



V-LED

STIMULATING
URBAN CLIMATE ACTION

PROGRAM

GOOD PRACTICE EXCHANGE on localizing national climate action targets through implementation of mitigation actions

Santa Rosa City
March 16, 2016

 **UN HABITAT**
FOR A BETTER URBAN FUTURE


adelphi

Supported by:



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

Based on a decision of the German Bundestag





Project background

The success of a global response to the climate challenge depends on the coordinated effort at multiple levels. National climate and green growth strategies and targets being in place, however, very few countries have been able to establish dynamic vertical policy coordination mechanisms between the national and local levels. It is against this backdrop that UN-Habitat Philippines continues to support government's efforts in responding to challenges of climate change.

Starting last quarter of 2015 until 2018, UN-Habitat will implement two but interrelated projects: (i) Vertical integration and learning on low emission development (V-LED) with support of the International Climate Initiative (IKI)-Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and in partnership with Adelphi Research GmbH; and (ii) Strengthening capacities of national and regional level governance to mainstream climate change concerns into national urban-related policies with UNEP and UNESCAP as partners. Both projects are geared toward supporting government in integrating climate change into national urban policy and fostering low-emission development at the national and local levels.

In the Philippines, local governments are complying with their mandates to formulate their comprehensive plans and mainstream local climate change actions into such mandated plans. Much is happening at the local level and this makes it important to further support such local efforts and vertically link to national programs and policies with climate and sustainable energy strategies and policies integrated into the process.

Introduction

Project goal

In order to harness the local potential and align multi-level efforts, this project sets out to support the horizontal and vertical policy efforts among national and local government stakeholders.

Project objectives

1. To strengthen the implementing capacities of local government for climate resilient, low-emission policy/ program formulation and support national targets and priorities on climate change adaptation and mitigation;
2. To build coordination, stimulate learning and knowledge transfer relating to low-emission experiences in the four selected countries (Philippines, Vietnam, Kenya and South Africa); and
3. To vertically link local actions into national programs through guide/manual enhancement and scaling up good practices on LEDS.

Workshop objectives

1. Learn the highlights of Santa Rosa's process of formulating its GHG Management Plan and setting its climate change baselines and targets to lower emissions in three years;
2. Be oriented to the mitigation projects currently implemented to contribute to the reduction targets;
3. Learn from other LGUs' experiences in local climate change action planning and opportunities for mitigation and adaptation action planning; and
4. Share insights on how the current mitigation projects can be enhanced for replication and sustainability.



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Time	Activity	Speaker/Facilitator
8:00	<p>Preliminaries Invocation and Pambansang Awit Introduction of participants</p> <p>Message Context setting of the V-LED Project</p> <ul style="list-style-type: none">• Overview of the Climate Dialogue Exchange, which aims to raise awareness and encourage sharing of good practice exchanges• Objectives of the Good Practice Exchange	<p>Bernhard Barth Human Settlements Officer UN-Habitat Regional Office for Asia and the Pacific</p> <p>Dr. Marcus Andreas Project Manager Adelphi gGmbH</p>
8:30	<p>About Santa Rosa</p> <ul style="list-style-type: none">• Demographic, physical and economic attributes• Vision of Santa Rosa and its role in CALABARZON region• Challenges to climate change: natural (typhoons, floods, etc.)• Anthropogenic hazards (emissions, solid waste, etc)• Efforts to mainstream climate change into local planning• Setting goals and targets for mitigation/adaptation projects from 2015 onwards• Integration of mitigation processes to LCCAP formulation	<p>Mr. Ermin Lucino, EnP City Planning Development Coordinator City of Santa Rosa</p>

