

CityVoices



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Welcome from the Mayor of Seoul

Park Won-soon

Left: Mayor Park Won-soon delivers talk during his visit to Washington; Right: Mayor Park and CityNet Secretary General Vijay Jagannathan

Over the past two decades, the world's cities have continued to strive for prosperity while seeking ways to achieve co-existence with nature to address challenges of rapid population and economic growth. Cities have also continued to develop and implement a wide variety of strategies for sustainable development suited to their present conditions while trying to meet the needs of current generations and prepare for the future.

What will the future of sustainable development in Asian cities be like? I believe that through active sharing and cooperation based on the know-how and experience of each city, we can discover solutions to address a great number of problems and achieve development efficiently. Just as each individual shows a unique pace of personal development, cities too are distinct in terms of when they embark on the path to development, how quick they are able to achieve development, and the issues they currently face. It thus becomes necessary to review the development that cities have achieved to date in order to identify the most efficient route forward. Until very recently, cities have pursued a vertical encounter between the present and the future within a single

culture (city). However, going forward, it is time for cities to search for a more horizontal rendezvous in which different cultures (cities) will meld. Through different cities, people will view the past, present and future. In other words, a city-to-city exchange will be very much like a form of time travel, transcending the limitations of time and space.

Seoul has been greatly contributing to the development of cities around the world by sharing a spectrum of its own experiences and lessons learned from its pursuit of sustainable development since the 1970's. The city has implemented projects such as the construction of satellite towns, land refurbishment, and the introduction of smart cards in an effort to improve the quality of life and enhance convenience, as well as to offer a space for a rapidly growing urban population. Seoul has successfully maintained a number of cutting-edge initiatives such as the operation of waterworks, the solid waste management system, the One-Less Nuclear Power Plant Campaign based on energy conservation, and eco-friendly transportation systems. Most recently, it began striving towards new goals under its Vision 2030; new initiatives have been launched such as the

commercialization of electric vehicles and the second version of the One-Less Nuclear Power Plant Campaign. At the same time, Seoul is making efforts to address existing challenges and prepare for the future through socially innovative approaches by means of collaboration and cooperation, sharing and co-existence, and collective intelligence.

I believe Seoul, having achieved an unprecedented rate of growth and development and discovered solutions for addressing the resultant problems, is positioned to serve as a role model showing the present and future of cities across the developing world.

However, I am also confident that each Asian city also has its own best practices to share, and that cooperation can spark a remarkable synergy effect. I think that the best practices of each Cluster as presented in the CityVoices are excellent policies that deserve to be studied. It is my sincere hope that all of us, the members of this wonderful community of CityNet, can continue to make progress towards sustainable development by expanding our interest, participation, and cooperation. Find out more about Seoul best practices through this link <https://seoulsolution.kr/?language=en>

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Makassar Mayor, Ramdhan Pomanto, and CityNet Director of Programs, Youngmin Chang, met to discuss about the second CityApp event that engages citizens to help address the issues facing the city.



CityNet New Member City

An Interview with Makassar Mayor, Mr Ramdhan Pomanto

The second phase of CityNet's flagship programme, CityApp, was held from October 2nd-3rd. The event, which brings together programmers from a number of local universities to find solutions to various urban challenges, was collaboratively organized with Microsoft. This time a coastal city in Indonesia, Makassar had the honour of hosting it. This new member city has a vision to develop as a Smart City under the newly-elected Mayor Ramdhan Pomanto, who successfully increased the tax income from USD 52.7 million to USD 71.5 million during the first three months of his administration. Below he shares his thoughts on becoming a CityNet member and his experience of implementing a Smart City.

As a new member of CityNet, what does Makassar expect to gain by becoming a member of the regional network?

By becoming a member of CityNet, Makassar will be able to learn best practices from other member cities in areas such as infrastructure. We will also get the opportunity to take part in various capacity building activities and gain new knowledge from CityNet conferences.

What are Makassar's best practices that you would like to share with other CityNet members?

Our best practice is Makassar's policy on coastal hazard mitigation. We are the first city to implement this policy in Indonesia and we have inspired the legislation on the coastal and small islands. Makassar is a unique city with a long coastline and consists of 12

small islands. Our geographical waterfront is the only well-maintained waterfront in Indonesia. In addition, I think Makassar which has a population of around 1.562 million people, is one of the fastest growing cities in Indonesia with an economic growth of 9.88% in 2013.

What problem does your city face in urban development? And have you found some innovative solutions to address the problem?

"Our urban challenges include waste management, traffic, floods and public service. For waste management problem, our solution is to create a scheme that enables public to swap garbage with rice¹. To address the traffic problem, we are making inner-city elevated toll roads. Then to deal with floods, our new innovation is to make an underground dam. Another issue is related to the public service, we are implementing mobile public service. These are some of the exciting innovations we would like to share with CityNet."

One of your main programmes is implementing Makassar Smart City. How will you develop Makassar as a Smart City?

