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The economic, social and environmental performance of the Cebu metropolitan area, Philippines

Situating the Metropolitan Area of Cebu

The Metropolitan Area of Cebu (Metro Cebu) is located on the central-eastern flank of Cebu Island in the centre of the Philippine archipelago. Home to over 2.8 million people in 2015, it is the most populous city after Metro Manila (13 million).

In the 1980s, Metro Cebu grew faster than comparable Filipino cities, on average at an annual rate of 4.1% before slowing down to 2.3% between 2010 and 2015, the population growth being fastest in peripheral local government units. By 2030, Cebu’s population is projected to reach 3.8 million people. The demographic structure of Metro Cebu remains young and it has benefited from significant expansion of the working age population.

Metro Cebu has experienced rapid expansion that has been characterised by three different patterns: 1) a densification of the urban core of Cebu City, and an extension towards Mandaue and Consolacion municipalities; 2) urban growth along the coast from Danao in the north to San Fernando in the South; and 3) Lapu-Lapu and Cordova cities have experienced strong growth (Figure 1.2).

By 2030, Cebu’s population is projected to reach 3.8 million people.

Figure 1.1 Locations of the Province of Cebu and Metro Cebu

The Central Visayas has achieved remarkable economic growth that is faster than the national average and stronger than Metro Manila. Between 2010-15, the Gross Regional Product (GRP) of the Central Visayas Region (CVR) averaged 8.35% annual growth (Figure 1.3). Metro Cebu is recognised as the primary economic centre of the CVR.

Cebu’s impressive economic growth has been underpinned by the rapid expansion of the manufacturing sector, consisting of industries such as furniture production, electronics and food processing. The CVR’s secondary sector grew on average by 11% yearly from 2010-14. The tertiary sector remains the mainstay of the regional economy. The sector’s GDP expanded by 7.1% per year between 2010 and 2014. It also remains by far Metro Cebu’s largest employer thanks to the burgeoning Business Process Outsourcing (BPO) companies and the tourism industry.

While Cebu has enjoyed strong economic growth, not all residents have benefited to the same extent and inequality is rising. This is mainly demonstrated by a rising GINI co-efficient (0.47 in 2012) in the CVR.

**Metro Cebu’s socio-economic structure**

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**Figure 1.3 Average annual GRP growth**

Changing land-use patterns and a growing population have severely strained local infrastructure and the provision of basic urban services, such as transportation, energy, water management and municipal solid waste (MSW). Vehicle numbers almost doubled between 2003 and 2012, contributing to traffic congestion and high air pollution levels (Figure 1.4). Also, less than half of Metro Cebu’s households have access to piped water services. The volume of MSW produced daily has rapidly increased although only 65% of the household waste is collected.

While 46.4% of energy for electricity in the Visayas is generated from geothermal plants, there is still a heavy reliance on fossil fuels (45.3%). Overall, the transportation sector is the largest energy consumer followed by the industrial sector. However, the industrial sector emits more GHG emissions than the transportation sector.

Metro Cebu is exposed to acute disaster risks. It regularly experiences severe flooding, especially during the wet season from June to November and annual tropical storms. In 2013, Cebu City experienced a magnitude 7.2 earthquake which affected 870 000 people and damaged nearly 1 000 houses, local infrastructure and community facilities.

**Figure 1.4 Total registered motor vehicles in the Province of Cebu**

Governance of Metro Cebu

Metro Cebu is comprised of 13 different local government units (LGUs): 3 Independent Cities, 4 Component Cities and 6 Municipalities (Figure 1.5). There are substantial and important differences between these three types of LGUs. For example, Metro Cebu’s “Independent Cities” do not fall under the jurisdiction of the Province of Cebu but of the national government, while Component Cities and Municipalities are under provincial authority. Independent Cities and Component Cities receive more direct fiscal transfers from the central government.

Established in 2011, The Metro Cebu Development and Coordinating Board (MCDCB) is a public-private consortium led by the Province of Cebu in addition to the 13 LGUs of Metro Cebu, several regional government agencies, and private and civil society organisations. MCDCB provides a sense of unity for the LGUs at a metropolitan scale. In partnership with its stakeholders, MCDCB acts on a metropolitan scale to promote long-term and co-ordinated planning, targeting trans-LGU issues of concern.

