



Series 1 of 2019

bantay

Kinaiyahan



VISIONING ACCESSIBLE GREEN ZONES

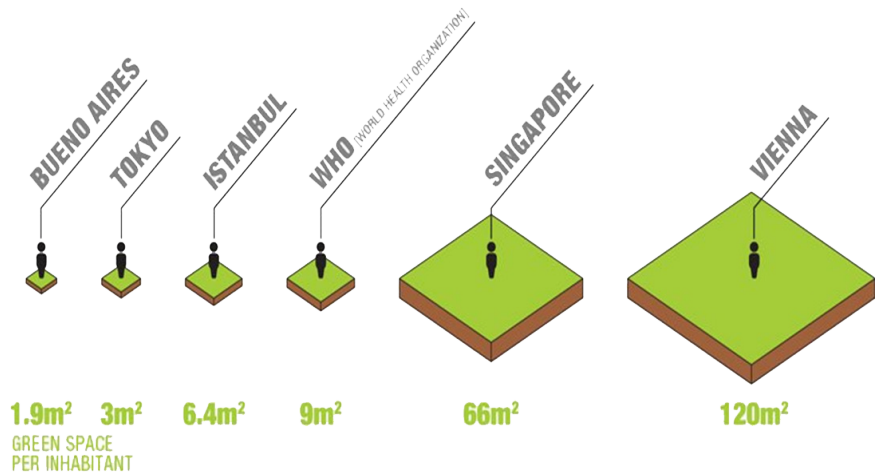
Watershed Issues in Brief Bantay Kinaiyahan is a regular publication of the Interface Development Interventions for Sustainability (IDIS) Inc. to provide the public with relevant and concise information on pressing watershed issues.

Insufficient Accessible Urban Greenery

Davao City boasts of huge green spaces, with 60% of its 145,000 hectares allocated for agriculture and forest lands. However, these green spaces are mostly located in the city's rural districts, leaving majority of the population in the urban center to face the negative impacts brought about by the massive urbanization such as urban heat, pollution and flooding affecting their health and well-being.

Focusing on the urban district covering about 35,000 hectares, where majority of the city's 1.6 million residents are, there are only 19 public parks managed by the local government. These parks cover 14.76 hectares, a mere 0.05% of the urban area and way short of the World Health Organization's (WHO) standard of 9 square meter of green space per person. Even if we include nature and garden parks outside the urban district, there are only 37 public parks and open spaces.

The lack of public parks and open recreational areas has been identified in the City's Comprehensive Development Plan way back in 1996-2001. To address the issue, the Comprehensive Land Use Plan (CLUP) for 2011-2022 proposed and encouraged the development of more public open spaces within the city such as parks, bay walks and urban forests. Based on the assessment of New York University-Marron Institute of Urban Management and Sustainable Davao Movement in 2017, the city lacks accessible parks in its urban districts. However, there are potential spaces that can be developed as privately-owned but publicly accessible open spaces (POPOS) that can be added to the city's need for green space.



9 sq.m per person standard of the World Health Organization (WHO) as compared to other cities in the world. Vienna and City-State Singapore lead in the largest areas of open and green spaces in the world. (Source: Yu Sing, 2016)

Geomapping and Developing Models for Proposed Urban Green Zones in Davao City

IDIS conducted a study from February-July 2019 to map potential green zones and provide development models to improve urban greenery in the city. Specifically, the study aimed to: (1) identify existing green spaces in the city and generate thematic maps; (2) assess existing development plans and significant concerns in identified green spaces; and (3) produce perspective models of feasible green development per major urban district.

The study focused on eight major urban districts with high built-up rates and population densities in Davao City based on the Comprehensive Zoning Ordinance: Poblacion, Agdao, Buhangin, Talomo, Toril Mintal-Tugbok, Calinan and Bunawan.

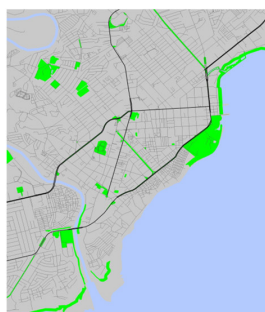
Assessment of Davao City Green Spaces

As presented in the table beside, the total land area and summary composition of Urban Green Zones from both proposed and existing sites is at 1,427.08 hectares. Davao City can then meet the international standards of green space requirement with 9.5 square meter/person based on the 2015 census. With Davao City's growing population however, projected at 1.6 million in 2019, Davao City will fall short with only 8.67 square meter green space/ person.

