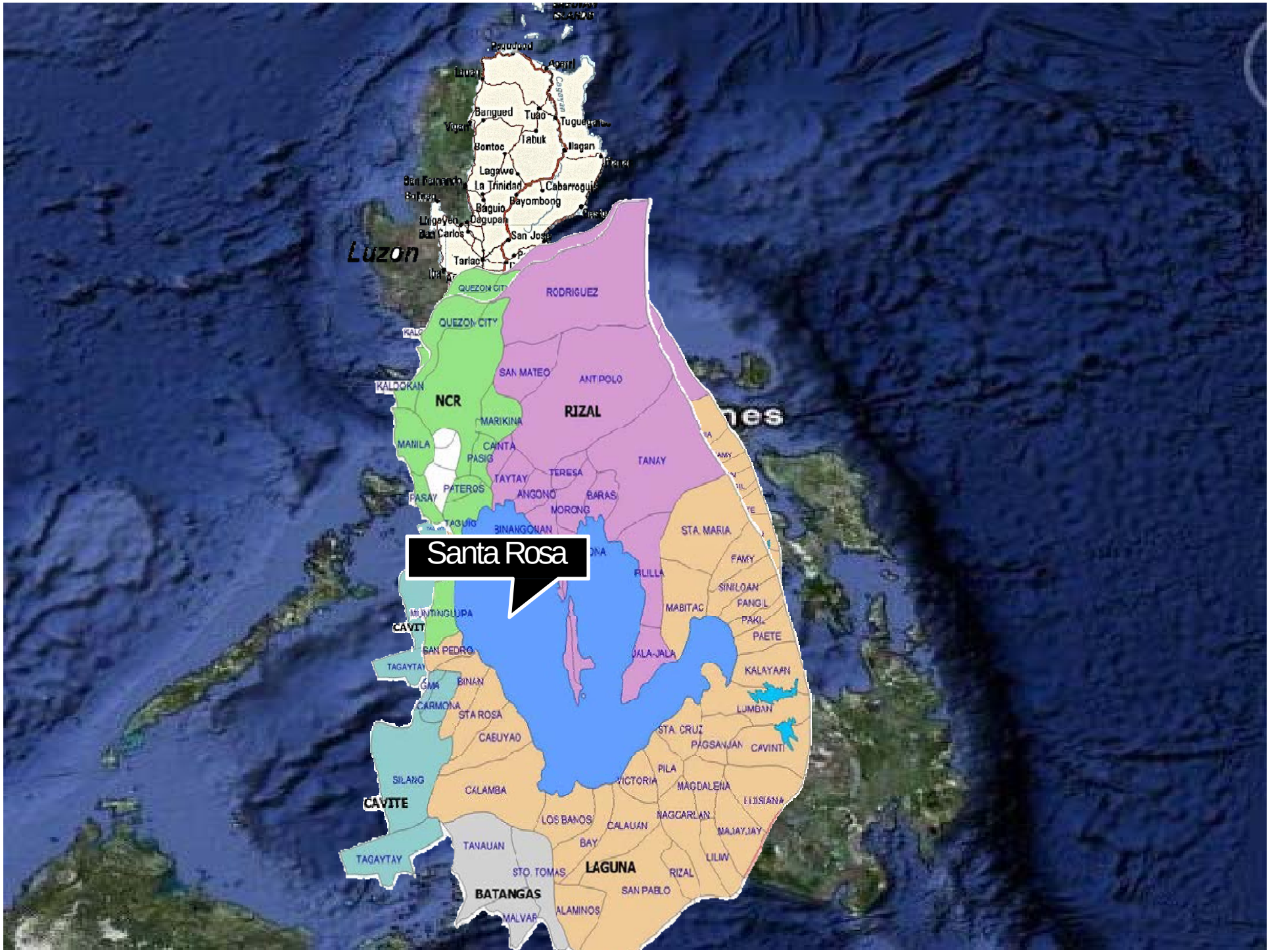
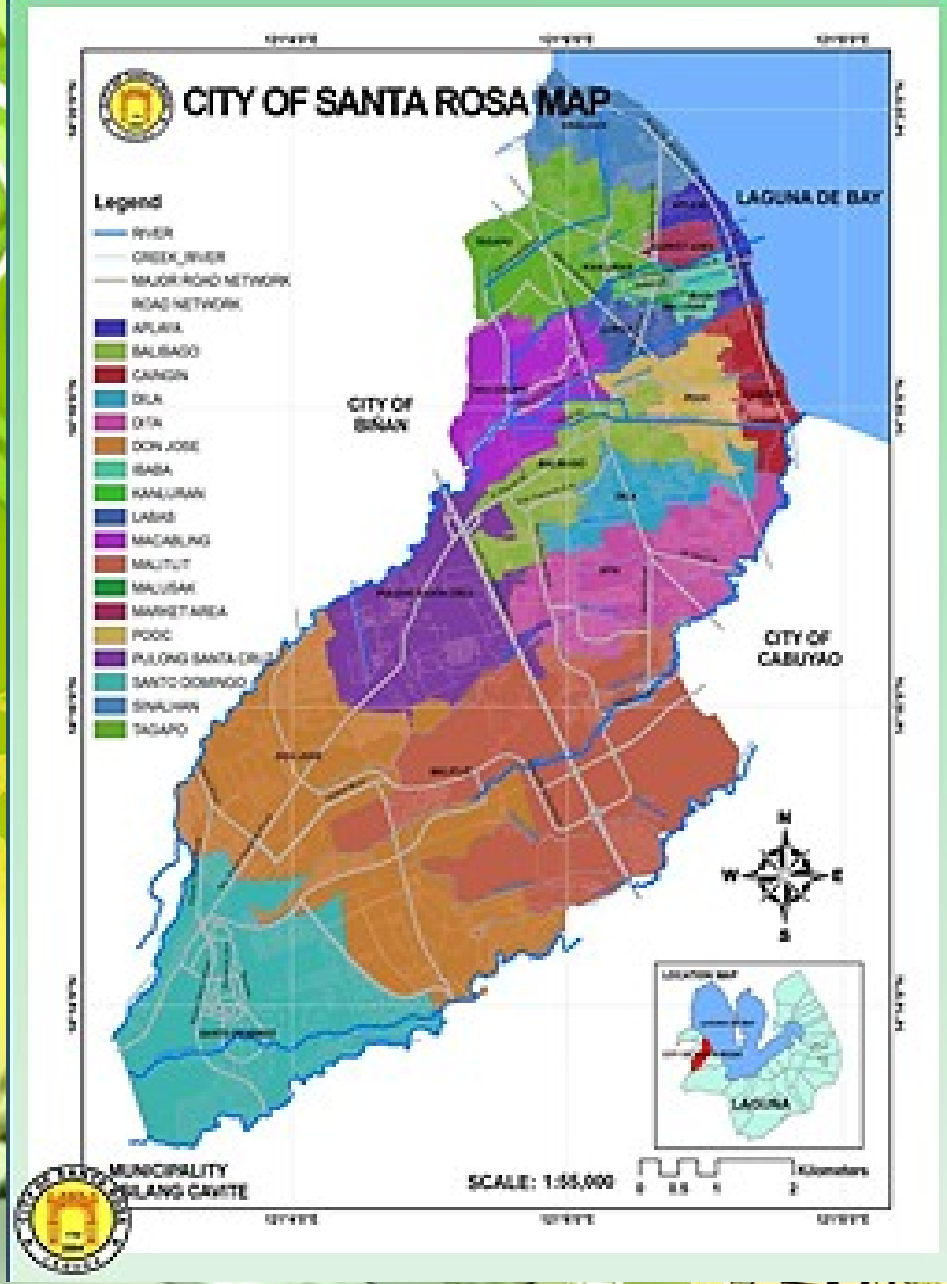
LOCAL LEVEL INITIATIVES and BEST PRACTICES in Mainstreaming Climate Change Mitigation and Adaptation

THE CASE OF THE CITY OF SANTA ROSA

Engr/EnP MARIA AMOR A. SALANDANAN
CITY ENVIRONMENT AND NATURAL RESOURCES OFFICE
Discovery Suites, Ortigas Center, Pasig City
31 January 2018

