Climate Resilience and Sustainable Urban Development in Pacific Developing Member Countries

Urbanization\(^1\) in Pacific Developing Member Countries (DMCs)

Cities are primary contributors to economic development, as well as the centers of major political and social changes in a country.

Urban areas are continuing to expand their areas of jurisdiction to accommodate growing populations due to natural increase and rural-to-urban migration. For 2010, 45% of the total population of Pacific developing member countries (DMCs)\(^2\) is projected to be in urban areas. By 2020, this figure is projected to increase to 48%. In addition, the projected average urban growth rate of 2.1% in 2010–2015 is much higher than the Pacific DMCs' average population growth rate of 1.2% (mid-2010 estimates). While some Pacific DMCs show decreasing urban growth rates, overall, the rate of change of the urban population is seen as gradually increasing to 2.3% from 2015 to 2020. This trend is most noticeable for Kiribati, the Federated States of Micronesia, Papua New Guinea, Samoa, and Tonga.\(^3\)

Expansion areas include peri-urban areas, reclaimed lands, converted agricultural lands, and environmentally critical areas. These areas are usually either underserviced or on degraded lands because of the lack of or inadequate urban planning, and contribute to urban sprawl and ad hoc development.

The rapid pace of urbanization in some Pacific DMCs has raised serious concerns, given their limited resources and capacities and already overstressed natural resource systems. If left unattended, urbanization issues—such as problems in food supply, water and sanitation, waste disposal, and infrastructure—can pose environmental, social, and economic difficulties to both migrants and host/receiving urban communities. Governments also experience severe budget constraints due to the added costs for education, housing, health care, and administration of rapidly growing urban populations.

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1 Refers to the population living in areas classified as urban according to the administrative criteria used by each country or area, as a percentage of the total population (World Population Prospects: The 2008 Revision Population Database).
3 The statistical information indicated in the paragraph came from the Statistics and Demography, Statistics for Development Programmes; and World Urbanization Prospects: The 2009 Revision.
Urbanization and Climate Change

Small island countries like the Pacific DMCs are among those considered most vulnerable to climate change because of their small size and remoteness, fragile biodiversity, widespread exposure to natural hazards, low elevations, and populations that are mostly in coastal areas. Rising sea level, increase in surface air temperature, changes in rainfall leading to more intense floods or droughts and spread of vector- and waterborne diseases, and more intense and more frequent cyclones are expected climate change scenarios. Urbanization issues will be further exacerbated under such conditions.

Coastal urban areas will be increasingly at risk from sea level rise and stronger storms. Towns adjacent to freshwater flows or mouths of rivers will face increased flooding and saline intrusion into vital freshwaters. Modification of coastlines for human habitation and extensive foreshore developments make coastal urban communities more exposed to the sea and vulnerable to coastal erosion. Seawalls are effective under normal conditions but are not designed to withstand cyclone-force waves, which also worsen coastal erosion under extreme conditions.

Employment opportunities and livelihoods of the urban populations can be greatly affected, contributing to increasing poverty in urban areas and poor communities, which are most vulnerable to loss from natural disasters—especially those made worse by climate change. These communities are least able to adapt to, and will suffer more as a result of, climate change. They face lack of health care and other services, crowded living conditions, poor water supply, and inadequate sanitation; they are most likely to be affected by the further spread of vector- and waterborne diseases.

The preparedness and adaptability of urban areas to the effects of climate change are inadequate. Weak institutional arrangements for urban development lead to uncoordinated urban planning and management and contribute to the way cities and urban areas fail to respond to climate change. The seriousness of the issue is aggravated by the absence or lack of urban planning legislation, as well as of urban planning and management capacities.

Natural disasters inflict considerable economic losses to the Pacific countries. In Samoa, the 12 cyclones that resulted in natural disasters from 1950 to 2004 caused, on average in the years that they struck, economic losses of up to 45.6% of gross domestic product (GDP). In Kiribati, the costs of climate change-related risks on coastal zone and water resources have been estimated to be 35% of GDP.