"We are developing a Smart City that has efficient public services. The first step towards efficiency is simplifying bureaucracy. We are doing this by creating a Smart Card – the first multifunction card in Indonesia – that can be used for many different occasions. At this stage it is given to all civil servants to use as a cash card, ID card, health card and to pay taxes. We have been developing this card without getting funding from the local government budgets. In implementing a Smart City, we would also like to show Makassar's characteristic, Sombere', which means "polite



Mayor of Makassar launched a green and sustainable movement in waste management called *Makassarta tidak rantasa*¹.



Mayor of Makassar launched a green and sustainable movement in waste management called *Makassarta tidak rantasa*¹.

and warm hospitality.” Basically, we want to show this positive character as the identity of the Makassar people.

Which information technology do you think needs to be prioritised for these programmes and how far is Makassar from becoming a Smart City?

“I would say all technologies that are related to the public services and taxation need to be prioritized. An urban society’s productivity depends on the effectiveness of the IT system which presents any leakage of public funds. All public services – from health care, to cashless payment services, to taxation--will be accessible only with one card, the Makassar Smart Card. I believe in around 100 days we will have created the Smart Card System. We are currently trying to comprehend how this system can be implemented and run by the people. We don’t have a control room yet, but hopefully by 2015, all devices will be ready.”

What do you see as the biggest challenge of developing Makassar as a Smart City and how will you address these challenges?

“Currently our biggest challenge is human resources. Although we are the second digital city in Indonesia, we still have difficulties in accelerating people’s skills in mastering the latest technologies. Makassar is a creative city and attracted a lot of great investments in 2014, yet the issue with people’s skills remains the biggest problem. We are trying to tackle this issue by having conversations with all stakeholders and

disseminating the latest developments to the public as soon as possible. If all of these steps can be smoothly completed, I believe the implementation of Makassar’s Sombere’ and Smart City project will be successful.”

References:

¹ This scheme enables citizens to bring their household waste to be swapped with rice, which helps poor people to get rice as their staple food for free just by handing in their waste.



Makassar is a unique city with a long coastline and consists of 12 small islands.



Top left: Meeting between GIZ Nexus Project and the People's Committee of Da Nang City. Bottom left: Community meeting in An Hai Bac ward (intended pilot area). Right: Baguio City is considered as the Summer Capital of the Philippines.

Integrated Resource Management in Asian Cities: The Urban Nexus

The urban population in Asia is growing by 44 million people per year. This rapid urbanization brings about major challenges for urban supply and municipal utilities. In particular, when it comes to water supply and sanitation systems, energy supply and energy efficiency, land use and food security, most Asian cities have reached a critical situation that jeopardizes sustainable development.

Municipal administrations in Asia plan and manage along sectorial lines and not in an integrated manner. Thus, they are not able to fully utilize the interaction and synergies in the three nexus sectors (i.e. water, energy and food security) and their related potentials during the implementation processes. The underlying causes go back to a wide range of responsibilities and competences, which often derive from the regional and national level, beyond the immediate sphere of influence of the city governments.

During the post Rio+20 Conference in May 2012 the issues of water, energy and food security and their interrelationship gained greater international attention and now play a major role with regard to the formulation of indicators for the Sustainable Development Goals (SDG) to replace the Millennium Development Goals (MDG).

OBJECTIVE

In the framework of the « Integrated resource management in Asian cities : the urban Nexus » project, financed by the German Federal Ministry of Economic Cooperation and Development (BMZ) and implemented by GIZ, up to ten selected cities in six Asian countries are supported with a view to nexus-compliant integrated resource management.

APPROACH

The project focus is on the topics of secure water supply and sanitation systems, energy security and efficiency,

land use, physical planning and food security. In addition, an exchange of knowledge and experiences and the cooperation between public, private and civil-society stakeholders is essential. Strategically, the project will focus on two core elements.

On the one hand, it is key to identifying and developing nexus initiatives that demonstrate in an exemplary way how to integrate the nexus approach into urban planning and development processes. On the other hand, it is the regional exchange and dissemination of successful practical approaches to integrated resource management undertaken through an efficient networking and bi-annual regional Nexus Workshops.

VACUUM WASTE WATER COLLECTION IN DA NANG, VIETNAM

As the largest city in Central Vietnam and the third largest city in Vietnam, Da Nang has a provincial status with a significant degree of administrative autonomy. The city's authority is

Project Name	Integrated Resource Management in Asian Cities: the Urban Nexus
Commissioned by	German Federal Ministry for Economic Cooperation and Development (BMZ)
Project region	China, Indonesia, Mongolia, Philippines, Thailand, Vietnam
Lead executing agency	Deutsche Gesellschaft, für Internationale Zusammenarbeit (GIZ) GmbH
Political Partner	United Nations Economic and Social Commission for Asia and Pacific (UN ESCAP)
Duration	01.01.2013 – 31.12.2015



Site visit to the vacuum station in Dubai (1)

striving to become an environmental city by 2020, particularly to pursue a sustainable wastewater strategy.

Within the framework of the regional GIZ project “Integrated resource management in Asian Cities: the Urban Nexus”, the partners from Department of Planning and Investment (DPI) have identified the following pilot projects: *“Vacuum wastewater collection, wastewater treatment (biogas production) using the byproducts (irrigation water and fertilizer from biogas plant) for urban agriculture”*.