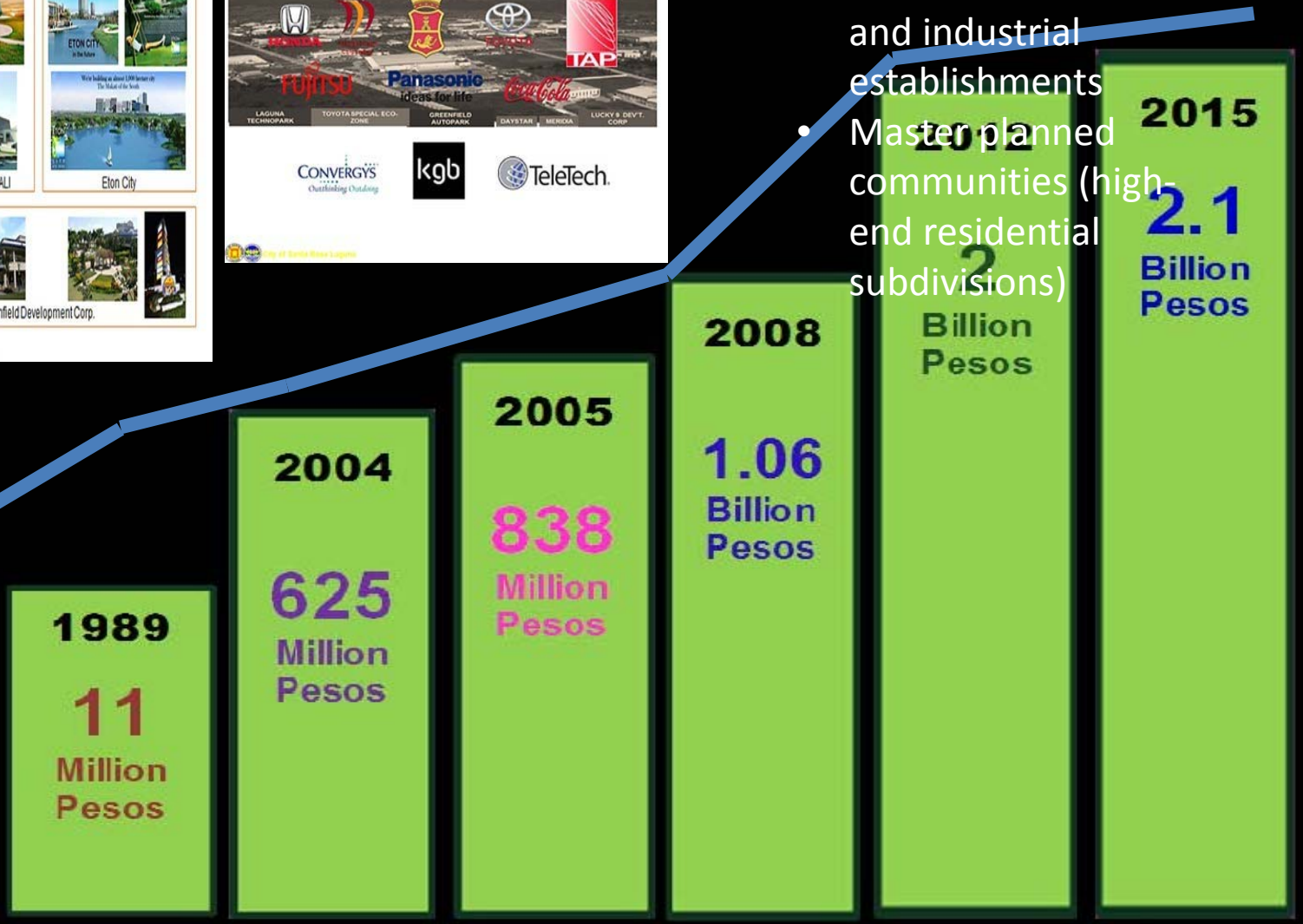

Luzon
Santa Rosa
NCR
RIZAL
CAVITE
LAGUNA
BATANGAS
QUEZON CITY
RODRIGUEZ
SAN MATEO
ANTIPOLO
MARIKINA
MANILA
CAINTA
PASIG
TAYTAY
TERESA
TANAY
PATEROS
TAGUIG
BINANGONAN
STA MARIA
FAMY
SILANGAN
MABITAC
PAETE
KALAYAAN
LUMBAN
STA CRUZ
PAGSANJAN
CAVINTI
PILA
VICTORIA
MAGDALENA
LOS BANOS
CALAUAN
NAGCARLAN
BAY
LILIW
RIZAL
SAN PABLO
STO TOMAS
TANAUAN
TAGAYTAY
CALAMBA
SILANG
CARMONA
STA ROSA
CABUYAO
SAN PEDRO
BINAN
KALOOKAN
MALVAR

