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Davao City for Clean Air



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Presentation Outline

- I. ENVIRONMENTAL GOVERNANCE
- II. FACILITATING MULTI-STAKEHOLDER SOLUTIONS
- III. OUTCOME INDICATORS

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ENVIRONMENTAL GOVERNANCE

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Smoke-Free Davao City



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Smoke-Free Davao City

Policy :

- In advancing the 2003 National Tobacco Control Law and to strengthen anti-smoking policy of then City Mayor Duterte, the City passed its Comprehensive Anti-Smoking Ordinance in 2002 and amended in 2012.
- The Ordinance bans smoking in all public places and enclosed places but has an option for designating a smoking area – provided establishments pass through a series of rigid inspections by the Anti-Smoking Task Force.
- The ordinance also extends smoke-free places to some public outdoor spaces where people congregate to be together or attend concerts, rallies and other events.

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Smoke-Free Davao City

Implementation :

- The Anti-Smoking Task Force was organized to prepare and implement an enforcement plan.
- Stakeholders support was ensured to strengthen commitments, consolidate efforts, and sustain the participation of partners.
- Popularization was initiated and sustained through “No Smoking” signs informational billboards on the hazards of smoking and important provisions of the law placed in public places within the City.
- Enforcement through inspection of establishments, community vigilance and apprehension of violators.
- Regular monitor the implementation of the law and evaluate its Results and the need for improvement.

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Smoke-Free Davao City

Results :

- Majority of public places are completely smoke-free.
- Intensity of smoking reduced in the city.
- Davao City's smoke-free experience has been recognized by, and become a learning resource for, other cities and countries in the region and the world.
- Residents and visitors are well aware of the smoking regulation of the city

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Launching, May 2002



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Youth for Anti-Smoking



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Anti-smoking Educators



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Lectures in Schools



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Regular Meeting with Enforcers



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Anti Smoke-belching



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Anti Smoke-belching

Policy:

- The Anti-Smoke Belching ordinance of Davao City was passed in 2006 to protect the air quality of the Davao City Airshed declared under the Clean Air Act of 1999
- Standards and procedures for emission testing was established
- All private emission testing centers (PETCs) shall be monitored by the city and national government agencies

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Anti Smoke-belching

Implementation:

- Established the Anti Smoke-Belching Unit (ASBU) for the city to enforce the ordinance
- Vehicle emission testing is being conducted for all vehicles annually by private emission testing centers
- Random testing is conducted by the ASBU to vehicles suspected of smoke belching

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Anti Smoke-belching

Results:

- An annual average of 10,783 vehicles are being randomly monitored by the Anti-Smoke Belching Unit
- Ensure vehicles run under allowable emission standards
- 18% decrease in Carbon Monoxide (CO) emissions from vehicles; 66% decrease in Nitrogen Oxide (NO) emissions

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Regular Meeting with the ASB Unit



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Garage smoke emission testing for public transport



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Ban on Aerial Spray



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Ban on Aerial Spray

Policy :

- In 2007, Davao City passed Ordinance 0309-07, banning aerial spraying of chemicals as an agricultural practice.
- The ordinance was passed to protect the communities around agricultural plantations as well as communities downstream and the river systems. Moreover, it aims to protect the aquifers, the city's source of drinking water.
- A thirty (30) meter buffer zone within the boundaries of their agricultural farms/plantations must be provided for by all agricultural entities.

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Ban on Aerial Spray

Implementation :

- Strict enforcement was immediately implemented.
- Participation of affected agricultural entities was enjoined through meetings and fora
- A Multipartite Monitoring Team was formed to constantly monitor the progress of compliance by the agricultural plantations

Results :

- More than 5,000 hectares of fruit plantation complied with the ban
- Safer (lesser health risk) communities situated near agricultural plantations
- Lesser risk of water and ground pollution

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Monitoring compliance of banana plantations



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Monitoring compliance of banana plantations



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Managing Solidwastes



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Managing Solidwastes

Policy

- The Davao City Ecological Solid Waste Management Ordinance was enacted in 2009 to ensure the protection of public health and the environment. This is in compliance to the Republic Act 9003 of 2002, providing for an ecological solid waste management program
- Promote research and development programs for improved methods of waste collection, separation, processing, recovery and disposal
- Encourage greater public-private partnership in solid waste management
- Instill environmental awareness and action among citizenry
- Prohibit open burning of solid waste

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Managing Solidwastes

Implementation

- Acquisition of solid waste management equipment such as dump trucks, compactor trucks, garbage bins was prioritized
- Intensive Information Education Campaign was sustained to familiarize families, businesses and institutions
- A sanitary landfill facility was constructed and has been in operation
- Composting Facilities and Materials Recovery Facilities were also established
- A solid waste management enforcement unit was created to enforce the ordinance
- Complementary and essential facilities were established such as composting facilities and materials recovery facilities