Program

Time	Activity	Speaker/Facilitator
9:00	<p>Santa Rosa's efforts to mitigate</p> <p>Introduction to the GHG inventory and the process of formulating the GHG Management Plan to reduce emissions by sectors (solid waste, energy, industry, etc.)</p> <ul style="list-style-type: none"> • Baselines and reference scenario, trends in potential emissions, identification of net emissions and percentage contribution to reduce emissions • Vertical and horizontal partnerships/support to derive the GHG Management Plan 	<p>Ms. Erlinda Creencia EnP City Environment and Natural Resources Officer City of Santa Rosa</p>
9:30	<p>Intended Nationally Determined Contributions (INDC)</p> <p>Briefing on the INDC, its features and GHG inventory on solid waste: LGU roles to attain the emission target</p>	<p>Ms. Ma. Delia Valdez Senior Environmental Management Specialist National Solid Waste Management Council</p>
<i>Working break</i>		
10:00	<p>Video presentations with live annotations of two mitigation projects (GHG reduction)</p> <p>How the GHG framework helped Santa Rosa in project identification in order to attain the targets</p> <p>Project 1: Charcoal Briquetting</p> <ul style="list-style-type: none"> • Project description • Reference scenario in solid waste, methane reduction computation and how the project could divert organic wastes, project costs, who benefited, etc. 	<p>Ms. Erlinda Creencia EnP City Environment and Natural Resources Officer City of Santa Rosa</p>



Time	Activity	Speaker/Facilitator
	<p>Project 2: Composting Facility</p> <ul style="list-style-type: none"> • Project description • Establishment of a composting facility with a combined annual capacity of 4,320 MT. • What is the reference scenario in solid waste? • Was methane reduction computed by the city as the project diverts organic wastes? Project costs, who benefited, etc. 	<p>Ms. Erlinda Creencia EnP City Environment and Natural Resources Officer City of Santa Rosa</p>
11:00	<p>Moderated feedback session Sharing from participants:</p> <ul style="list-style-type: none"> • What are your learnings? • Are the projects applicable in your LGUs? • Are there areas that you can enhance if you implement in your area? 	<p><i>UN-Habitat and Adelphi to moderate</i></p>
11:30	<p>Photo gallery Through a 'World Cafe', LGUs will explain:</p> <ul style="list-style-type: none"> • Similar efforts that aim to manage solid waste or reduce methane • Challenges in implementation • LGU perspectives on the ways national government can better support LGUs in the replication and adaptation of good practice on LED and mainstreaming in the plan 	<p><i>LGUs representatives, moderated by UN-Habitat</i></p>
12:00	<p>LUNCH with the City Mayor</p>	

Program

Time	Activity	Speaker/Facilitator
1:30	Workshop The 5 x 5 x 5 Challenge: Improving local climate change actions	Dr. Marcus Andreas Project Manager Adelphi gGmbH Ms. Kora Rösler Research Fellow UN-Habitat
3:00	Visit to project sites in Barangay Sinalhan <i>Open forum and clarifications</i>	<i>CENRO and CPDC</i>
3:40	Post-event evaluation	Cindy Bryson Knowledge Management and Communications Specialist UN-Habitat
3:50	Closing Distribution of certificates of participation and certificates of attendance	<i>City of Santa Rosa</i>



REPUBLIC OF THE PHILIPPINES
Intended Nationally Determined Contributions
Communicated to the UNFCCC on October 2015

The Republic of the Philippines is pleased to submit its Intended Nationally Determined Contributions in accordance with Decisions 1/CP.19 and 1/CP.20 of the Conference of Parties of the United Nations Framework Convention on Climate Change (UNFCCC). The submission is anchored on its policy declaration under the Climate Change Law of 2009, as amended in 2012, whereby the State shall cooperate with the global community in the resolution of climate change issues.

PREAMBLE

The Philippine INDC is premised on the philosophy of pursuing climate change mitigation as a function of adaptation. As a country highly vulnerable to climate and disaster risks, mitigation measures as presented in the INDC will be pursued in line with sustainable development and a low-emission development that promotes inclusive growth. As such, the pursuit of the mitigation measures of the country is conditioned on the financing resources, including technology development and transfer, and capacity building. Furthermore, the support for these initiatives will be substantially provided under a new agreement expected to be forged by the 21st Session of the Conference of Parties in December 2015.