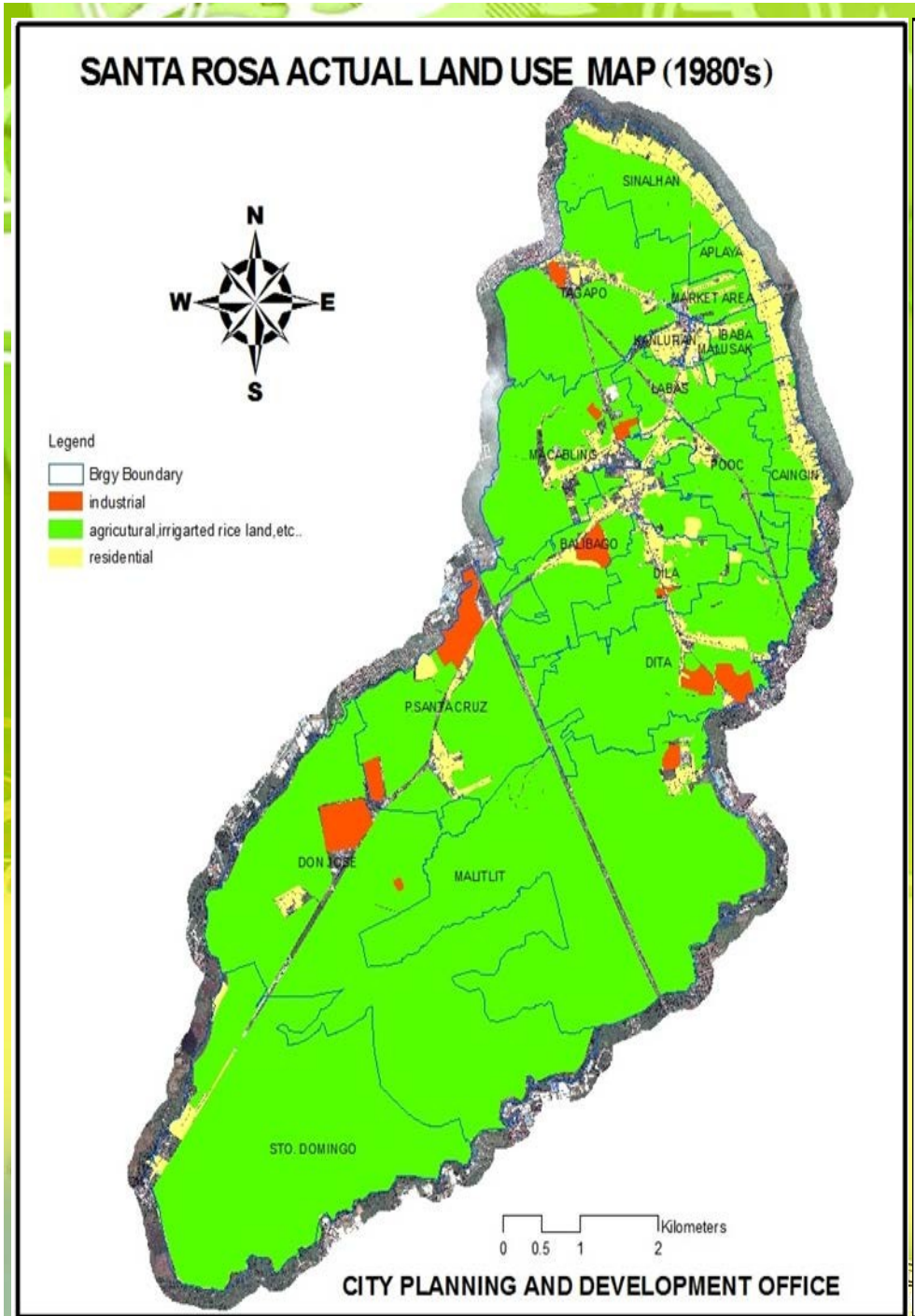


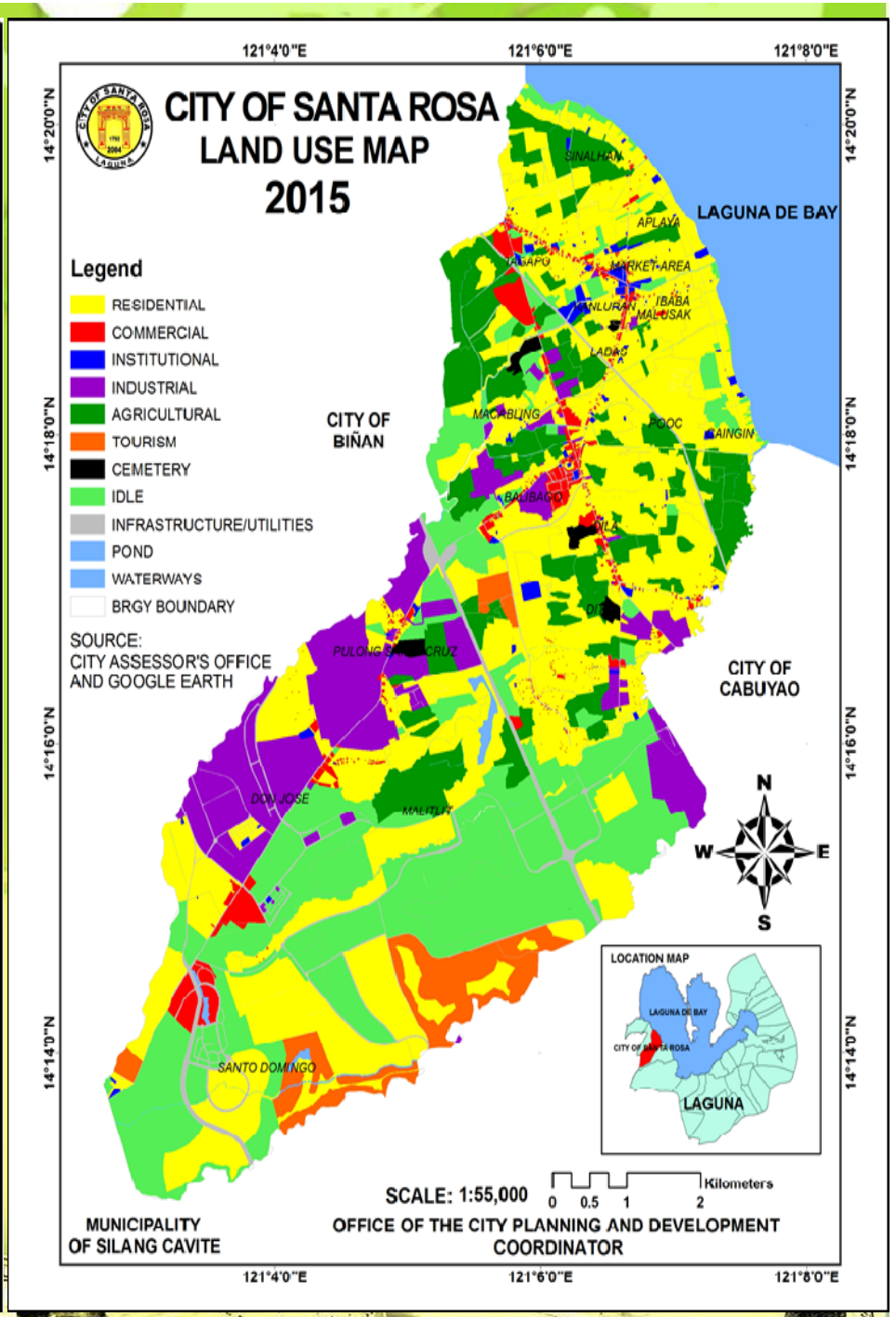
GEOGRAPHICAL PROFILE

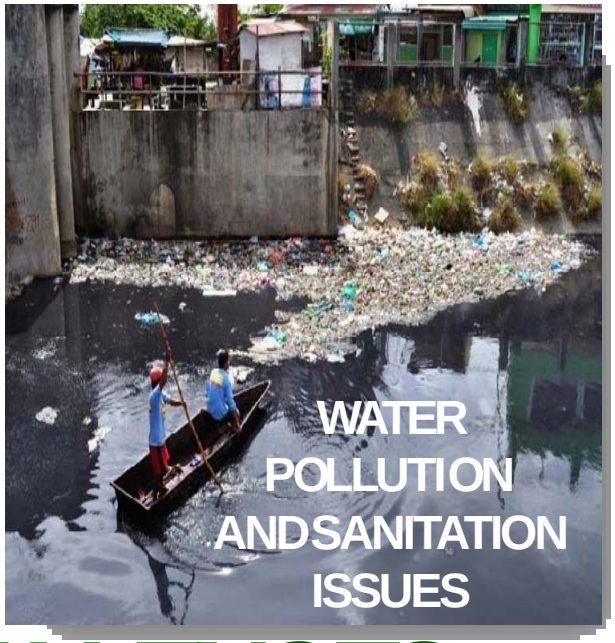
- **Land Area**: 5,549 Hectares
- It covers 3.2% of the total land area of the Province of Laguna.
- It controls 37% of the Santa Rosa Watershed
- Population 2015 : 297,800 (NSO)
- **Accessed via South Luzon Expressway (SLEX):**
  - Mamplasan Exit
  - Santa Rosa Exit
  - Eton-Greenfield Exit
- **Accessibility:**
  - South Luzon Expressway
  - Manila South Road
  - Philippine National Railway
- **Political Subdivision:**
  - 18 Barangays
  - 1st District of Laguna

- About 7000 registered business commercial and industrial establishments
- Master planned communities (high-end residential subdivisions)

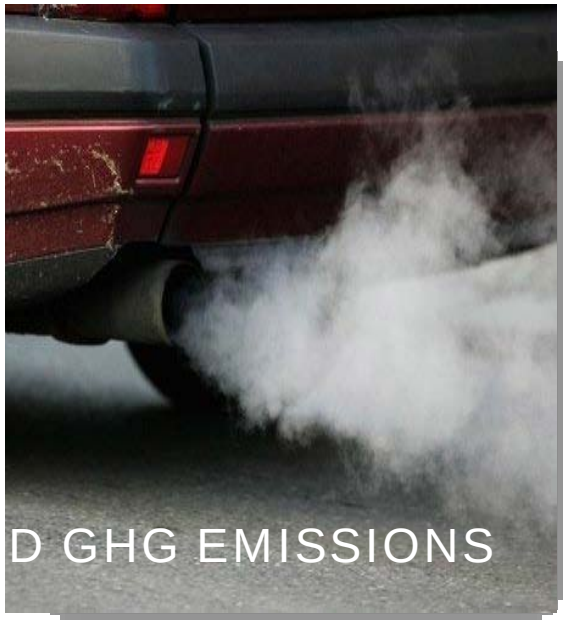


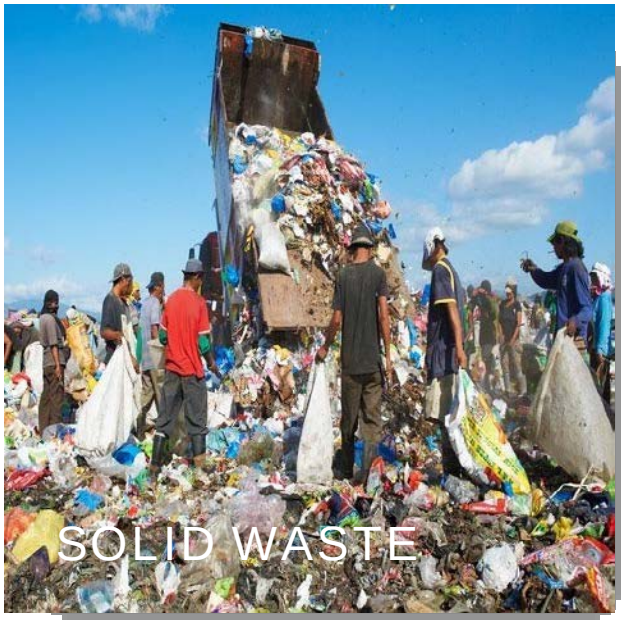

SANTA ROSA ACTUAL LAND USE MAP (1980's)
N
W
E
S
Legend
Brgy Boundary
industrial
agricutural,irrigarted rice land,etc..
residential
SINALHAN
APLAYA
TAGAPO
MARKET AREA
IBABA
MALUSAK
LABAS
MACABLING
POOC
CAINGIN
BALIBAGO
DILA
DITA
P.SANTA CRUZ
DON JOSE
MALITLIT
STO. DOMINGO
0 0.5 1 2
Kilometers
CITY PLANNING AND DEVELOPMENT OFFICE