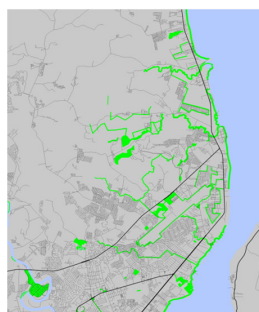
However, even if the City meets the quantity of green space based on international standards, only about 40% of the existing green space in Davao City is publicly accessible. The proposed additional green space (surveyed green spaces and urban streetscapes) if declared, will contribute additional 277.59 hectares or about 19% more guaranteed publicly accessible green space. Davao City will then have nearly 60% publicly accessible green space for its citizens.

SUMMARY OF URBAN GREEN ZONES COMPOSITION IN GIS		
Zone Type	Area (Hectares)	Remarks
Surveyed Green Spaces	277.59	Proposed
Urban Streetscapes	6.81	Proposed
Parks & Recreation	161.18	Existing (CLUP 2013-2022)
Open Space	418.54	Existing (CLUP 2013-2022)
Buffer Zones	49	Existing (CLUP 2013-2022)
Conservation Zones (Urban Only)	288.03	Existing (CLUP 2013-2022)
Urban Ecological Enhancement Subzone (UEESZ)	229.6	Existing (CLUP 2013-2022)
Total	1,427.08 ha.	

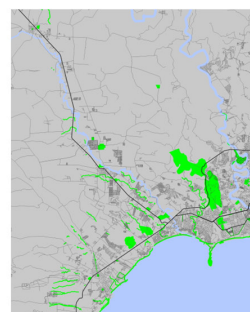
- Majority of green spaces identified are privately-owned, some currently idle and used for residential/ agricultural land use, but have high potential to be privately-owned, publicly accessible open spaces (POPOS).
- There are remaining urban patches of forests and wetlands that are currently threatened because there is no existing protection mechanism of any kind. Many green spaces likewise have poor to moderate vegetative cover and yet continue to serve as habitat for endemic wildlife, which can be reforested and rehabilitated to serve their maximum ecological and social benefits.
- All proposed green zones are within or near areas that are highly residential and commercial zones providing the much needed green space requirement for livability of citizens as well as within disaster mitigation zones to serve as buffer zone to protect residents from impacts of flooding and other disasters.



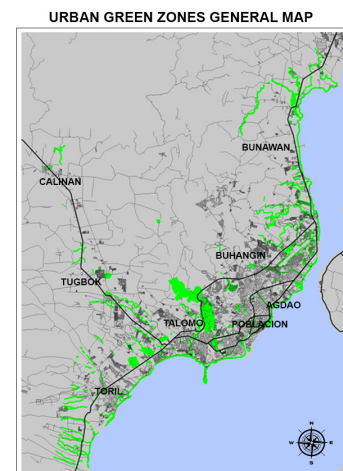
Central Districts
Poblacion & Agdao



North-East Districts
Buhangin & Bunawan



North-West Districts
Talomo, Toril, Tugbok & Calinan



Geospatial data were collected through a combination of actual surveying and securing secondary data from the City Planning Development Office. Maps were developed and analyzed through the use of Quantum Geographic Information System (QGIS) Software.

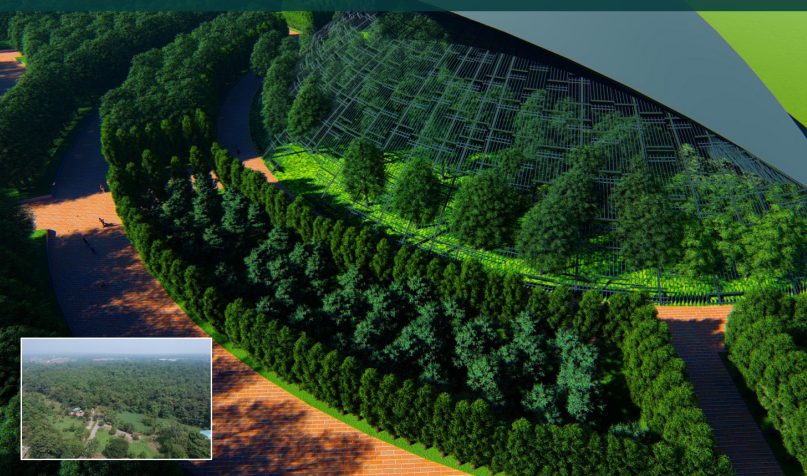
Proposed Development Plans and Perspectives for Davao City Urban Green Zones