The information presented in this submission is based on available data at the time of the INDC's formulation. The INDC will be updated as more data become available. The discussion on adaptation and loss-and-damage is intended to provide part of the critical context of the mitigation proposal in this INDC. The adaptation actions with additional support from

international sources will enhance the country's capacity towards climate resiliency and also its capacity to implement the mitigation options.

The Philippines recognizes its responsibility to contribute its fair share in global climate action, particularly in the effort to realize the ultimate aim of the Convention to avoid dangerous anthropogenic interference with the climate system. Based on fair share, the country will commence a broad consultative process to determine the propriety of the need to peak its emissions taking into consideration the country's economic growth and development. The country however views the need to peak its emissions as an opportunity to transition as early as it can to an efficient, resilient, adaptive, sustainable clean energy-driven economy, and it is determined to do so with partners from the global community.

The full implementation of the Philippine INDC is contingent on the provision of all elements under the means of implementation section. The Philippines still recognizes the leadership role of developed countries in addressing climate change.

NATIONAL CONTEXT

The Philippines, an archipelagic country with a population of more than 100 million, is highly vulnerable to the impacts of climate change and natural hazards. In the Global Climate Risk Index of Germanwatch, the Philippines ranked fifth with respect to the long-term Climate Risk Index (CRI) for the period of 1994 to 2014. In terms of the 2013 CRI, the Philippines is identified as the most affected country (ranked 1st).

While the Philippines is making significant strides toward a more inclusive growth aimed at further reducing poverty and creating more opportunities for shared prosperity, the challenge is to pursue economic development while simultaneously having to deal with the impacts of climate change and natural hazards. Climate change and natural hazards will progressively impact sectors that are strategically important for the growth of the economy, e.g., agriculture, fisheries, and water resource management. Increase in temperature, coupled with changes in precipitation patterns and hydrological regimes, can only exacerbate the country's existing



vulnerabilities, threatening its sustainable development and the survival of future generations of Filipinos.

Recognizing the critical and complex challenges posed by climate change, the Philippines continuously pursues institutional reforms factoring sustainable and responsible use of natural resources, respect for, protection, promotion, and fulfillment, as well as, the full enjoyment of human rights by all, including the indigenous peoples and local communities, gender equality and the full and equal participation of women, intergenerational equity, biodiversity conservation, food and water security. The Philippine government has put in place a comprehensive climate change policy agenda, to wit:

- Passage of the Climate Change Act of 2009 and amended in 2012 which established the *Climate Change Commission (CCC)* to lead policy development and coordinate, monitor and evaluate climate response. The Cabinet Cluster on Climate Change Adaptation and Mitigation (CCAM) was also created to focus on increasing convergence and coordination among government agencies with key roles on adaptation and mitigation. The amended law also led to the introduction of the Peoples' Survival Fund allocating national budget for adaptation needs of local communities and local governments.
- Enactment of the National Disaster Risk Reduction and Management Law of 2010 serving as guide to mitigate impacts of disasters and increase resilience in the face of natural disasters.
- Adoption of the *National Framework Strategy on Climate Change (NFSCC)* in 2010 laid the foundation and roadmap for addressing climate change. It identified adaptation as the anchor strategy and considered mitigation as a function of adaptation.
- Issuance of the *National Climate Change Action Plan (NCCAP)* in 2011 set the tone for the Government to implement short, medium and long term actions in seven thematic areas of food security, water security, ecological and environmental stability, human security, climate smart industries and services, sustainable energy, and knowledge and capacity development.

- Promulgation of complementary sectoral laws (e.g. Ecological Solid Waste Management Act of 2000, Biofuels Act of 2006 and the Renewable Energy Act of 2008) that led to the increase in the utilization of renewable energy sources, reinforcing and institutionalizing climate change mitigation actions, as well as, creating opportunities for synergy and collaboration for an efficient utilization of limited resources.

