement and real-time monitoring, should be adopted early, since they deliver measurable safety and efficiency gains at relatively low cost. Third, local governments are encouraged to invest in integrated public transport networks, such as Translulo, that can be expanded and adjusted over time to keep pace with urban growth, thereby building long-term adaptability into the transportation system. Continued participation in regional knowledge-sharing platforms such as UCLG ASPAC is recommended to sustain this exchange of practical lessons among Asia-Pacific cities.

Finally, in the author's assessment as a transportation and sustainability researcher, two additional factors deserve explicit attention alongside the five resilience principles: technology adoption and financial readiness. Kendari's experience shows that technological interventions succeed only when paired with realistic, sustained financing, and that stakeholder coordination, more than engineering complexity, is often the binding constraint on implementation speed. Local governments planning similar initiatives are therefore advised to assess their institutional coordination mechanisms and long-term financial capacity before committing to technology-heavy solutions, so that resilience investments remain sustainable well beyond the initial construction phase.

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