Opportunities for urban green growth in Cebu, Philippines

Make Cebu’s land use more efficient with integrated transport

Metro Cebu’s growth has given rise to an uncontrolled urban sprawl. This is further exacerbated by land-use plans and zoning ordinances of some LGUs being outdated and needing revision to bridge the gap between what is planned and what is built. Out of Metro Cebu’s land area of 1 163.40 km², about 15% of the land is already used for urban purposes. Considering the geographical conditions which naturally limit the availability of Metro Cebu’s developable land (25% of total land area), LGUs have to prioritise managing their land resources sustainably through a compact city model to ensure that Metro Cebu remains productive, competitive and inclusive.

Out of Metro Cebu’s land area of 1 163.40 km² about 15% of the land is already used for urban purposes

The absence of an integrated metropolitan-wide, high-capacity form of public transport threatens the long-term growth and effective functioning of the urban system in Metro Cebu. Increasing vehicle ownership and use of private vehicles is contributing to traffic congestion and pollution. Integration between the bus rapid transit system (BRT) and other modes is needed. In addition, clean transport such as rail systems, ferries, E-jeepneys and shared-bike schemes need to be encouraged and the necessary supporting infrastructure put in place.
Move towards “zero-waste” Cebu

An effective waste management system is crucial in enabling Cebu to grow sustainably. Current consumption patterns still follow a linear trend with the end point based on disposal as opposed to a circular consumption pattern where resources are continuously reused.

In addressing the land-filling challenges the metropolitan area is facing, an ambitious “zero-waste” target could be considered for all the LGUs so that the metropolitan area could demonstrate its commitment to substantially reducing the waste being sent to landfills. San Francisco has managed to divert waste to landfills by 80% in efforts to reach zero waste by the year 2020 (EPA, 2016). In Sweden, only 1% of waste goes to landfill sites.

Metro Cebu should consider an effective form of waste pricing in line with the “polluter pays” principle which makes the environmental cost of waste more visible to the consumer, thereby creating economic incentives for households and businesses to reform waste disposal. Such a measure can provide the financial resources needed for service improvement and shift the financial burden away from municipalities.

LGUs should aim to improve the conditions of their material recovery facilities (MRF). As of 2011, out of 349 barangays only 101 (29%) had operational MRFs. This is mainly due to lack of financial resources as well as inadequate capacities of barangays to plan and operate such facilities. An option is to allow for shared MRFs between several barangays. Instead of small-sized facilities, investments would need to be directed into an environmentally-friendly large scale MRF which has a higher capacity to process waste for a given number of barangays. Consolidating the MRFs produces value for money and helps introduce technological innovation and efficiency which is not viable on small scales.

The country has huge potential to catch up with its peers by increasing energy generation from waste

In OECD countries, between 2000 and 2015 the energy generation from biofuels and waste increased by 62% and accounted for 55.1% of the renewable energy supply in 2015 (IEA, 2016). Renewable municipal waste alone accounted for 2.9% of OECD renewable energy supply. In Sweden, 50% of household waste is incinerated to produce energy, with pollutants being filtered through a robust process involving dry filters and water (Freden, 2015).

Comparing the Philippines to a select number of contemporaries in Southeast Asia in terms of energy production from biofuels and waste, the country has huge potential to catch up with its peers by increasing energy generation from waste (Figure 2.1).
Promoting the circular economy in manufacturing industries

As a major manufacturing centre, Metro Cebu needs to promote clean, energy-efficient manufacturing processes. In Cebu City, industries account for about 36% of energy consumption and 38% of GHG emissions. While energy efficiency is being encouraged in the metro area, minimising pollution from SMEs and ensuring compliance with environmental regulations needs to be strengthened.

Improving energy efficiency and promoting renewable energy

Metro Cebu sources 52% of its power from renewable energy, mainly geothermal. However, a high share of power (41.3%) is also sourced from coal-powered facilities. More opportunities for renewable energy exist especially from waste-to-energy sources and rooftop solar PV energy which can be encouraged through incentives and regulations.