Among the Pacific DMCs, Nauru, which is 100% urban, is classified as extremely vulnerable, indicating a high risk of damage from future environmental conditions. Causes of vulnerability identified for the island country include isolation, population growth, potential changes in dry and wet periods, and problems with waste treatment and sanitation.

Challenges and Opportunities

Pacific DMCs face extreme challenges in dealing with and managing the effects of urbanization, as well as those of climate change. Good urban governance is crucial for sustainable urban development and in creating climate resilience of urban areas. Most Pacific DMCs recognize that good urban governance—coupled with strong national coordination and institutional support systems, as well as extensive participation of the local population—is needed. Local initiatives in managing the urban environment, however, need to be strengthened.

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7 The United Nations Human Settlements Programme (UN-HABITAT) defines good urban governance as the exercise of political, economic, social, and administrative authority in the management of an urban entity. It is the sum of the many ways individuals and institutions, public and private, plan and manage the common affairs of the city. It is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action can be taken. It includes formal institutions, as well as informal arrangements and the social capital of citizens.
Urbanization issues are recognized in most Pacific DMC national development plans, strategies, and frameworks. These can be effective entry points for government actions, as well as support from donors and development partners. The private sector, as well as community-based and nongovernment organizations, will also have to be engaged in the implementation of policies, programs, and projects.

In some Pacific DMCs, government institutions, such as the Planning and Urban Management Agency of Samoa, and the urban councils in Kiribati, handle urban management and governance to respond to country-specific urbanization issues. In Vanuatu, the municipal councils and provincial councils are not directly involved in urban management although they can be tapped to address urbanization issues on a sector basis. Capacity building on urban planning and management also needs to be addressed.

Policies on urban planning and development exist in various legislations and regulatory frameworks though most of them are dealt within a sector approach. These policies need to be revisited and assessed as to their applicability to sustainable urban development under conditions of climate change.

Incorporating climate change adaptation measures into urban plans and disaster risk management plans will help increase the resilience of the urban population and will help reduce their vulnerability to the impacts of climate change. Urban plans, as well as disaster management plans, can include escape routes to higher areas for residents along coastal towns experiencing increased flooding and frequent storm surges. Properly designed urban plans consider climate change impacts in new growth areas. These include provision of rainwater catchment tanks to ensure availability of freshwater supply during drought periods and sea level rise that causes water salinity, and climate-proofed central waste treatment facilities to address the issues of waste management and sanitation. These approaches, however, should be based on local customs and practices, combined with scientific and technological mechanisms, to ensure their suitability to the population.

There is considerable support from donors and development partners to address the issues of and building resilience and adapting to climate change. The challenge is refocusing support in urban areas where vulnerability is greatest.

The Asian Development Bank (ADB) supports an integrated approach to urban development, as well as investments, for better urban governance, gender equality, private sector participation, and capacity building to achieve poverty reduction and sustainable development in urban areas.

Way Forward
Some ways to achieve climate-resilient, sustained urban development in Pacific DMCs are:

- Focusing on climate change as it affects urban issues, where countries are at their greatest vulnerability, to build greater response capacity.
- Country partnership strategies that impact/focus on the urban sector, such as by
  - enhancing the environment for private sector development and public–private partnerships, especially to ensure the provision of reliable and affordable, basic social services and to promote job creation and economic growth;
  - improving the delivery of sustainable and affordable infrastructure services that are efficient and reliable;
  - improving the delivery of supporting public sector management; and
  - adapting to climate change by climate proofing all infrastructure investments.