The DPI and Department of Natural Resources and Environment (DoNRE) intended to implement a pilot on vacuum sewer collection¹ in An Hai Bac Ward in the east coast of Da Nang. There are around 110 households that will gain concrete experiences on the technology before scaling it up on a wider basis.

As a first step, a household survey was conducted in March 2014 which was followed up with an in-depth physical survey of the households in April. The concept of the pilot project was then explained and the community showed strong support for the project during a public consultation in April.

The concept of vacuum wastewater system follows a strategy to minimize invasion into the existing structures and the privacy of each household (i.e. bathrooms, toilets, kitchens). Moreover, according to the GIZ consultants, the vacuum system is supposed to save the investment cost up to 47% compared to the traditional gravity sewer.² In addition, operation and maintenance costs can be reduced by 70% with the vacuum sewer.

If Da Nang city successfully applies the vacuum wastewater system

pilot project, they will become the pioneer in Vietnam in this field. Therefore, Da Nang has been actively seeking financial support to implement the pilot project.

IMPROVED LOW-COST HOUSING APPROACH IN NAGA CITY, PHILIPPINES

As one of the pilot sites for the Urban Nexus project initiated by GIZ and UNESCAP, Naga City in the Philippines has been implementing a better approach to low-cost housing (LCH). This project is challenging and edifying.

For a city that is prone to disasters – the Bicol region where Naga is located is frequently hit by powerful typhoons – the project is also an opportunity to help the city review the existing Philippine building codes and ensure that these codes are properly implemented to yield dwelling units that will withstand natural calamities.

Of the three projects proposed by the city government for technical assistance under the integrated resource management framework of Nexus, the LCH project in Barangay Del Rosario, was a feasible choice to be implemented. First, the project was a priority of Mayor John Bongat and thus the required funding has been allocated by the national government shelter agency, Home Development Mutual Fund (HDMF). Second, the 1.5-hectare property owned by the city government has been made available for the project.

Under this phase, 48 housing units will be constructed for low-income employees of the city government, with PhP12 million (US\$272,727 at PhP44: US\$1) loan from HDMF of which the workers will amortize at 4.5% interest per annum.

Thus far, three quadruplexes – equivalent to 12 units – have been completed by the local unit of Habitat for Humanity, an international housing NGO. To accelerate implementation and address workmanship issues that arose, the city government decided to tap into a private housing company to complete the work of half of the units.

From January to April 2014, two Nexus experts stayed in Naga and helped local agencies, particularly the newly established Housing and Settlements Development Office (HSDO), improve the initial design prepared by Habitat that yielded more space and improved ventilation. A centralized septic tank was also introduced in preparation for decentralized waste-to-energy (WTE) scheme envisioned to rise in the community and its environments.

Finally, a successful town-gown partnership between the HSDO and architecture students from the local Bicol State College for Applied Sciences and Technology (BISCAST) was also initiated.

Notwithstanding a set of problems that arose, the Del Rosario LCH units survived their first litmus test: the 213 kph peak winds of Typhoon Glenda (internationally known as “Rammasun”) last July 15 brought only minimal damage, which was mainly caused by falling tree branches.



THE THERMO-TECHNICAL REHABILITATION PROJECT IN ULAANBAATAR

The capital of Mongolia, Ulaanbaatar, has 1.2 million inhabitants. Nearly half of the country's population lives in the capital, with an additional 30,000-50,000 migrants arriving in the city every year. Most of them settle down in the Ger district, which makes up 65% of the population of Ulaanbaatar. Public urban services cannot comply with the growing demand of the physical infrastructural provisions, one of which is adequate energy supply.

Ulaanbaatar's housing stock is still dominated by the pre-cast concrete panel buildings from the 1970s, 80s and the early 90s. More than 20% of the city's population lives in these buildings. Over 500 five-to-twelve-story pre-cast-panel buildings accommodate around 50,000 apartments. These buildings don't meet the required comfortable living standard due to their age, poor maintenance and lack of insulation.

Apartments in the buildings generally experience excessive heat loss which leads to condensation and uncomfortable conditions in the extreme winter during which the average outside air temperature reaches -10.1°C.

Rehabilitation of the buildings is also required for social, environmental and economic reasons. Not only will it improve the residents' well-being but also prevent key parts of the housing stocks from decaying and turning into slums.

The second urgent reason for Ulaanbaatar to solve energy efficiency issues is the shortage of installed heating capacity from power plants that limits the heat supply to households. Therefore, efficient energy usage is of the utmost importance. The city is trying to tackle energy issues by elaborating relevant projects and programmes to reduce thermal loss, increase energy efficiency and reduce household energy usage.



Typical 5- and 9-storey panel buildings and air pollution from power plants in Ulaanbaatar

Ulaanbaatar City plans to implement thermo-technical retrofitting projects in apartment buildings and several public buildings by adding insulation to panel buildings and introducing consumption based tariffs for heating. Thus it will demonstrate an integrated resource management approach in solving the pressing problems of the city, i.e. heating energy shortage. At the same time it will reduce greenhouse gas emissions and create an environmentally friendly city.

One of the basic conditions for the successful implementation of this program is developing financing mechanisms that consider the relevant

actual economic data, the financial potential of the target groups, possible interests, readiness and terms of the financial system to support the program by credits, the role of Ulaanbaatar City Government and other relevant actors as well as international experiences in thermo-technical retrofitting financing schemes.