121°4'0"E
121°6'0"E
121°8'0"E
14°20'0"N
14°18'0"N
14°16'0"N
14°14'0"N
CITY OF SANTA ROSA
LAND USE MAP
2015
Legend
RESIDENTIAL
COMMERCIAL
INSTITUTIONAL
INDUSTRIAL
AGRICULTURAL
TOURISM
CEMETERY
IDLE
INFRASTRUCTURE/UTILITIES
POND
WATERWAYS
BRGY BOUNDARY
SOURCE:
CITY ASSESSOR'S OFFICE
AND GOOGLE EARTH
LAGUNA DE BAY
CITY OF BIÑAN
CITY OF CABUYAO
SINALHAN
APLAYA
TAGAPO
MARKET AREA
IBABA
MALUSAK
LABAS
MACABLING
POOC
CAINGIN
BALIBAGO
DILA
DITA
PULONG SANTA CRUZ
DON JOSE
MALITLIT
SANTO DOMINGO
N
W
E
S
LOCATION MAP
LAGUNA DE BAY
CITY OF SANTA ROSA
LAGUNA
SCALE: 1:55,000
0 0.5 1 2
Kilometers
MUNICIPALITY
OF SILANG CAVITE
OFFICE OF THE CITY PLANNING AND DEVELOPMENT
COORDINATOR



DEVELOPMENTAL CHALLENGES





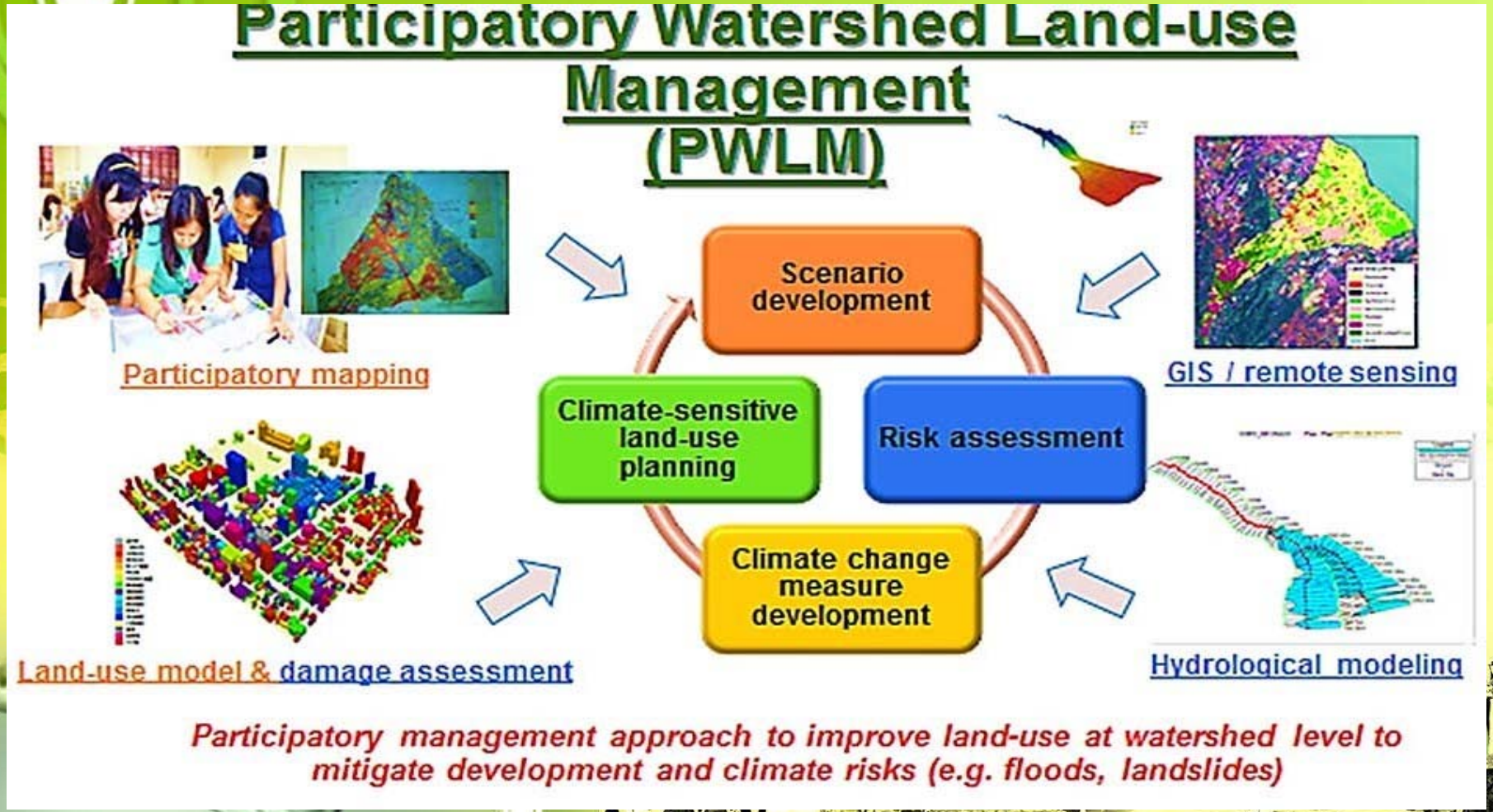
THE NEED FOR A COLLABORATIVE ACTION...ADDRESSING ENVIRONMENTAL ISSUES ON A SUB-WATERSHED LEVEL

MEMORANDUM OF AGREEMENT SIGNING
December 2, 2015

SANTA ROSA INTEGRATED WATERSHED MANAGEMENT COUNCIL

- Election and Oath-taking of Officers and Members of the Board
- 3-year Action Plan
- People's Survival Fund Proposal

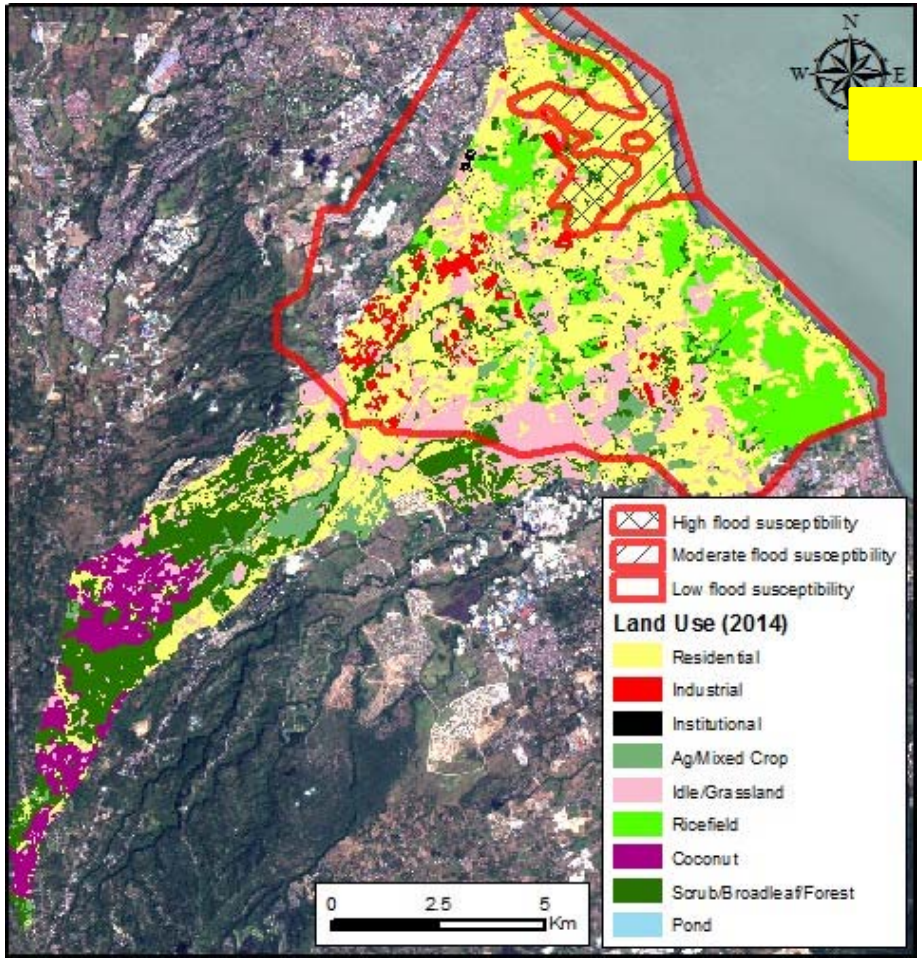
‘LOW-CARBON, CLIMATE-RESILIENT LOCAL GOVERNMENT UNITS IN DEVELOPING COUNTRIES’ **(INSTITUTE OF GLOBAL ENVIRONMENTAL STRATEGIES, 2014)**