The Philippines is endowed with diverse ecosystems, which are considered extremely important for enabling the country to develop resilience in the face of climate change. Among these are its forests and marine resources, which are seen as contributing to both adaptation and mitigation needs. Marine ecosystems can play a crucial role with its potential on blue carbon. Some of these ecosystem contributions are articulated in the Philippine National REDD Plus Strategy and the recently updated Philippine Biodiversity Strategy and Action Plan. The Philippine legislature is poised to declare by law 97 protected areas as national parks under the Expanded National Integrated Protected Areas Systems, which could contribute to increasing resiliency against climate change.

PLANNING PROCESS OF THE INDC

The Planning for the Philippine INDC is consistent with the Philippine Development Plan, the National Framework Strategy on Climate Change, the National Climate Change Action Plan and the National Disaster Risk Reduction and Management Plan. These plans and the INDC were developed through exhaustive, inclusive and participatory processes.

- Consultations on the preparation of the INDCs were organized and conducted with relevant government agencies including the Office of the President, the Senate and House of Representatives.
- Internationally accepted tools and methodologies were used by government agencies to identify possible mitigation options as input to the INDC.
- Consultations were also conducted with the civil society and the relevant business sectors.



MITIGATION

The Philippines intends to undertake GHG (CO₂e) emissions reduction of about 70% by 2030 relative to its BAU scenario of 2000-2030. Reduction of CO₂e emissions will come from energy, transport, waste, forestry and industry sectors. The mitigation contribution is conditioned on the extent of financial resources, including technology development & transfer, and capacity building, that will be made available to the Philippines.

In the identification and selection of mitigation options, national circumstances particularly the country's climate vulnerabilities and capacity to implement, were among the critical determinant factors.

Assumptions Used

- For the Baseline scenario, historical GDP from 2010 – 2014 and an annual average of 6.5% for 2015 – 2030
- Average annual population growth of 1.85%
- Loss-and-Damages from climate change and extreme events will not require substantial diversion of resources for rehabilitation and reconstruction thereby affecting development targets as well as mitigation commitments under this INDC.
- Identified co-benefits for mitigation options such as environmental and socio-economic benefits are realized.
- Climate projections were considered in the assessment of mitigation options

Methodology and Tools

- 2006 IPCC guidelines for the GHG inventory
- Tools used:
 - » 2006 IPCC software
 - » Agriculture and Land Use (ALU) Software for agriculture, forestry and other land uses
 - » Long Range Energy Alternative Planning (LEAP)
 - » Multi-criteria Analysis (MCA)

- Assessments conducted
 - » Integration of climate change considerations in the assessment such as analysis of climate projections' impacts on hydropower potential as an RE option for mitigation.
 - » Cost-benefit Analysis including the Marginal Abatement Cost Curve until 2030 for sectors with mitigation potential
 - » Multi-criteria Analysis for prioritizing mitigation actions

ADAPTATION

Recognizing the vulnerability of the country to the impacts of climate change, the State prioritizes adaptation and adopts it as the anchor strategy as espoused by the National Framework Strategy on Climate Change and subsequently elaborated in its National Climate Change Action Plan.

The Philippines strives to ensure that climate change adaptation and disaster risk reduction are mainstreamed and integrated into the country's plans and programs at all levels. The path towards a low emission development will require climate resilience and improved adaptive capacity. Financial resources, technology transfer and capacity building support for adaptation will ensure that the country's committed mitigation INDC will be attained. The following priority measures, among others, would need such identified implementation support:

1. Institutional and system strengthening for downscaling climate change models, climate scenario-building, climate monitoring and observation;
2. Roll-out of science-based climate/disaster risk and vulnerability assessment process as the basis for mainstreaming climate and disaster risks reduction in development plans, programs and projects;
3. Development of climate and disaster-resilient ecosystem(s);
4. Enhancement of climate and disaster-resilience of key sectors – agriculture, water and health;
5. Systematic transition to a climate and disaster-resilient social and economic growth; and
6. Research and development on climate change, extremes and impacts for improved risk assessment and management.



LOSS AND DAMAGE

The basic foundation for prioritizing adaptation measures is to ensure that loss and damage from climate change and extreme events are minimized to ensure achievement of national development targets through building capacities and enhancing resilience to avoid and mitigate losses in a sustainable manner.