Greening buildings in Metro Cebu offers an opportunity for the metro area to move closer towards sustainable urbanisation. Implementing the national building code through local legislative instruments such as green building ordinances has been slow but could be expedited.
Main Policy Recommendations

• Develop a work plan to harmonise the comprehensive land-use plans of the LGUs in the metro area based on the joint spatial plan developed with JICA as part of the Roadmap for Sustainable Urban Development.

• Update LGUs’ Comprehensive Land Use plans (CLUP) and zoning ordinances to sustainably direct growth through a compact city model, thereby avoiding lock-ins which would be costly to reverse in the future.

• Produce a comprehensive redevelopment plan for urban centres, placing priority on developing unused land and promoting mixed land use with high-density housing.

• Develop high-capacity public transport such as rail transit (MRT or LRT) and promote low-emission forms of transport (bicycle, walking, ferries) through development of much-needed infrastructure and awareness campaigns. Design an integrated transport master plan and establish a transport authority to mobilise needed resources for investment and ensure its implementation.

• Encourage waste minimisation and segregation of waste at source by equipping households with colour coded waste receptacles.

• Review waste pricing to reflect actual cost of municipal waste service delivery and update LGUs Solid waste management plan based on a zero-waste policy approach. Encourage energy recovery from waste to divert waste from landfill.

• Promote metropolitan-wide co-ordination and shared services of waste management.

• Engage and support MSMEs to adopt environmentally friendly techniques in their work while encouraging large industries to undertake energy and resource assessments to improve efficiency of production systems and avoid wastage. Facilitate symbiotic networks among industrial clusters to promote material and energy exchange as a key driver of green growth in the manufacturing sector.

• Promote energy-saving behaviour among households and the use of certified energy efficiency appliances. Adopt regulatory ordinances and building ratings to encourage resource and energy efficiency in buildings, as exemplified by Mandaue.

• Promote renewable energy in residential and commercial establishments by mandating large-scale buildings to install rooftop solar PVs. Support skill training of labour force, build administrative capacity and encourage innovation.
Water security and green growth in Cebu, Philippines

Water security is a cornerstone of urban green growth strategies for Cebu

Metro Cebu faces significant water challenges, which are accentuated by the rapid urbanisation and economic development that the city continues to experience. The water demand is expected to triple by 2040. 80% of grey water (i.e. wastewater without human wastes) receives no treatment. Unaccounted-for-water (UFW) constituted 23% of total water supply in the MCWD service area in 2016 (Figure 3.1). Furthermore, Cebu suffers from salinity intrusion of the freshwater aquifer, partly due to over-exploitation of groundwater.

Floods also periodically occur in some areas of Metro Cebu. These are worsened by rapid urbanisation, economic growth and climate change, which increase the pressure on water resources and infrastructure.

**Water is a critical lever for green growth in Cebu, where water supply, sanitation and water-related risks are present.**

![Figure 3.1 Water losses and GDP per capita in MCWD and selected OECD cities](http://dx.doi.org/10.1787/9789264251090-en)

Source: Adapted from OECD (2016), Water Governance in Cities, OECD Publishing, Paris,
Developing diverse policy instruments for water supply and sanitation

Diverse strategies need to be developed to effectively address the water supply and sanitation challenges. Investing in “grey” infrastructure (i.e. dams, reservoirs) and diversifying sources of water supply in the long term are critical actions for Cebu to take, given the current infrastructure gap. At the same time, exploring complementary policy strategies, in particular green infrastructure, demand-side management tools, and smart technologies can provide greater flexibility and alleviate the demand for “grey” infrastructure. For example, MCWD’s block tariff structure could be revised to apply much higher rates to larger consumers (Figure 3.2). Such an economic measure can effectively manage demand, reduce consumption and generate sufficient revenues to expand the piped infrastructure and its quality.

Smart technologies can provide greater flexibility and alleviate the demand for “grey” infrastructure.

Figure 3.2 Water tariff structure in selected ASEAN cities

Comprehensive strategies to address water-related risks need to be urgently developed

Both climate change and socio-economic changes are likely to increase Cebu’s exposure to water-related risks. In Metro Cebu, 43% of households do not have drainage systems in their neighbourhoods. At a closer look, significant imbalances are observed across LGUs: while the figure in Cebu City is 21%, those in Lapu Lapu and San Fernando are as high as 70%.