IDIS partnered with the University of Mindanao Bachelor of Science in Architecture students enrolled in Urban Design subjects who showcased their creativity and skills in designing Davao City urban green spaces. The students were assigned different areas with actual environmental and land use issues identified through the research. Students were asked to address these issues through their designs to contribute to more livable spaces for Dabawenyos.

AGILA ECO-PARK
by Pedia, Yee, Vailoces & Villarco

A Carbon Forest Park and Ecological Sanctuary for the Philippine Eagles in Punta Gallera, Talomo District.



DOÑA LUISA FOREST PARK
by Mesias, Hernandez, Balaba & Cagay

An eco-forest park in the middle of busy streets near SM City, Ecoland that will provide fresh air, cool ambiance and free relaxation opportunities for residents.



MARFORI BIOPHILIC PARK
by Barrios, Eder, Garzon, Geneza, Tabion & Cataylo

A park located in Marfori, features a central lake, attraction to wildlife and biodiversity growth, playgrounds and panoramic view for park-goers.



ESTUARINE MANGROVE FOREST PARK
by Mabunga, Galvez, Ouano & Padernilla

Located along Davao River near Bolton Bridge, the park features a boardwalk park and promenade showcasing the riverside urban ecosystem.



AGDAO CREEK PARK
by Agton, Attos, Tupas & Ucang

Neglected creek to a functional hook, a strip for recreation and safe access for residential communities in Agdao.



BUCANA MANGROVE BOARDWALK ECO-PARK
by Mesagrande, Tomolin, Penalosa & Ventero

An eco-tourism park that aims for mangrove rehabilitation, features boardwalk areas, docking areas, food stalls and wildlife viewing deck.



CALINAN AGRO-FOREST PARK
by Borromeo, Regis, Reyes & Varon

A large proposed park for Davao's agribusiness and ecotourism hub, Calinan District. The district park features agro-forestry nursery and native flora seedling center as learning site for ecological restoration.



DAVAO CITY YOUNG & BOLD ART PARK
by Larano, Macarambon, Echanes, Bermudez & Castillo

An exhibition public space for marginalized and local artists located near St. Joseph Parish, Buhangin District.



Francisco Bangoy International Airport Park Network

AIRPLANE VIEWING PARK
by Tulang, Ibarra, Gallego & Sosobrado

A new tourism asset featuring good view spots and food establishments located in Lea Subdivision, Mamay Road.



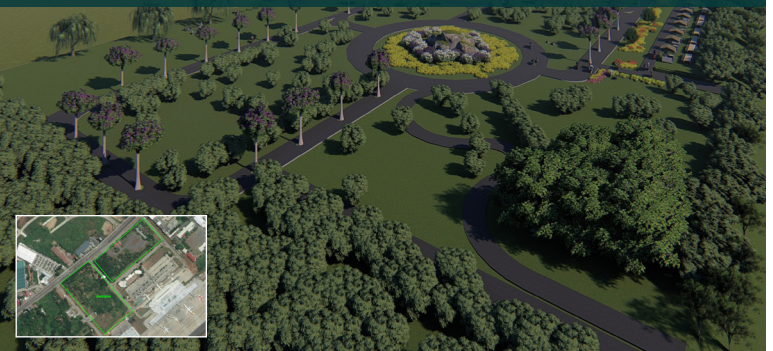
AIRPORT FLOOD PARK
by Salvahan, Elica, Viernes & Firmeza

Features a flood-adaptive landscape design, retention of wetland and provision of green corridors.



GAEA SANCTUARY
by Borres, Claro, Odchique & Quinal

A recreation park for airport goers, features viewing decks, open spaces, biofarming areas and street-food market fronting the Airport.



Wetlands Parks and Sanctuaries

BELISARIO WETLAND PARK

by Palawan, Natividad, Biol & Gardose

A wetland and pond park for bird watching and resting place for students, parents and residents near Belisario Heights, Buhangin District.