SUSTAINABLE WATER INTEGRATED MANAGEMENT PROGRAM IN BAGUIO, PHILIPPINES

Baguio is home to 330,000 residents. It is classified as a highly urbanized city in the Philippines, but according to international population parameters it is considered to be a medium-sized city.

Over the past two decades the City Government has refocused its governance towards environmental sustainability as its core thrust. This move is intended to strengthen the Local Government Units' role to protect and conserve the environment and its related resources.

As a highly urbanized city, Baguio continues to face several challenges of rapid population growth and urbanization. Water and waste water management are among the most affected urban systems.

The City is aware of the issue in the supply-demand gap for potable water and they have projected an even wider gap in the future. That being the case, there is also the brewing challenge of wastewater management being worse than the potable water supply.

Since Baguio City adopted the integrated water resource management (IWRM) approach,³ it has been able to establish a clear framework to manage its water resources to complete the cycle from production, supply, utilization and waste water management.

While the IWRM approach provides a general integrated framework, the City realised that urban solutions to its water problems can no longer solely rely on just policy and expert advice. A scientific phase to further enrich existing policy frameworks and interventions in the form of appropriate technology, for instance, must be taken into account to efficiently cope with Baguio's current and emerging urban challenges.

Along a similar vein, the City has manifested its interest in adopting the



Naga City in the Philippines has been implementing a better approach to low-cost housing (LCH) as part of the pilot sites for the Urban Nexus.





Regional Nexus Workshop in Da Nang, June 25-27, 2014

Urban Nexus Approach to pursue its program on wastewater management. With a Local Government Code, the National Clean Water Act and a local Water Code providing the basic premises, the City is one of the few cities in the country that provides wastewater management as a core urban public service.

From the operation of its Sewage Treatment Plant, it discharges treated water into the inland waterway to serve the city. Although the volume of inflow is now beyond the plants design capacity - 10,000 cubic meters per day on average - it still complies with 8,600 cubic meters of wastewater inflow.

The City considers waste and treated water as a resource, and the nexus concept provides a more detailed analysis of waste water management across more specific sectors (such as in urban agriculture and energy). Policymakers and

program implementers cannot address one sector without looking at the effects it has on the other sectors.



Best praxis example: 5-storey panel building retrofitted under the GIZ Integrated Urban Development Program in 2007, Chingeltei district, 5-th Khoroo, apartment No.8

Introduction by Ruth Erlbeck, Project Director Integrated Resource Management in Asian Cities ; Da Nang project by Hong Nguyen, Ulaanbaatar project by Tserendas Sugarragchaa; Naga project by Wilfredo Prilles Jr ; Baguio project by Colleene Lacsamana.

1 A vacuum sewer system is used to collect wastewater from multiple sources and convey it to a central location where it can be treated. This system uses air pressure that will push the wastes towards vacuum mains. This system allows a central vacuum station to collect wastewater from several thousand households. Source: Water Environment Research Foundation

2 Gravity sewer system is a traditional way to transport wastewater by gravity and relies on gradually sloping pipelines. Source: Water Environment Research Foundation

3 Integrated Water Resources Management (IWRM) is a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. Resource: Global Water Partnership



Baguio sewage treatment plant; wastewater management is a core urban public service in Baguio City.



Representatives from CityNet, Microsoft, Makassar municipality and Hasanuddin University during press conference

Fall Highlight: CityApp Makassar

Makassar students create apps to tackle urban challenges

Four hundred students from a number of high schools and universities in Makassar, Indonesia, enthusiastically collaborated to find solutions to urban challenges facing their city by creating apps.



Up to 400 students from universities and high schools in Makassar participate in CityApp

The second CityApp was held in Makassar, from October 1st-2nd, following the success of the first event in Kathmandu earlier this year. This second appathon was jointly organized by CityNet, Microsoft and the City of Makassar and was hosted by Hasanuddin University of Makassar.

Prior to the two-day event, the City of Makassar submitted nine problem statements focusing on unemployment, social security, healthcare, education, waste management, skills training and workforce development, green spaces, public housing and creating a safer city.

CityApp Makassar was officially opened by Makassar Mayor Moh. Ramdhan Pomanto who said that this collaboration between the government and private sector (Microsoft, CityNet and the university) to improve

Makassar's Smart City initiatives is the first of its kind in Indonesia.

The winning app, created by a team from UIN Alauddin University, addressed the unemployment issue as a result of a lack of job training and low skill sets. The crowdsourcing app shows relevant trainings and job opportunities in the city, making them available to a database of job seekers.

“CityApp is a very important method to find the solutions to many hot issues in Makassar by engaging citizens’ participation”

*Moh Ramdhan Pomanto
Mayor of Makassar*

“We’ve never expected to win this competition. We chose to create this app to address the unemployment issue in our city. One of the reasons why people became unemployed is because they don’t have the required skills, so it is necessary for them to get them for free,” said Magfirah Suyuti from the winning team.

The first runner up was a team from Universitas Negeri Makassar with an application called “Super Ambulance” that enables the Public to have timely access to ambulance and medical care during an emergency. A team from Hasanuddin University was the

second runner up with their application “Makassar Ta’ Tidak Rantasa (MTR) Project”, which focused on cleaning up the streets of Makassar.