Many LGUs have not been able to design Disaster Risk Reduction and Management (DRRM) plans, partly due to a lack of technical capacities and a short-sighted vision of disaster resilience. LGU’s DRRM officers are often not properly trained. Metropolitan scale DRRM planning will greatly help LGUs in this regard.

Robust DRRM strategies must be informed by a thorough assessment of vulnerability to floods in different scenarios, in particular critical infrastructure such as power utilities, landfills and water treatment stations.

Risk screening should be applied to areas where new development is likely to occur, and land use regulations (e.g. zoning, building permits) could be used to encourage flood-resilient design and to discourage the use of flood-prone land, thereby avoiding creating new zones at risk.

Land use must be recognised as an anchor of diverse strategies to enhance Cebu’s resilience to floods.

Insuring disaster-related losses is also a critical instrument of flood resilience, complementing infrastructure protection and flood-resilient urban planning. Business continuity planning and awareness efforts should also be scaled up.

Enhancing governance in the water sector

Water governance in Cebu is complex and at the heart of challenges that LGUs need to address in this sector. Municipal fragmentation, lack of relevant scale for investment, lack of incentives for co-operation, lack of staff, difficulties in raising tariffs, and limited information sharing are issues observed in Cebu, as in many OECD cities. In particular, the high sectoral fragmentation of water-related task and water “jurisdictions” between water districts, LGUs, private providers, local associations etc. prevent efficient reforms in water tariffs, investment in large-scale infrastructure, solid data collection mechanism at the provincial and metropolitan levels, and a holistic approach to flood resilience.

The creation of the Mega Cebu Development Authority and the Provincial Water Resources Authority is an opportunity to address the territorial and sectoral fragmentation of water responsibilities. At the same time, the proper means and power to harmonise regulations, reform tariffs and charges, and technical capacities – including data collection – should be further secured.

The responsibilities and use of financial resources between the national government and LGUs should also be further aligned to achieve common goals: the national government for instance could financially support metropolitan-wide water projects with high fixed costs.
Main policy recommendations

- Develop and encourage green infrastructures more aggressively, such as rainwater collectors on buildings and retention ponds, green spaces in vacant land deemed unsuitable for development.
- Make greater use of economic instruments to manage water demand, such as increased block water tariffs, charges for water abstraction, and carrot and stick mechanisms to encourage developers and households to build or use green infrastructures.
- Adopt a specific economic instrument strategy for low-income households, in particular abolish connection fees, to expand standardised pipe infrastructure.
- Progressively install smart water technologies, in particular smart water metres, pollution sensors in water streams and runoff simulation tools to assess flood risk.
- Scale up efforts to build robust DRRM plans in Cebu’s LGUs, supported by a thorough assessment of the vulnerability of businesses, industries, critical infrastructure and low-income households to floods. Develop corresponding flood risk maps and under different flood scenarios.
- Establish a protection and rehabilitation plan for Cebu’s watersheds, which are vital in providing a sustainable water supply to the urban area, by increasing the human, material and financial means of the Central Cebu Protected Landscape and through co-operation with local communities.
- Take a stronger leadership in promoting strategies for the resilience of businesses and industries, such as continuity plans, regular communication channels on assets and employers at risk, and local insurance mechanisms, with the support of the national government and international organisation.
- Ensure, through PWRA and MCDA, means to regulate and harmonise water governance in Cebu, in particular flood control mechanisms, tariffs and charges (e.g. water abstraction), water production and supply, and water sanitation, and supported by investment plans.
- Clarify and build more coherence and synergies between water supply, sanitation, and resilience policy frameworks at the national level. Set up national mechanisms for financial subsidies to large infrastructure projects in Cebu such as dams, wastewater and desalination plants, solar-powered water systems, and expansion of pipe connections.
- Develop metropolitan and provincial capacities to produce, collect and harmonise data on water supply, sanitation and flood risk.
Governance for Green Growth in Cebu, Philippines

Enhance the quality of co-operation between government bodies in Cebu

Today, local government units (LGUs) in Cebu have faced great difficulties in undertaking infrastructure development that could foster urban green growth. A significant gap is observed between national policy objectives and concrete action taken by LGUs on the ground. The role of LGUs has not always been well-articulated in national policy frameworks in some key sectors. The translation of national legislative and policy frameworks at the local level is often inefficient.