BUHANGIN THERAPEUTIC WETLAND PARK

by Anora, Zamora, Macagba, Anastacio, Abellana & Zanoria

Preserving the wetland near Gaisano Buhangin through a proposed area for community to meet physical, psychological, social and spiritual needs.



JARODA WETLAND SANCTUARY

by Olofernes, Miculob, Tabanao & Salido

A space with spaces for running, walking, nature trails and viewing deck for birdwatching in the middle of a commercial and residential zones in Juna Subdivision, Matina.



TORIL FREEDOM PARK

by Antipala, Caro, Deguit, Lopez & Soriano

Toril's remaining green oasis, this community park caters a strong neighborhood community, character & cultural diversity along Fish Port Drive, Toril District.



SANDAWA CREEK POCKET PARK

by Banados, Ferrer, Gotera, Pojaras & Respicio

A small open space near a fast food chain with a high-foot traffic from travellers coming from an adjacent transport terminal, features planters and bioswales for the creekside.



MATINA ECO-CULTURAL LINEAR PARK

by Antiquisa, Hadji Nasif, Meren & Tabasa

An Eco-cultural park located along McArthur Highway, providing citizens with vegetated waiting sheds and safe pedestrian paths for walking and jogging.



Conclusion & Recommendations

The study identified and mapped existing green spaces in the city including remaining forests, wetlands, grasslands, open fields, landmarks and streetscapes. IDIS recommends that the LGU integrate the proposed green zones into the Comprehensive Land Use Plan 2022-2031 and enhance implementation of policies and programs for more parks development. Protecting these remaining green spaces in the city center will help mitigate the impacts of climate change and increase the Open Space Network, Parks and Recreation Land Use Distribution in the city.

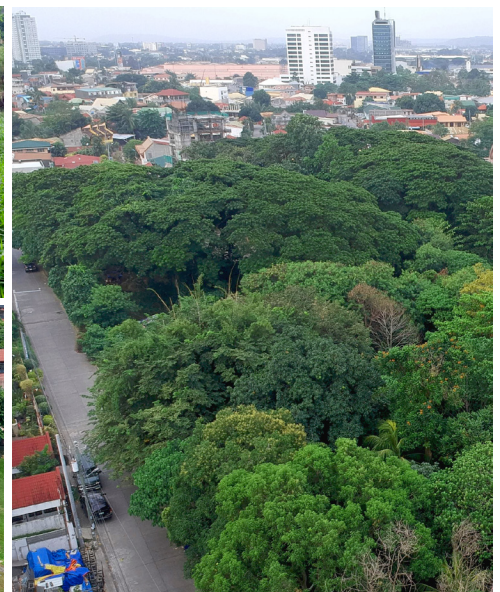
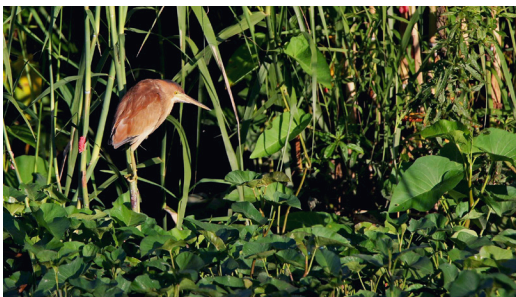
Davao City's urban district still has the green space it needs to provide citizens with the 9 square meters/person standard set by the World Health Organization. However, this will no longer suffice in the near future as the city's population continues to grow. In terms of accessibility, less than half of Davao City's current urban green space are accessible to the public. The city needs to prioritize the protection of proposed green zones with existing green spaces that can become public parks or public open spaces. With these green zones, Davao will have about 60% of its green space accessible to the public. Moreover, among these identified green zones are wetlands and urban forests that still host good range of endemic wildlife but currently do not have any protection mechanism. They are scarce natural resources that not only perform ecological services but can also serve as the city's tourism spots for biodiversity.

Legislative

- Pass an ordinance to protect remaining urban wetlands and urban forests and green spaces that serve as habitat for endemic wildlife, essential in sustainable urban drainage systems (SUDS), mitigating urban heat island effect (UHI) and carbon sequestration.
- Pass a policy to protect public streetscapes such as street islands, rotundas, planting strips which serve as an important urban green spaces to protect from demolition or damage from infrastructure projects.