Representing CityNet, Deputy Secretary General Aisa Tobing mentioned, “It’s such a great pleasure for CityNet to assist Makassar to find the solutions to various urban challenges facing the city, by directly engaging with the citizens and other stakeholders. As one of the cities with the highest growth in Indonesia, this is a chance for Makassar to really implement the concept of a Smart City. This CityApp is expected to be the best example for other cities to come up with such initiatives”.

In fourth place, Milgevia created an app called “Daeng911.net” which allows citizens to locate vacant doctors or the closest pharmacies to the user’s location. She supported CityApp initiative as a great way to gather the new idea from many young developers and programmers for a better city using technology. She added that it gave the young generations a chance to at least share their ideas to help build a better city.



The winning teams of the second CityApp.



Mayor of Bandung, Ridwan Kamil, has launched various initiatives to create a more environmentally-friendly city.

Climate Change Cluster Bandung, Indonesia

Societies Crucial Role in Implementing a Sustainable City

Bandung is stepping up its effort to implement an environmentally-friendly, sustainable, and comfortable city. As predicted by the World Health Organization, by 2050 70% of the world population will live in urban areas, and Bandung has similarly shown the signs of rapid urbanization.

The population of this Indonesian city has reached approximately 2.6 million people, despite the fact that it was originally designed to accommodate around 300,000 inhabitants. This has forced city planners, architects and governments to wrestle with urban challenges.

Some major challenges facing the city of Bandung include water and air pollution, inadequate waste management particularly toxic waste, land subsidence, limited urban green spaces and the lack of business compliance with environmental regulations. Alongside its 2014-2018 vision, Bandung municipality has developed a set of actions to deal with urban challenges through

the betterment of urban planning, infrastructure and good governance.

One of the most affected areas is the environment; hence the city government sees the urgency to undergo environmental restoration by improving efforts to address pollution and climate change. According to Bandung city's vision,

an environmentally-friendly city is a city where the residents have a great awareness of their surroundings, and therefore create a wide range of activities that protect and preserve the condition of their environment. Not only is Bandung keen on creating an environmentally-friendly city, but also a comfortable and sustainable place for its people to live. According



Mayor Kamil sees the importance of involving the residents in implementing a more environmentally-friendly city.



Bandung's waste collection movement is aimed at educating people on the importance of maintaining the city's cleanliness to reduce the effects of climate change.

to Bandung's mission, a sustainable city means that every development must take balanced economic, social and environmental aspects into account in order to provide adequate resources for the future generation.

CITIZEN ENGAGEMENT IS THE KEY TO IMPLEMENTING A SUSTAINABLE CITY

Since the former urban designer now Mayor, Ridwan Kamil took over the city administration, he has launched various initiatives to create a more environmentally-friendly city. He sees the importance of involving the residents in implementing this goal. He believes that changes should be initiated from within by launching grass-root movements. One of Bandung's efforts to put environment at the forefront of city priorities, is to increase in the success of waste management by engaging with the people.

A number of policies have been launched to address environmental issues, one of which is the garbage disposal campaign. People's awareness of waste management is low and is reflected in their behavior when they discard trash on the street. Moreover, the city doesn't have a sufficient number of street cleaners and the policy to regulate the city's cleanliness has not been implemented effectively. Based on this background, the city government launched a waste collection movement that involves residents working together to address garbage issues.

The movement, which encourages residents to allocate 30 minutes of their time to dispose garbage, is aimed at educating people on the importance of maintaining the city's cleanliness to reduce the effects of climate change. The movement participants are divided into four categories -city officials, academic institutions or schools, non-governmental organisations and private sectors- which determine the time and place of their garbage disposal activities.

The garbage disposal campaign that was launched by Bandung municipality was not the only program initiated to deliver improved solid waste management. Bandung Municipality has also planned other strategies including the reduction of plastic bag use, the practice of Reduce, Reuse and Recycle (3R), the concepts of urban planning, vertical gardens, and the development of a waste bank.¹

GREEN TECHNOLOGY

The second major initiative pursued by Bandung municipal government to create a sustainable city is promoting green technology. One of the methods that they have adopted is the waste-to-energy technology, biodigester.²

With this technology Bandung is targeted to handle 1% of the buildup of the households' solid waste. For instance, if there are 1,500 tons of waste per day of which 60% is organic (900 tons/day), they have to process 9 tons of waste per day with the biodigester.

With the capacity of 0,25tons/day per biodigester, Bandung would need 36 machines. This has created a challenge in the implementation of the technology that includes the high cost of the biodigester, maintenance, the availability of space and community development. Thus far the city government has planned to build around 14 units of biodigester assisted by local universities.

BANDUNG GREEN INITIATIVES

Bandung green initiatives do not stop there. A series of campaigns and activities were launched to optimize their efforts to create a sustainable and comfortable city for its residents. The city government realizes how important it is to expand green spaces across the city which has been shrinking by the day. Apart from developing urban gardens, one of the most effective methods is by encouraging urban farming.³ The Bandung Mayor calls on households in every administrative entity to plant various productive plants, such as fruits and vegetables.