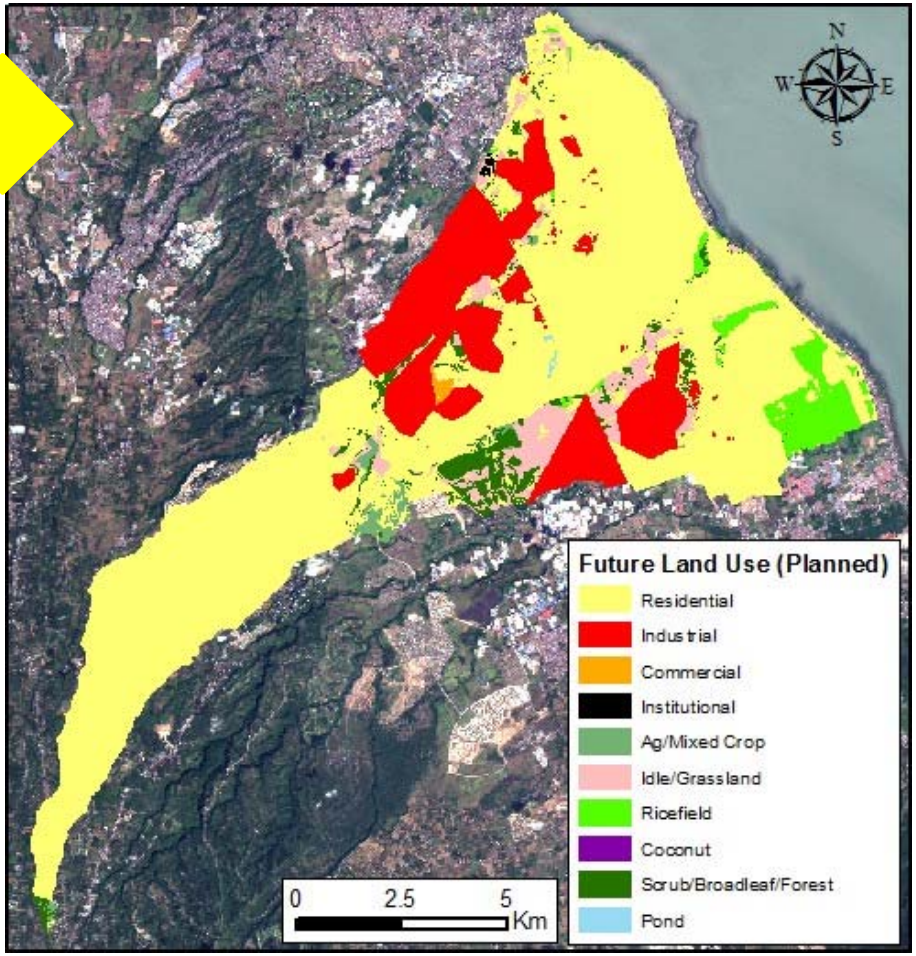
Risk assessment

More development

Current Land Use (2014)



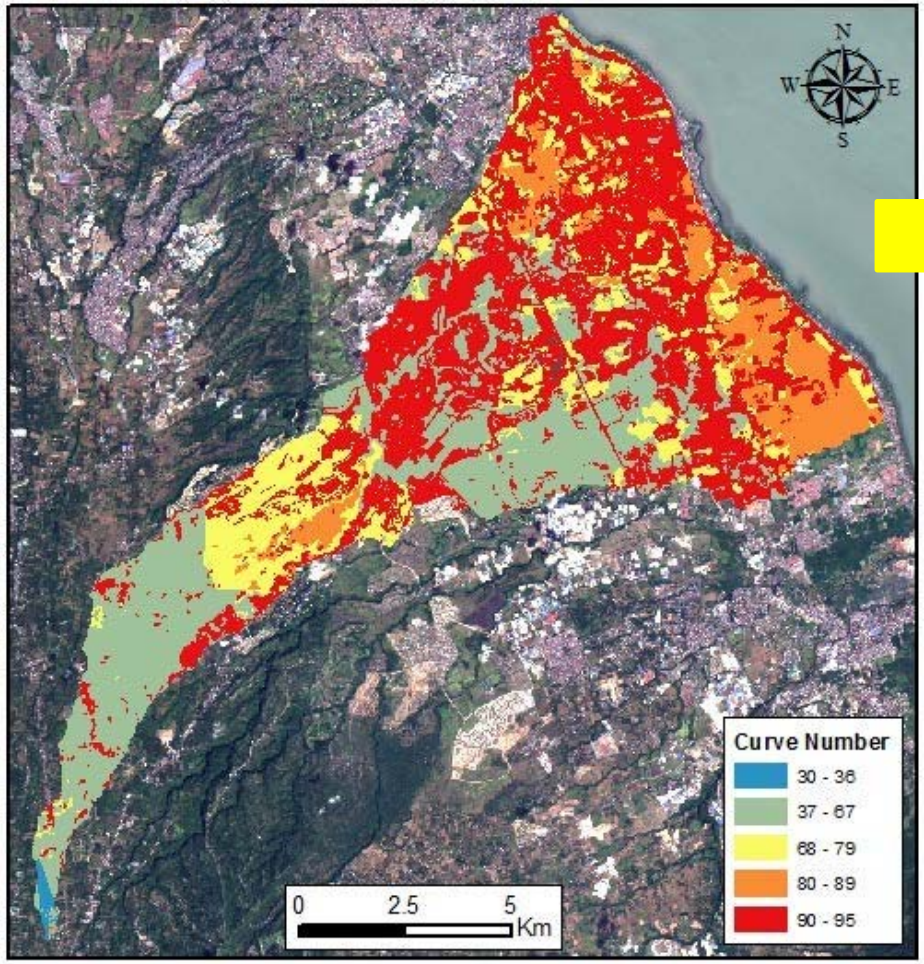
Future Land Use Plan (BAU)*



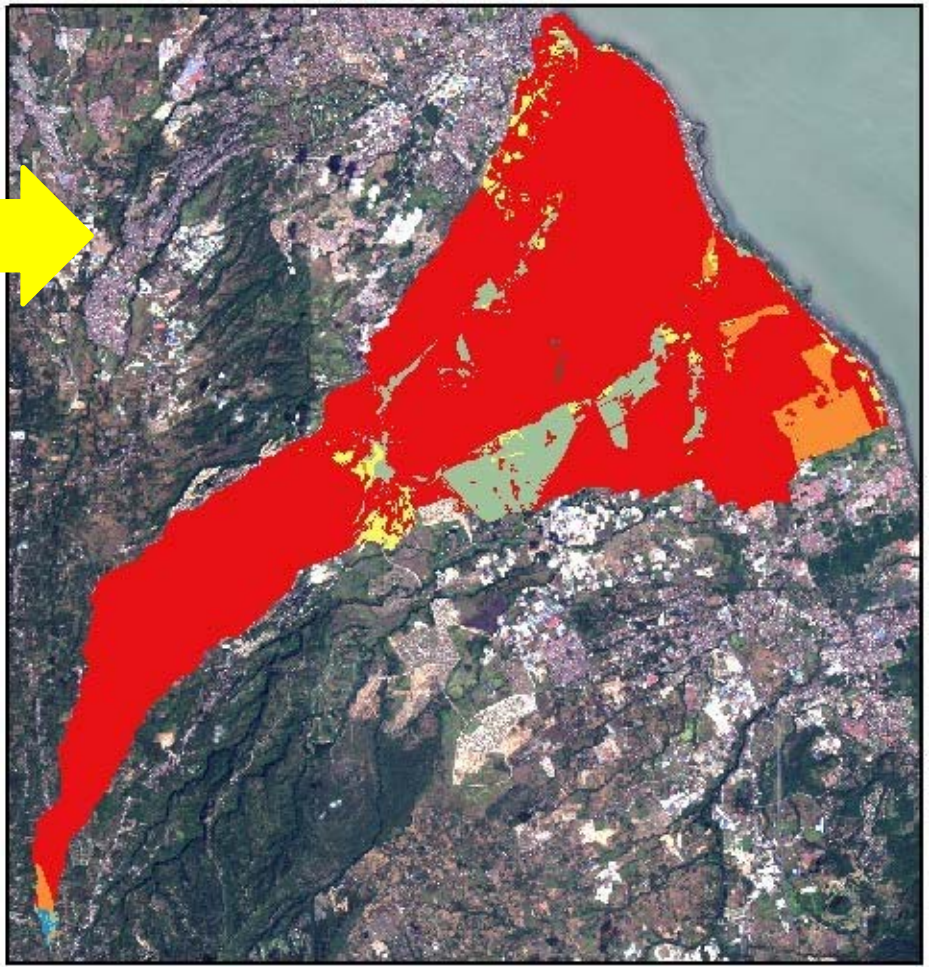
*Future land use plan map based on the results of a participatory land use mapping session with representatives from four local government units (LGUs)