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Managing Solidwastes

Results

- Eliminated open dumping, which can be a source of pollution and health hazards
- Greatly reduced volume of waste disposed to the landfill facility by 43.77% from 377,220 tons in 2009 to 212,112 tons in 2015.
- Encouraged families to segregate wastes at source
- Process biodegradable wastes and convert it into something useful
- Greatly reduced the risk of polluting waterways

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Upgrading of Facilities



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Greening



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Greening

Policy

- Massive reforestation on a nationwide scale through the National Greening Program (NGP) by virtue of Presidential Executive Order
 - The program is seen as a climate change mitigation strategy as it seeks to enhance the country's forest stock to absorb carbon dioxide
 - This is a convergence initiative among the Departments of Agriculture, Agrarian Reform and Environment and Natural Resources
- Urban greening is a priority of the city government which includes tree planting, seedling propagation and parks maintenance
- The Zoning Ordinance of Davao city, implemented in 2015, declared a total of 74,684 hectares (or 31% of the city's land area) as conservation, forest, parks & recreation or mangrove rehabilitation.

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Greening

Implementation

- Areas declared as protection forests have been prioritized for greening
- Operation and maintenance of nurseries around the city
- Private groups and schools are enjoined in the tree-planting activities both in upland and urban areas
- Protection forests are considered "No-Habitation zones" through strict implementation of the Zoning Ordinance

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Greening

Results

- A total of 6,104 hectares were planted with various tree species
- A total of 19 urban parks are being maintained, including roadsides and road islands
- For 2015, a total of 230,231 seedlings of various mangrove, fruit and forest trees to watershed, riverbank, roadside and mangrove areas were distributed and planted

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Before

20 months after



Upper Kibalang, Marilog

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Before

30 months after



Brgy Eden, Toril District

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Mangrove Rehabilitation

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Riverbank Rehabilitation

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Urban Container Garden



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Air Quality Monitoring

- Davao City Airshed was established by virtue of DENR Memorandum Circular 02-Series of 2003
- Davao City Airshed Governing Board was created which is tasked to formulate and carry out its air quality action plan
- In 2013, the Davao City Air Quality Monitoring Network (DC AQMN) was established. It is an area quality monitoring network of urban scale representation and composed of selected sampling sites from the three AQMNs of neighborhood scale representation. The devices used for the monitoring network measure PM_{10} , $PM_{2.5}$, SO_2 , NO_2 , O_3 and CO parameters.

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Air Quality Monitoring Stations in 6 locations

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Stack Sampling



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FACILITATING MULTI-STAKEHOLDER SOLUTIONS

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Davao City Water District – Adopt-A-Site Project



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Interface Development Interventions – Adopt-A-Riverbank Program



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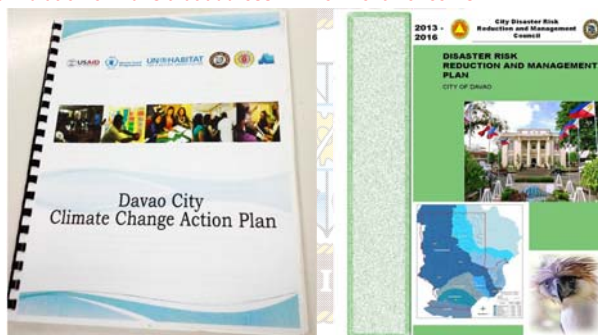
Mindanao Land Foundation – Disaster Preparedness



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Disaster Risk Reduction and Management Council – Formulation of Plans that address Environment Concerns



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UN Habitat - Vulnerability Assessment



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OUTCOME INDICATORS

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Air Quality :

Based on the 2015 monitoring of air quality :

- PM₁₀ (Particulate Matter) concentrations are within the short-term guideline value of 150 ug/Ncm.
- SO₂ (Sulfur Dioxide) concentrations fall within the short-term guideline value of 180 ug/Ncm.
- NO₂ (Nitrogen Dioxide) concentrations are all within the short-term guideline value of 150 ug/Ncm.
- The 8-hr O₃ (Ground-level ozone) concentrations are within the short-term guideline value of 60 ug/Ncm.
- PM_{2.5} (Particulate Matter) concentrations are within the short-term guideline value of 75 ug/Ncm.
- The 8-hr CO (Carbon Monoxide) concentrations are all within the short term guideline value of 9 ug/Ncm.

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Health :

- The number of cases (lung cancer, chronic bronchitis, ischemic heart disease) which could be related to smoking has decreased by 37.33% from 3,410 in 2010 to 2,137 in 2015.
- The number of cases with respiratory diseases related to air pollution decreased by 17.33% from 8,216 in 2013 to 6,792 in 2015

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Awards



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Ways Forward

- Expansion of air quality monitoring network
- Atrium for hospitals
- Installation of anti-pollution devices in large manufacturing plants to reduce if not eliminate air contaminants
- Greening programs for carbon sequestration
- Inclusion of "Green Architecture" in the zoning ordinance
- Urban greening (parks and other open spaces)
- Adopt waste-to-energy technologies
- Encourage and promote use of renewable energy source

L I F E I S H E R E