In association with the Country Partnership Strategy, there is also a need to assess infrastructure in terms of (i) vulnerability aspects in the urban environment; (ii) vulnerability in the face of climate change, especially in expanding urban areas; and (iii) adaptive actions to mitigate risks; and assess and analyze (a) identified key climate resilience issues; (b) desired actions for problems arising from rapid urbanization in the face of climate change threats, and prioritize actions according to immediate requirements; (c) alternative solutions for climate adaptation through sustainable urban development; and (d) local initiatives that demonstrate success in managing the urban environment.
Examples of approved urban-related ADB technical assistance (TA) projects

- **TA-7631 TON: Integrated Urban Development Sector Project Phase I** will contribute to economic growth and poverty reduction through improved environmental quality and public health in Nuku’alofa. It will (i) reduce flooding and flooding on roads and on residential plots, (ii) improve road conditions and increase road safety, and (iii) improve environmental safeguards with respect to groundwater. All TA activities were completed by 30 June 2011.
  Fund Source/Amount: ADB Technical Assistance Special Fund—US$350,000

- **TA-7301 SAM: Water Supply, Sanitation and Drainage Project** will lead to improved delivery of water supply, sanitation, and drainage services to the residents of Greater Apia. The outputs will include a Final Draft Apia Land Use Plan; a National Sanitation Master Plan; and Apia Integrated Water Supply, Sanitation and Drainage Master Plan. The TA was completed at end of July 2011.
  Fund Sources/Amount: Australian Grant—US$500,000; ADB Technical Assistance Special Fund—US$600,000

- **TA-7382 PAL: Sanitation Sector Development Project** will impact on efficiency, effectiveness, and affordability of sanitation service; will strengthen basic infrastructure that will facilitate tourism sector investments in Palau, particularly in Koror, the country’s center of tourism activity; and will improve the health and security of the resident population currently experiencing sewerage outflows. Environmental risks of the treatment works will also be mitigated through this activity. There are two components of the TA, namely, Component 1: Master Sanitation Plans for Koror and Airai, which will entail sewerage master plans for the Koror–Airai urban and peri-urban areas; and Component 2: Preparation of a Priority Investment Project, which is an investment project incorporating the high-priority components of the sewerage master plans, as agreed with the Government of Palau. These components are expected to be completed by 31 December 2012.
  Fund Source/Amount: ADB—US$700,000

- **TA-7345 VAN: Port Vila Urban Development Project** will work toward improved delivery of sustainable drainage and sanitation services in Port Vila and surrounding areas. The output of the TA is investment design for a high-priority storm water drainage and sanitation project for Port Vila and associated policy, regulatory, and institutional reforms. This will be in two phases: Phase I is a Situation Analysis and Spatial (Physical) Urban Sector Master Plan Preparation (with focus on drainage and sanitation); and Phase II is for the preparation of a Storm Water Drainage and Sanitation Investment Project. This TA is expected to be completed by September 2011.
  Fund Sources/Amount: ADB Technical Assistance Special Fund—US$600,000; Australian Grant—US$1,250,000

**Port Vila Urban Development Project (PVUDP)**

Between 2009 and 2015, the population of Port Vila is expected to increase from 58,000 to 73,000, with growth continuing for the foreseeable future. Historically, there has been little urban planning or development control such that the city has a legacy of poor and unsustainable infrastructure, and a visibly declining environment. Although a hilly coastal town, large parts are exposed to sea level rise and storms. Also, drainage and sanitation will be impacted by increasing rainfall and typhoons. The PVUDP supports the Government of Vanuatu to provide affordable, sustainable, and effective sanitation and storm water drainage services, and contribute to climate-resilient and sustainable urban development. It proposes strengthening the planning and regulatory processes by stipulating minimum levels for coastal development and code of practice for drainage, with the latter focusing on eliminating the widespread localized flooding which now occurs following any significant rainfall. Drainage is designed to accommodate more intense rainfall and also following the principles of Sustainable Drainage Systems (SUDS) to minimize the volume and increase the water quality of discharge to the benefit of fragile coastal ecosystems. Sanitation, health, and disease control will be improved by providing communal sanitation facilities in peri-urban areas, improving the collection and providing treatment of sludge from septic tanks, and making provision in the future for piped sewerage and tertiary wastewater treatment.