More flooding

Current curve number (2014)



Future curve number (2025)



Higher Curve Number values indicate higher stormwater runoff. Values are based on land use and soil type. Curve Numbers are used for flood hazard modeling.

Step 3: Countermeasure development

Through participatory rapid appraisal activities e.g., key informant and focus group discussions

STEP 4: Climate-Sensitive land- Use

- Mainstreaming of Climate Change Mitigation and Adaptation in the LGUs Comprehensive Land-Use Plan
- Harmonization of land-use within the subwatershed for an effective integration of climate change responses
- Formulation of the Local Climate Change Action Plan

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UPDATED THE COMPREHENSIVE LAND USE PLAN

- Policies and Strategies with climate change measure
- Regulation of future development in high risk areas for certain types of land use and physical structure
- Develop and strengthen building design standards
- Adoption and application of green technology in government and private sector building
- Formulate and implement a sustainable watershed development plan that will address flooding and protection of the water recharge areas through an integrated approach in coordination with the neighboring LGUs

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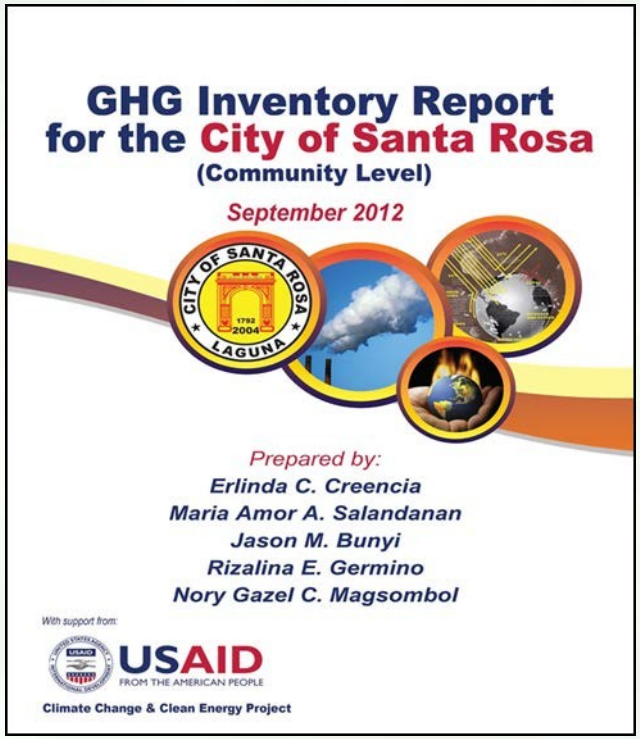
GREENHOUSE GAS EMISSION INVENTORY



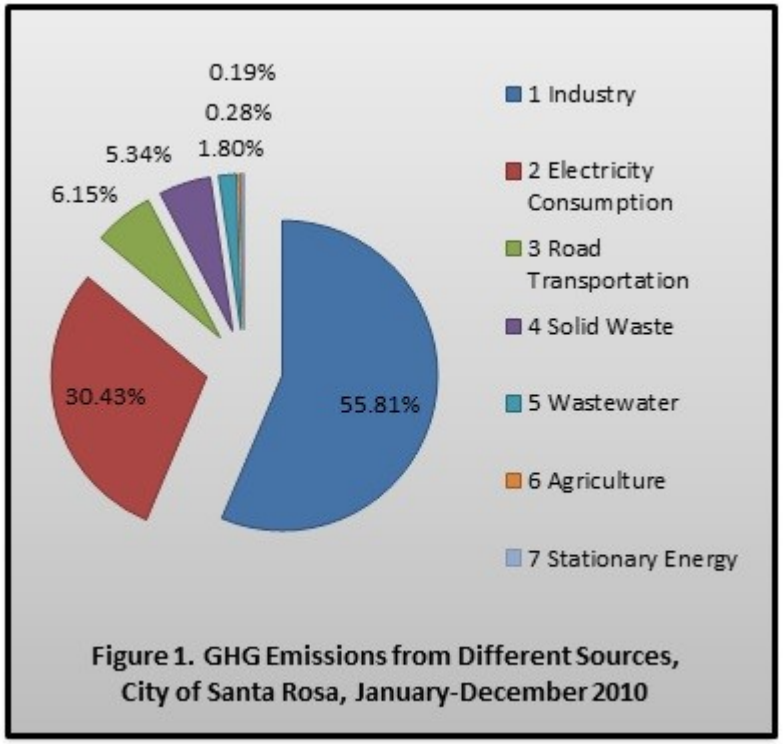


Figure 1. GHG Emissions from Different Sources, City of Santa Rosa, January-December 2010

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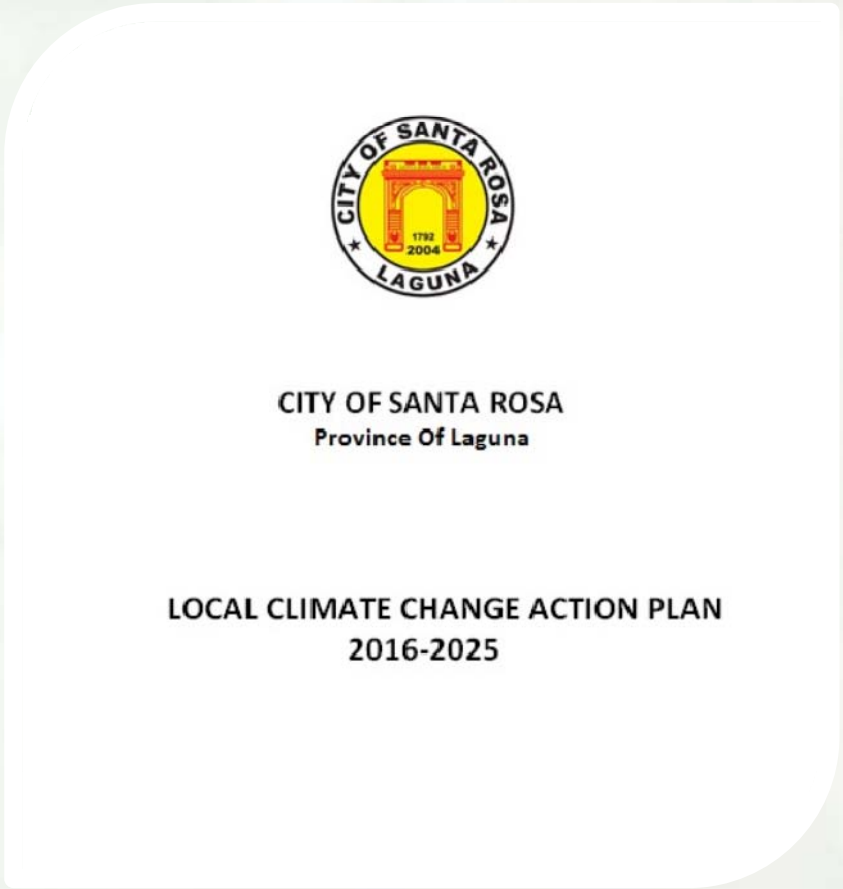
LOCAL CLIMATE CHANGE ACTION PLAN



To ensure its implementation, the LGUs are mandated to :