The Philippine INDC assumes that *Loss-and-Damages* from climate change and extreme events will not require diversion of substantial resources for rehabilitation and reconstruction thereby adversely affecting the country's capacity to meet national development targets as well as mitigation commitments under this INDC.

MEANS OF IMPLEMENTATION

The Philippines is already undertaking initiatives to mainstream and institutionalize climate change adaptation and mitigation into the plans and programs of the government as reflected in government expenditures. The Philippine government has installed a system for tagging its expenditure for climate change adaptation and mitigation and is envisioned to use this system for its annual budgeting process starting 2015.

Highlighting the vulnerability of the country, public financing will prioritize adaptation to reduce vulnerability and risks to the community, at the same time providing a policy environment that will enable participation of the private sector to optimize mitigation opportunities and reduce business risks towards a climate smart development.

Full implementation of the Philippines' INDC requires support in the form of adequate, predictable and sustainable financing.

Likewise, implementation of both national development targets and mitigation initiatives necessitate the continuous development and strengthening of the country's capabilities and capacities. External assistance would be required to enable the Philippines to develop and adopt the most appropriate technologies to improve adaptive capacities

and resilience. Capacity and capability are needed in the field of climate and natural hazard modeling, science-based risk and vulnerability assessment as well as risk management measures including risk sharing and risk transfer mechanisms.

Technology transfers and innovations are needed to support adaptation and minimization of loss-and-damages as well as enhanced capacity for mitigation. Technical inputs and assistance are critical for certain sectors such as grid efficiency improvement, standard development for energy and water efficiency, cost-effective renewable energy, alternative or high-efficiency technology for conventional power generation, among others.

The Initial INDC submission of the Philippines is based on current available data. This INDC will be updated as more data become available. It is also conditional on the agreement to be reached by Parties. In finalizing and updating these INDCs, after the Paris agreement is adopted, the Philippines will be guided by best practices in participatory and consultative decision-making involving all concerned agencies, sectors, and stakeholders. These processes must be linked to a robust means of implementation, which include financial support, technology development and transfer, and capacity building.



City of Santa Rosa centralized composting & charcoal briquetting facilities

With an initial investment of PhP 2.5 million, the City of Santa Rosa established a centralized composting facility in 2009 to cater for the biodegradable wastes generated by the city.

Four bio-reactors (3 metric tonnage capacity per unit) were purchased and provided with technical assistance from the Department of Science and Technology. Based on the waste amount characterization study of 2014, the composting facility has contributed 12.17 per cent to the total waste diversion of the city. In 2015, a rotating drum with 1,500 kg. capacity was added in the facility which was donated by Sen. Cynthia Villar. The compost serves as soil conditioner and is made available for free to local farmers.

Two years later, in 2011, charcoal briquetting technology was adopted to further increase the waste diversion of the city. In partnership with Toyota Autoparts, Inc., the facility was established with the objective of improving the quality of water in the Laguna Lake by removing or harvesting the water hyacinths that are predominant in it. The hyacinths are processed into charcoal briquettes as an alternative source of fuel for household cooking.



Fig. 1. The 3 MT bioreactor with processed compost production.



Fig. 2. Loading of raw materials for processing.

Good Practice Projects



Fig. 3, 4, 5. Charcoal briquetting production.

Other organic wastes such as coconut husks, corn cobs or yard wastes are also used as raw materials for the charcoal briquette production.

In 2010, as the baseline year, the solid waste generation was at 66,097 MT and the GHG emissions were at 103,677.68 t CO².

Comparing it to the data gathered in 2015, the solid waste generation was 75,160 MT and the GHG emissions were at 91,665.24 t CO².

With the institutionalization of the centralized composting and charcoal briquetting facilities, a considerable reduction in GHG emissions — attributed to the effective management of solid waste — was calculated at 11.58 per cent. Thus, continuous operation would translate to further reduction in the city's greenhouse gas emissions.

Both facilities are located in a 4,200 sqm. government-owned property in Purok 5, Barangay Sinalhan, and are managed by the City Environment and Natural Resources Office.



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