It is obvious that without the public involvement in Bandung's green initiatives, the end result would be far from successful.

References

1 Waste bank is a waste center that operates like a bank. This center receives waste from local neighborhoods that has been divided into two categories; organic and non-organic. Just like a commercial bank, each household may open their account to "deposit" their collected waste and get it monetary valued. This scheme encourages the people to change their behavior to enjoy a clean neighborhood. Source: the World Bank, Waste Not, Want Not: "Waste Banks" in Indonesia

2 Biodigester technology is utilized to produce biogas, in which microorganisms break down biodegradable material in the absence of oxygen. As part of a waste management system, this technology is aimed at reducing emission of landfill gas into the atmosphere. Source: Wikipedia, Anaerobic digestion

3 Urban farming or urban agriculture is a practice of cultivating and distributing food within the local communities. This will lead to the reduction of food miles and the expansion of green spaces in the city. Source: Wikipedia, National Geographic: Urban Farming is Growing a Green Future



Night panorama of Legaspi Village

Disaster Cluster Makati, Philippines

Mainstreaming Disaster Risk Reduction and Climate Change Adaptation (DRR-CCA) in Makati's Land Use Plan

On its report on the disaster impacts worldwide, the United Nations Office for Disaster Risk Reduction (UNISDR) states that there were 2.9 billion people affected, 1.2 people killed and US\$ 1.7 trillion worth of damages brought on by various disasters between 2000 and 2012.¹ According to the 2012 World Risk Report published by the United Nations University Institute of Environment and Human Security (UNU-EHS), the Philippines is the third most disaster-prone country with a risk index of 27.98 behind Vanuatu and Tonga.²

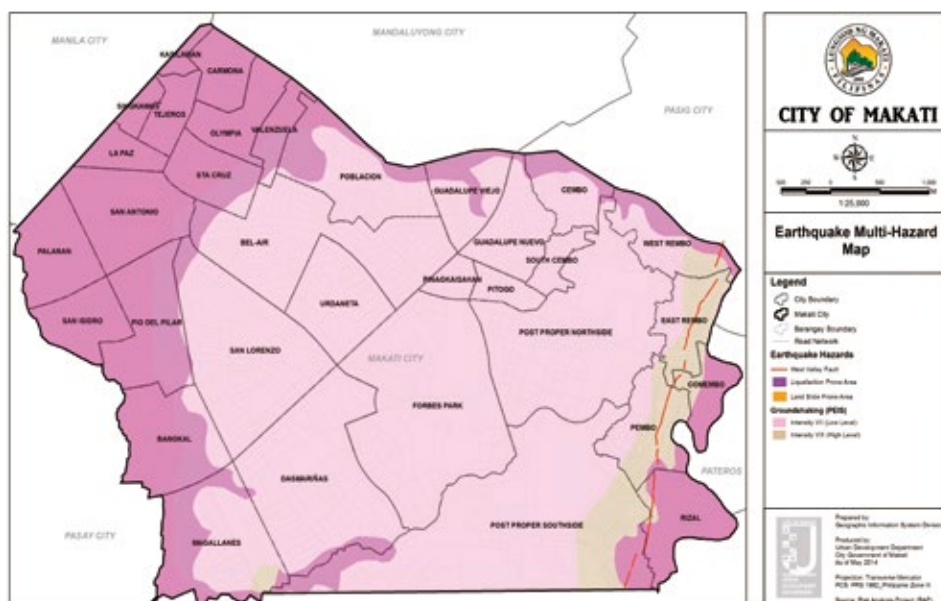
Based on the Centre for Research on the Epidemiology of Disasters there were 207 significantly damaging natural disasters in the Philippines between 2000 and 2012, of which 102 and 72 can be attributed to tropical storms and flooding respectively, and six to seismic activity (earthquakes). Thirty-three significant disasters hit the Philippines in 2011.

These natural disasters affected approximately 71 million people with a death toll of 12,899 and 138,116 people injured. Around

375,000 people lost their homes and the socio-economic damages was estimated at US\$3.37 billion.

Thus, the government passed the Climate Change Act of 2009 (Republic Act no. 9279) and the Philippine Disaster Risk Reduction and

Management Act of 2010 (Republic Act. 10121). The Climate Change Act states that it is a state policy to systematically integrate the concept of climate change in the various phases of policy formulation, development plans, poverty reduction strategies and other development tools.



RAPID URBANISATION

According to the 2010 Census of Population and Housing by the Philippine Statistics Authority, urbanites made up 45.3% of the whole population.³ More and more people will be living in cities as urbanisation continues to increase at an annual rate of 4%. This worsens the existing situation of cities, because most old cities in the Philippines have been developed with little consideration for geo-physical and hydro-meteorological hazards, while others are already way above their intended carrying capacity or have large, unplanned developments.

Makati City is the Philippines' premier financial and commercial center and one of the 17 local government units in the National Capital Region (NCR). Makati is located in the heart of Metro Manila with an area of 27.36 sq km which is only 4.3% of the total size of Metro Manila. The night time population reaches 529,039, a number that balloons to 3.2-4.2 million people during the day.

