



## Environmental Commitments to KITAKYUSHU INITIATIVE NETWORK




**THE VISION**  
**"The Botanical Garden City  
a healthy city and the  
springboard for regional progress"**

*The City of San Fernando wants to be  
known as an environment-conscious place.*

**A CITY THAT EVERYBODY WANTS TO LIVE AND WORK IN**

## City of San Fernando



**Became Component City in 1998**

**Land Area :** 10, 526 hectares

**Population:** 114,813 CPH 2007  
(plus 50 - 80,000 daily)

**No. of Barangays (villages):** 59

**Urban Land Area:** 2, 919 ha.  
(24 barangays) CPH 85,326)

**Rural Land Area :** 7, 606 ha.  
(35 barangays) CPH 31,431)

### Engineered Sanitary Landfill

- 2 cells utilizing clay and High Density Polyethylene (HDPE) liners
- established in a 10.6 hectares area
- electronic weigh bridge
- Leachate Treatment Pond (LTP)
- Leachate collection system
- Design-Built-Operate Scheme (DBO)
- Project cost: Php 163 million + acquired to the World Bank (payable in 25 years)



**CLAY LINER TECHNOLOGY**

### Other Component Projects

- segregated collection of biodegradable materials (city, barangays and market)
- segregated collection of coconut shells generated from the market
- shredding of biodegradable materials
- vermicomposting project with Department of Agriculture and Bureau of Soil and Water Management (construction of vermi beds started)
- proper waste handling and transport lecture for Sanitary Technicians
- segregation and storage of hazardous wastes (BFLs)

### Community-based SWM

- ❖ No Segregation, No Collection Scheme (Segregated Collection)
- ❖ Door-to-Door personalized collection: at least Php 25.00 (\$US 0.50) monthly maintenance fee per households
- ❖ 700.00/day subsidy from City Government
- ❖ Trainings and seminars (people empowerment)
- ❖ Community-based composting and Carbonized Rice Hull production




- Establishment of 2 cluster Materials Recovery Facility (MRF) servicing 7 barangays
- 2 other barangays manage their own MRFs
- 2 barangays agreed to establish local junkshops for recyclables
- Barangay Lingsat adjudged as Model Eco-Waste Barangay in the Philippines, 2007



### School-based ESWM



- Training workshops on Recycling conducted
- Novelty/ Souvenir items from wastes
- School MRFs
- Organic fertilizers from various composting methods

### Office-based ESWM



### Policies/ Guidelines

- ISO 9001:2008 and 14001:2004 Accreditation (first LGU in the Philippines)
- Implementation of 5 S Program (thru Officer Order 04-2008, designation as City 5 S Coordinator)
- Updating of City 10-Year Solid Waste Management Plan
- City Ordinance No. 2003-007 An Ordinance Providing for a Comprehensive Solid Waste Management in the City of San Fernando
- City Ordinance No. 2006-013 An Ordinance Enacting the Environment Code of the City of San Fernando
- City Ordinance No. 2006-011 An Ordinance Enacting the Sanitation Code of the City of San Fernando
- Barangay Ordinances establishing Integrated Solid Waste Management Program

### Barangay-based waste disposal, CY 2009

MONTH	BARANGAY (waste in metric tons)								TOTAL
	Bay-JV	Calamba-n	Dallagan-yon	Lingaset	Poro	Santago	Sevilla	Imagat	
Jan	48.395	96.530	28.465	176.375	135.300	31.240	104.125	44.845	665.275
Feb	39.670	85.512	27.685	154.27	116.990	26.270	88.545	39.605	578.547
Mar	56.990	92.885	31.845	173.045	136.265	29.060	101.825	48.370	670.285
Apr	50.685	116.515	39.740	199.655	161.840	35.700	127.445	55.450	787.030
May	42.405	118.610	45.975	212.905	149.353	42.215	130.29	56.933	798.686
Jun	52.280	114.449	42.935	195.995	139.790	40.170	120.545	57.010	763.174
Jul	64.990	117.210	32.975	201.39	127.140	34.435	126.485	58.385	763.010
Aug									
Sept	56.720	109.980	27.950	187.01	117.895	30.065	117.915	40.675	688.210
Oct	64.840	122.767	33.785	216.455	122.160	41.285	124.265	68.658	794.215
Nov	56.960	87.880	25.110	154.92	87.255	22.405	91.450	42.210	568.190
Dec	54.790	92.120	22.880	163.26	93.510	31.670	87.715	42.120	588.065
<b>TOTAL</b>	<b>588.725</b>	<b>1154.458</b>	<b>359.345</b>	<b>2035.28</b>	<b>1387.498</b>	<b>364.515</b>	<b>1220.605</b>	<b>554.261</b>	<b>7664.687</b>

### Waste Disposal, CY 2009 (January to December)

MONTH	WASTE DISPOSAL				
	TOTAL WASTE DISPOSAL	DAILY AVE.	WASTE DIVERTED (mt)	DIVERSION RATE (%)	NET WASTE DISPOSAL
Jan-09	1,226.84	39.575	23.701	1.930	1,203.14
Feb-09	1,075.10	38.396	22.167	2.060	1,052.92
Mar-09	1,249.46	40.305	26.550	2.120	1,222.91
Apr-09	1,420.62	47.354	31.456	2.214	1,389.31
May-08	1,466.40	47.303	72.201	4.920	1,394.20
Jun-09	1,423.69	47.456	36.944	2.595	1,386.74
Jul-09	1,399.63	45.149	53.372	3.813	1,346.26
Aug-09	1,334.00	43.032	58.068	4.353	1,275.93
Sep-09	1,303.27	43.442	71.500	5.486	1,231.77
Oct-09	1,424.00	45.935	64.066	4.499	1,359.93
Nov-09	1,122.00	37.400	46.869	4.178	1,074.97
Dec-09	1,185.04	38.227	85.774	7.238	1,099.27
<b>TOTAL</b>	<b>14,445.11</b>		<b>592.668</b>	<b>3.784</b>	<b>15,037.27</b>

### Significance/ Impacts/ Lessons Learned

- Improved solid waste management system
- Monthly waste recovery increased from 2 to 4 percent
- 20 percent city waste diversion to increase up to 80-90 percent thru a centralized MRF
- Clean Environment; Sanitary disposal
- Waste Analysis and Characterization Study in 2008 (57% biodegradable; 3.58% recyclables; 39% residuals; 0.02% special wastes)
- collaboration with NGOs, NGAs, POs and other stakeholders brought success in the implementation of the project
- heightened interest and encouragement of people to participate in the SWM campaigns of the City of San Fernando
- the holistic approach that made possible the institutionalization of City SWM ordinance, environmental code and other ordinances related to SWM ensures logistical support even if there will be changes in leadership in the City

### **Linkages/ Networking**

- › Kitakyushu Initiative Network (KIN)
- › CITYNET partnership with Phnom Penh, Cambodia on the promotion of community-based ESWM
- › Integrated Support for Sustainable Sanitation (ISSUE) 2
- › Center for Advanced Philippines Studies (CAPS)
- › Solid Waste Management Association of the Philippines (SWAPP)
- › Department of Environment and Natural Resources Office (DENR)
- › Department of Agriculture-Bureau of Soils and Water Management (DA-BSWM)

### **New Urban Environmental Activities/ Projects**

- › Centralized MRF cum Composting Facility at SLF
- › City Wastewater Treatment Facility
- › Lime Stabilization Treatment of Septage
- › Ecotank Project (with CITYNET and UNITAR)
- › Sidewalk Project
- › Fuel Efficiency Project
- › Establishment of Marine Protected Area (MPAs)