Executive

- Integrate highly recommended green zones in the Comprehensive Land Use Plan and Zoning Ordinance.
- Explore negotiations with private owners who are willing to sell their private lands to secure more urban nature reserves and/or provide incentives to those who are willing to lease their lands as privately-owned publicly open spaces (POPOS).
- Mainstream Adopt-a-Park and Adopt-a-Street Island program for reforestation, greening and beautification of identified green spaces with poor to moderate vegetative cover to be led by CENRO in partnership with the BLGUs and private sector.
- Appropriate annual budget for parks development in the recommended green zones.



Highlights from the Research Presentation



"I'm very happy that IDIS has given the University of Mindanao College of Architecture a rare opportunity to partner in this research and some form of community extension."

-Architect Iuminado Quinto
Dean, College of Architecture & Fine Arts,
University of Mindanao

"The massive infrastructure development in Davao City has come at the expense of massive loss of greenery in urban areas. We hope our activity today will contribute to the realization that urban greenery should increase, not decrease, and contribute to health and environment. We hope this will not remain in paper but Davao City Local Government will adopt this."

-Chinkie Pelino-Golle
Executive Director, IDIS

"Always remember to look at what the community needs instead of pushing your designs to the community. This was a good learning activity for you to create green spaces. I hope you will turn this into your advocacy. As future architects, hope you will keep your integrity and refuse projects that will degrade the environment, for example a project that will cut down 100 trees. We only have one earth to live in. Hope you will choose advocacy over profit."

-EnP Jason Occidental
Ateneo de Davao University

"Trees to be used in urban greening should be endemic, using city's local trees. At DPWH, every project done in City Urban Road Enhancement should be accompanied by greening activities."

-Demuel Lozada
DPWH

"Good to know that even students have vision for Davao City, especially for areas that are idle. For lack of vegetation issue, this can be addressed through reforestation, trees planted can help in heat island effect and absorb dust. We hope to be given copies of your vision, hopefully the can be considered in future developments of parks and areas in the city."

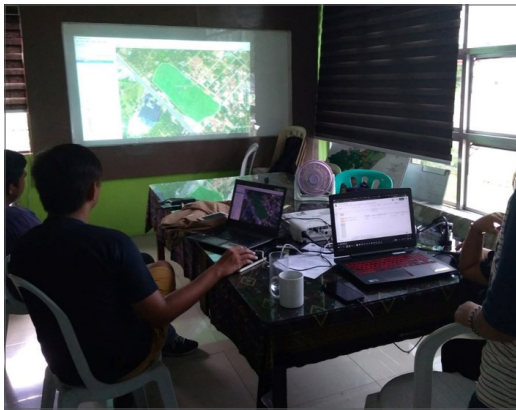
-Engr. Arjean Jumamoy
City Engineer's Office

"We all want and need green, open spaces. We don't want to see children play on the streets because there are no open spaces for them. The government is happy to have talents like you. I encourage you to go beyond your university and go to your government to demand actions on this."

-Coun. Diosdado Mahipus Jr.
Chair, Committee on Environment and Natural Resources



ABOUT THE RESEARCH TEAM



The IDIS research team for Urban Green Zones study was composed of researchers interested in different fields of environmental science. It was spearheaded by IDIS' Environmental Research Specialist - Lemuel Manalo, together with Rick Inting as the Geographic Information System (GIS) Specialist and two Field Researchers, Ram Manlatican & Noel Ferrer. The team also collaborated with Forestry and Geology student interns from the University of Mindanao and University of Southeastern Philippines. UM Agro-forestry Interns Caren Provideo & Jane Cabero helped in the urban forest assessment while USEP Geology students Selah Labanero assisted in analyzing physical and disaster vulnerability parameters of surveyed sites. The research team conducted the field survey from April to July 2019 and the study was presented to the public last October 2019.

WORLD PARKS DAY CELEBRATION



September 20 is World Parks Day. It is a global celebration highlighting the importance of parks and open spaces and the tremendous value they offer, most especially public access to green spaces and nature. IDIS encourages the public to celebrate and initiate environmental activities at their local parks such as community gatherings, sports and recreation, tree growing, gardening, clean-up and etc. It is through utilizing and taking care of these spaces that many will realize and support the advocacy of creating more public parks, accessible safe and green spaces.



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