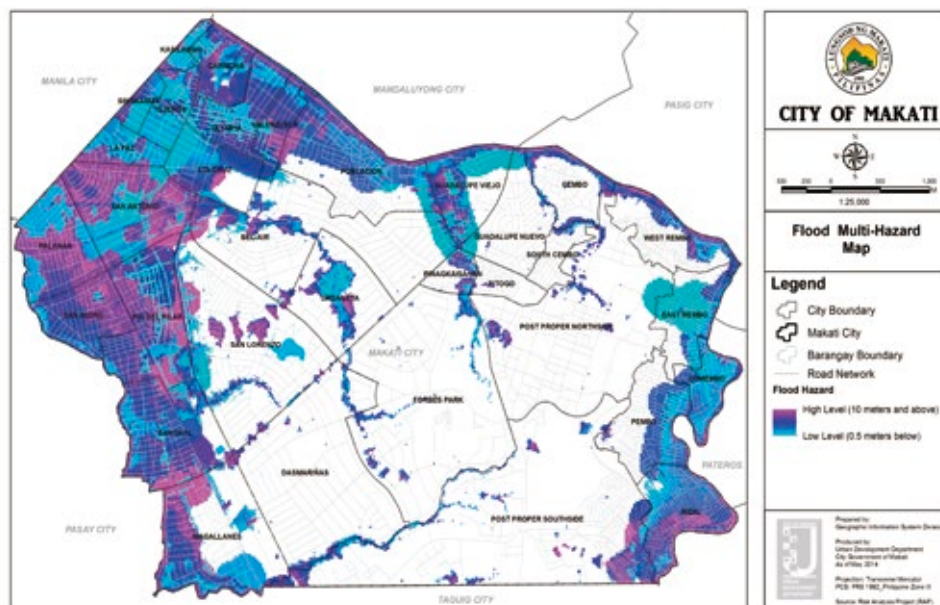
DISASTER-PRONE CITY

Makati is exposed to different natural hazards – both geological (earthquake and land slide) and hydro-meteorological (flooding). These hazards not only pose great danger to Makati's populace but also to its present and future development.

The City is traversed by an earthquake fault called the West Valley Fault (WVF). Transecting the eastern part of Makati, the WVF has an approximate length of 3.6 km affecting six *barangays*.⁴ This fault zone is capable of generating a magnitude 7.2 earthquake or equivalent to ground shaking intensity 8.

The City is also prone to ground liquefaction as it is surrounded by major river systems of Metro Manila. Those areas located along its fringes next to the river systems are more likely to experience land subsidence particularly when earthquakes occur. Moreover, the high-elevated area in the east is more likely to experience landslides especially during strong, ground-shaking and heavy rains.

Makati City is a catch basin of floodwater from high areas. Hence, the city is generally flood-prone following heavy rainfalls. Based on different maps produced by the City Government of Makati and sourced from the Risk



Analysis Project (RAP) of the National Government, Makati City is expected to experience as high as a 5-meter flood level with a return period of 200 years.

To integrate Disaster Risk Reduction and Management (DRRM) into the Makati Comprehensive Land Use Plan (CLUP), hazard maps were used as an important component to come up with Makati Development Potential and Constraints Areas Map or Developable Map.

This Developable Map was produced with different map layers such as hazard maps, social infrastructure, residential areas, and vacant areas, among others, which were processed through sieve mapping analysis using the Geographic Information System (GIS). The Developable Map became the basis for city planners to identify areas that need redevelopment and to build a structure plan. The result shows that hazard-prone areas have low potential for redevelopment.

In order to reduce the risk facing areas with low redevelopment potential, the city planner identified different land use policies and mitigation measures: Risk Avoidance or Elimination, Risk Reduction or Mitigation, Risk Sharing or Risk Transfer and Risk Retention or Acceptance.

In addition, to strategically avoid and reduce the exposure to different hazards as well as to address land use issues and concerns, the city planner crafted the following strategies:

- Securing the West Valley Fault (WVF)

- Controlling building densities in areas prone to liquefaction
- Increasing building height limits for areas prone to flooding
- Clearing the easements of rivers and creeks
- Expanding parks and open spaces; which can also be used as evacuation sites.

A detailed plan of mainstreaming DRR-CCA into the city's land use planning is reflected in the City's Risk-Sensitive Comprehensive Land Use Planning (CLUP) and Zoning Ordinance which promote sustainability and the city's competitiveness. As stated in the City's CLUP, Makati is aiming to be a model for disaster resiliency, this key strategy summarizes the city's effort in developing a culture of resiliency at the spatial level.

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EnP., Urban Development Officer, City
Government of Makati, Philippines*

References:

- 1 http://www.preventionweb.net/files/31737_20130312disaster20002012copy.pdf
- 2 http://www.senate.gov.ph/publications/AAG%202013-04%20-%20Natural%20Disasters_final.pdf
- 3 <http://www.census.gov.ph/content/urban-barangays-philippines-based-2010-cph>
- 4 *Barangay is the smallest administrative division in the Philippines and is the native Filipino term for a village, district or ward*



Left: Gwanghwamun Square in central Seoul, Center: Cheonggyecheon stream - restoration project, Right: Sejong Center Fountain festival

Infrastructure Cluster Seoul, South Korea

Policy Sharing Makes Cities around the World Happier

Ruined by the Korean War in the 1950s, Seoul struggled from the aftermath of the war and just seemed hopeless. However, to everyone's surprise, it has rapidly developed its economy and grown into a megapolis. Over the past 50 years, the city has seen a 1,389% and 443% increase in its income (GDP) and population, respectively. As of 2014, the city is home to a population of 10.14 million, a significant increase from 2.45 million in the 1960s.