- Integrated in the 10-year City Development Programs (CDP)
- Programs and Projects should be included in the LGUs Annual Investment Program
- Climate Change Expenditure Tagging
- Submitted for funding in the annual budget

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2017 ANNUAL INVESTMENT PROGRAM

CY 2017 Annual Investment Program (AIP)

Details of Program/Project/Activity by Sector

As of January 25, 2017

City: Santa Rosa

Province: Laguna

☐ No Climate Change Expenditure (Please tick the box if your LGU does not have any climate change expenditure

AIP Reference Code	PROGRAM / PROJECT / ACTIVITY DESCRIPTION	IMPLEMENTING OFFICE / AGENCY	SCHEDULE OF IMPLEMENTATION		EXPECTED OUTPUTS	SOURCE OF FUND	AMOUNT				AMOUNT of Climate Change expenditure (in Thousand Pesos)		
			START DATE	COMPLETION DATE			PS	MOOE	CO	TOTAL	Climate Change Adaptation	Climate Change Mitigation	CC Typology Code
8000-01	POLLUTION CONTROL PROGRAM	City ENRO	1/1/2017	12/31/2017	Decrease in the amount/volume of waste disposed in the landfill by 50%, improved air and water quality	General Fund	2,371,774.571	756,414.286	11,000,000.000	14,128,188.86			
8000-01-01	Solid Waste Management	City ENRO	1/1/2017	12/31/2017	Decrease in the amount/volume of waste disposed in the landfill by 50%	General Fund	790,591.52	252,138.10	10,000,000.00	11,042,729.62			
8000-01-01-01	Operation of Centralized Composting Facility	City ENRO	1/1/2017	12/31/2017	500 kgs of compost produced per month	General Fund	65,882.63	21,011.51	0.00	86,894.13		86,894.13	M324-04
8000-01-01-02	Operation of Charcoal Briquetting Facility	City ENRO	1/1/2017	12/31/2017	150 kgs of charcoal briquettes produced per month	General Fund	65,882.63	21,011.51	0.00	86,894.13	86,894.13		M314-08
8000-01-01-03	Installation of Materials Recovery Facility (MRF) in barangays and turned-over subdivisions	City ENRO / City Engineering	1/1/2017	12/31/2017	construction of at least ten (10) MRFs in strategic areas and turned-over subdivisions	General Fund	65,882.63	21,011.51	0.00	86,894.13		86,894.13	M324-04

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OTHER RELATED INITIATIVES

project clean

AIR LAND WATER ARE YOURS to SAVE

ALWAYS

ONE CITY, ONE SOLUTION

An Environmental Protection Program of the
City Government of Santa Rosa, Laguna

• TREE PLANTING ACTIVITIES AND REGULATION OF TREE CUTTING ACTIVITIES

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Centralized Composting Facility

- Established in 2009
- The facility has 4 Bioreactor units
  - 3 units of 3 MT capacity
  - 1 unit of 1.5 MT capacity donated by Sen. Cynthia Villar

- Aims to reduce GHG emissions from organic wastes and has contributed 12.17% (WACS 2014) to the total organic waste diversion of the City.
- The compost serve as soil conditioner and available for free to local farmers in the City.

CHARCOAL BRIQUETTING PROGRAM

- Established in 2011 to further enhance the City's organic waste diversion
- All equipment provided by Toyota Autoparts, Inc.
- Used as alternative source of fuel for cooking
- Sold at PhP 20.00/pack

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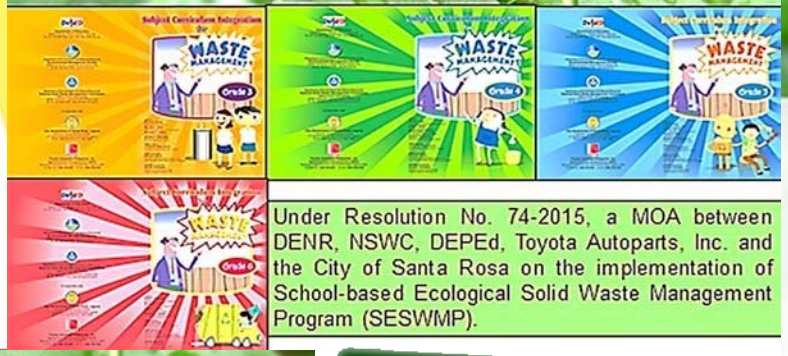
Integration of SWM into the school curriculum for Grades 3, 4, 5 & 6



Under Resolution No. 74-2015, a MOA between DENR, NSWC, DEPEd, Toyota Autoparts, Inc. and the City of Santa Rosa on the implementation of School-based Ecological Solid Waste Management Program (SESWMP).

MONTHLY MULTI-SECTORAL CLEAN UP ACTIVITIES

In conjunction with the "Bayan Ko, Linis Ko" Campaign of DENR

MATERIALS RECOVERY FACILITIES

BARANGAYS WITH EXISTING MRF's:

1. Balibago
2. Caingin
3. Don Jose
4. Labas
5. Pooc
6. Pulong Santa Cruz (operational)
7. Sinalhan (operational)

MRFs will be given to the remaining 11 barangays with an allocation of PhP 300k for each barangay by 2017.

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3-Bin Waste System

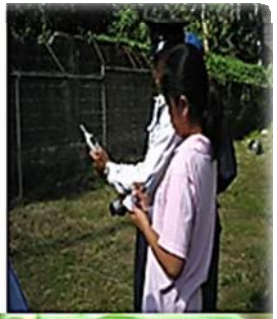
The GIZ-Nexus Project

- proposed low-cost, medium-rise sustainable housing for the informal settlers of Sitio Masiit, Brgy. Labas incorporating waste-to-energy, urban agriculture and vacuum sewer technologies. This project was conceptualized in 2013 and still ongoing at its second phase for the period of 2016 to 2019.

of Business establishments to:

- **Environmental Compliance Certificate**
- **Certificate of Non-Coverage**
- **LLDA Clearance**

- To regulate pollution sources



INFORMATION AND EDUCATION CAMPAIGNS

Catering to HOAs, schools, barangays, companies, and other organizations

ADVOCACY CAMPAIGNS

- **SILAKBO (Sikad-LAkad-takBO)**
  - An annual fun run event in commemorating the EARTH WEEK CELEBRATION. Now on its 8th year.
  - For the benefit of the SAVE SILANG-SANTA ROSA RIVER (S3R2) Foundation, a Non-government organization that is multi-sectoral in composition, formed in September 1997 to address the Silang-Santa Rosa River issues through its various programs.

Participation in the

EARTH HOUR CITY CHALLENGE

Recognized as the NATIONAL EARTH HOUR CAPITAL of the Philippines for the year 2016

URBAN AGRICULTURE DEMO FARM

The City of Santa Rosa realizes that the effects of Climate Change will threaten food security.

The program on Urban Agriculture will further counterbalance this imminent threat by introducing this novel technology to its stakeholders.

Land Developers GuideBook for the Santa Rosa Watershed

Reference Guide for Stormwater Management 2011

CITY OF SANTA ROSA ENVIRONMENT CODE

ENVIRONMENTALLY-SUSTAINABLE CITY

Republic of the Philippines
Department of Environment and Natural Resources
Central Office, Quezon City

This

Certificate of Appreciation

is presented to

STA ROSA CITY, LAGUNA
Region IV-A

For the city's exemplary performance on environmental governance during my watch as DENR Secretary;

For putting in place sustainable practices to achieve clean air, clean water and clean land; and

For promoting the development of Environmentally Sustainable Cities (ESC)

Given this 28th day of June 2016, Quezon City.

Ramon J.P. Paje
Secretary

ENVIRONMENTAL COMPLIANCE AUDIT AWARD (PLATIUM AWARD)

Republic of the Philippines
DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT
Region IV - A (CALABARZON)

This

PLAQUE OF RECOGNITION

is hereby awarded to

City of SANTA ROSA
Province of Laguna

for its outstanding performance and highly commendable practices in Solid Waste Management as one of the various tenets of governance that qualified the cited City for this

PLATINUM AWARD
for
ENVIRONMENTAL COMPLIANCE AUDIT (ECA)

The City is among the most complying and cooperative local government units in the region in terms of adhering to the Supreme Court Mandamus to clean and rehabilitate the Manila Bay and its watershed especially on the principles of R.A. 9003 and in delivering unfaltering service to their constituents.

Given this 18th day of December 2015 coincident to the celebration of the "Manila Bay Day" at the Development Academy of the Philippines, Tagaytay City, Cavite.