There seems to be an over-reliance on regulatory approaches rather than outreach and collaboration.

The Metro Cebu Development and Coordinating Board (MCDCB), a consortium of all the 13 LGUs of Metro Cebu, regional line agencies of the national government, private sector representatives and civil society organisations, has been playing a coordinating role, although it MCDCB remains limited in terms of finance and legal authorities.

Government authorities need to make sure that the new Mega Cebu Development Authority (MCDA) is designed to efficiently tackle both horizontal and vertical governance issues.
Strategies to unlock finance for urban green growth is critical

The total revenues of the 13 LGUs in Metro Cebu has significantly increased from PHP 8.3 billion in 2012 to PHP 10.4 billion in 2014, but participation of LGUs in public expenditures and investment remains low compared to OECD countries.

There are opportunities to further raise own revenue, in particular tariffs and user charges. Attracting private investment should also be emphasised: FDI inflows have been lower in the Philippines than in other countries of the Southeast Asian region, in particular because of the strong restrictiveness imposed by the central government. Opportunities also lie in Public-Private Partnerships (PPP) which are currently encouraged at the subnational level through the PPP Centre of NEDA; however, the impact of such initiative is not yet visible in Cebu.

International co-operation can further bridge the finance gap

Between 2002 and 2014, the Philippines has been the third largest recipient of official development finance in Southeast Asia, with around USD 30 billion, including USD 1.8 billion of environment-related commitments to cities. The benefits for Cebu, however, have been small with projects targeted at water supply and a Bus Rapid Transit System. The LGUs, the Province of Cebu and the national government should collaborate more systematically to channel down such sources of finance to the local level. An option is to set up a local investment fund for urban development.

In addition, there is a need to address the lack of capacity at both the national and local levels to apply for the range of development funds available.

Critical need for building local capacities

The lack of skills and strategies to collect, produce and analyse data is a serious obstacle. There is no data, for instance, on air quality, GHG emissions, and natural assets in Cebu, or about commuting, making it impossible to apply the OECD methodology on Functional Urban Areas (FUAs). In some cases, the data is only available in some sectors, and not in others (e.g. non-revenue water). In other cases, the type of data is not consistent across jurisdictions, or owned by private companies but not communicated to LGUs. Local universities and research institutes in particular, as well as local communities should be more actively engaged in the data production process.
Main Policy Recommendations

- Create a national policy framework in the water supply and sanitation sector. Devolve more responsibilities to LGUs and metropolitan forms of governance (MCDCB / MCDA) in the management of local resources, and reinforce mechanisms for technical assistance and outreach to build local capacities.

- Involve national line ministries and agencies in the future MCDA to align the Metro Cebu Roadmap with national development plans. Explore a stronger relationship with the Regional Development Council (RDC) of the Central Visayas to ensure proper co-ordination, policy complementarity and coherence across all sectors.

- Strengthen the role of provinces in facilitating inter-LGU co-operation on issues that affect multiple LGUs, like modelling local climate change impacts and flood early warning in shared river basins.

- Make greater use of economic instruments such as charges and tariffs (e.g. water extraction fees) in order to raise own revenue and encourage green behaviour. Better align national fiscal transfers with green growth objectives.

- Loosen FDI restrictions in critical opportunity areas for green growth and create incentives for green finance, such as sustainability standards in infrastructure investment markets. Use MCDA as a means to facilitate PPP at the metropolitan level.

- Channel down official development assistance more efficiently to Cebu through good co-ordination between national government and MCDCB / MCDA. Build capacities at national and local levels to apply to international climate funds.

- Create a Metropolitan Urban Observatory to collect and monitor data on urban green growth and to identify the functional urban area, as well as ensure connection with policy makers, local universities and the private sector.
Bibliography


This document summarises the key findings of the OECD Green Growth Studies: Green Growth in Cebu, Philippines. The full publication is available on the OECD iLibrary at: http://dx.doi.org/10.1787/9789264277991-en.