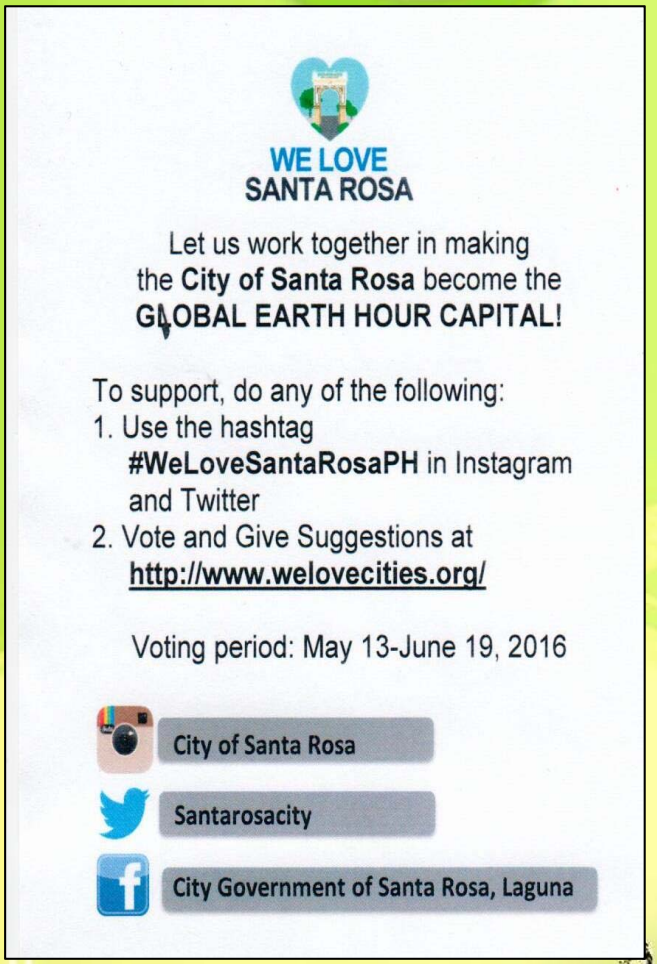
RENATO L. BRION, CESO III
Regional Director

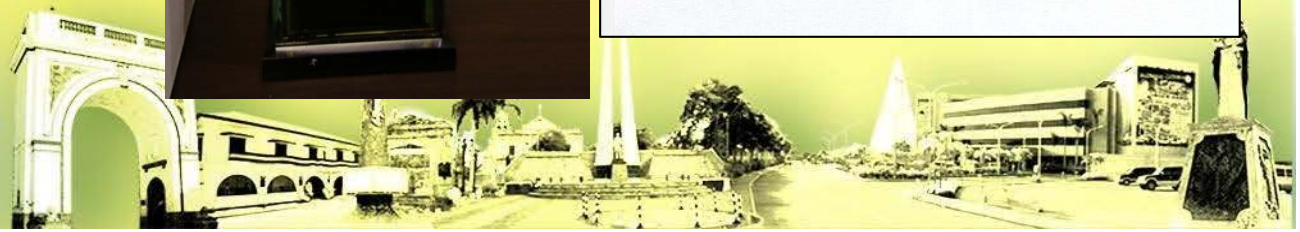
DILG

2016 NATIONAL EARTH HOUR CAPITAL

EARTH HOUR CITY CHALLENGE

Finalist (among the 18 cities) (selected from 21 participating countries and 126 cities around the world) GLOBAL EARTH HOUR CAPITAL





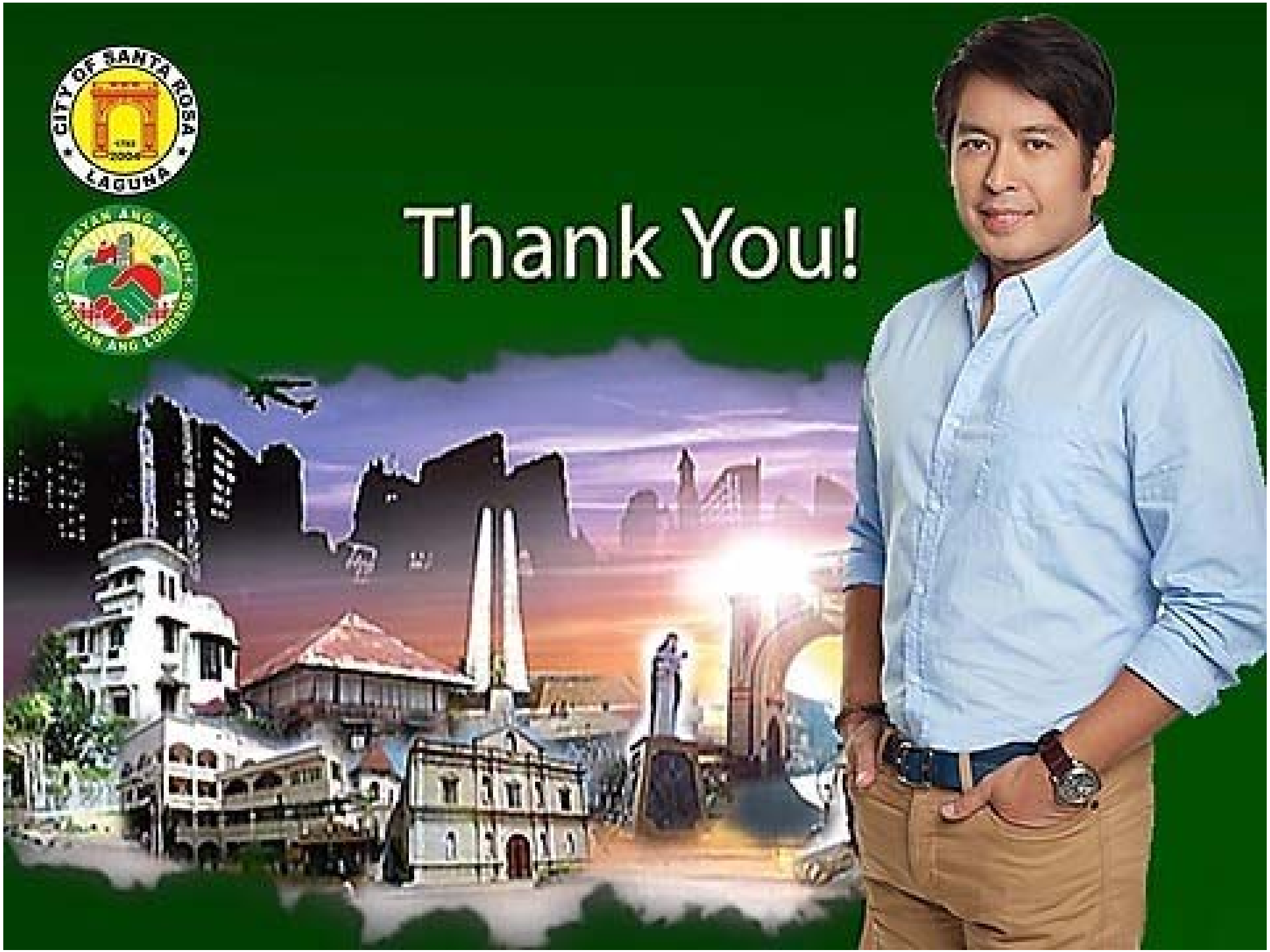
Other Pipeline/Proposed Projects for CCA/CCM

- Formulation of the City Green Building Code
- Small Water Impounding System (SWIS) for flood control (includes construction of detention ponds in strategic locations, in Brgy. Sto. Domingo (upstream), Macabling
  Midstream and Tagapo (downstream) to improve waterways)
  - Santa Rosa People's Eco-Tourism Park
  - Esplanade (Bike Lanes)

PARTNER ORGANIZATIONS AND INSTITUTIONS

- ICLEI-Local Governments for Sustainability
- Institute for Global Environmental Strategies
- German International Cooperation Agency (GIZ)
- United States Agency for International Development
- French Development Agency
- WWF Philippines
- Adelphi
- UN- Habitat
- UNESCAP
- Clean Air Asia
- World Bank
- DILG, DENR, LLDA….

- Global Covenant of Mayors (Compact of Mayors)
- Carbon Climate Registry
- Carbon Disclosure Program (CDP)


CITY OF SANTA ROSA
LAGUNA
Thank You!