Besides the quantitative expansion, the city has also sought to enhance the quality of life through various policy measures. Seoul's urban development policies have progressed in three stages as follows:

1. Establishment of urban infrastructure (1960-1980):

Focusing on expanding urban infrastructure to keep up with the rapid population growth; e.g. waterworks, roads and housing.

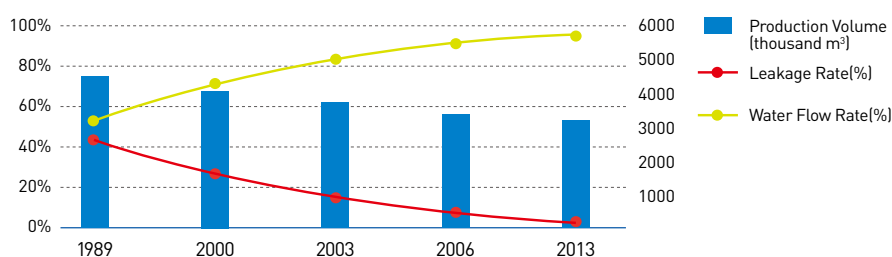
2. Management of the urban environment (1980-2000):

Improved urban environment and upgraded existing infrastructure following the establishment of basic urban infrastructure

3. Pursuit of sustainable development (Since 2000):

Shifted the focus of civil infrastructure development from hardware-led projects e.g. civil engineering projects to a software-driven development involving IT technology and mature civil awareness.

Water Flow Rate, Leakage Rate and Changes in Daily Production Volume



Amid such rapid growth and social changes, Seoul had to tackle various urban issues involving housing, environment and transportation, etc. In the course of addressing them, the city was able to accumulate extensive experiences and technologies by trial and error.

For instance, among the city's four leading areas of expertise, waterworks management is well known for its advanced technical basis. The advanced sewage treatment system and purification technology using dip-type precision filters have been adopted to provide the citizens with safe and clean water while ensuring a stable supply of water resources.

Notably, the water flow rate stands at a world's best level, 94.5%. Based on these achievements, Seoul received the UN's Grand Prize in the public administration in 2009 and the Global Water Industry Project Innovation Award in 2010 and 2012.

In addition, in September 2013, Seoul showed its excellence in

waterworks administration by acquiring an international patent for the ozone residue eliminating technology with an anthracite upstream device attached to the rear of the existing ozone contacting unit.

Seoul Metropolitan Government has also developed the city's transportation policies, which can be seen from its public transportation management system including the transport operation information system (TOPIS), integrated fare system, exclusive median bus lane system and the bus



TOPIS, the center of the world's advanced transportation

management system (BMS). Seoul has been utilizing the most advanced ITC to ensure more efficient traffic flow and greater convenience for the citizens.

BUS MANAGEMENT SYSTEM

Particularly, its subway system is acknowledged as one of the best by many international organizations including the International Association of Public Transport and foreign media outlets.

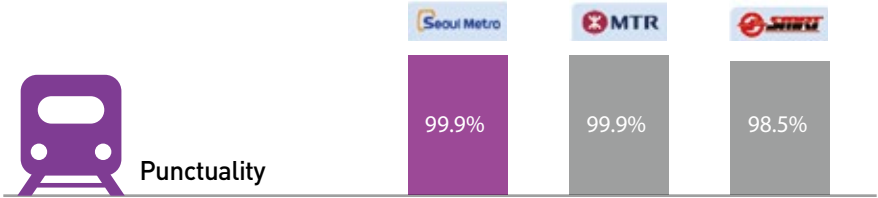
It also holds about 120 patents in the urban railway system, more specifically in the wireless communication system, platform screen door, tunnel monitoring and automatic train operation.



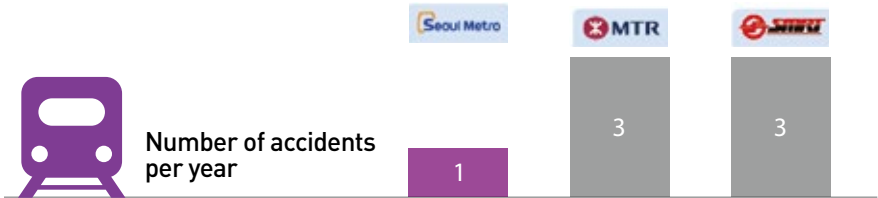
Bus management system

PLATFORM SCREEN DOORS (PSD) FOR SAFETY

Seoul has also emerged as a benchmark for many cities worldwide in terms of digital governance. It reached the top position in the Municipal e-Governance International Survey conducted by Rutgers University and was sponsored by the United Nations five times between 2003 and 2011.



※ Punctuality refers to the chance (%) of a train arriving at a station at the exact time (delay within 5 minutes)



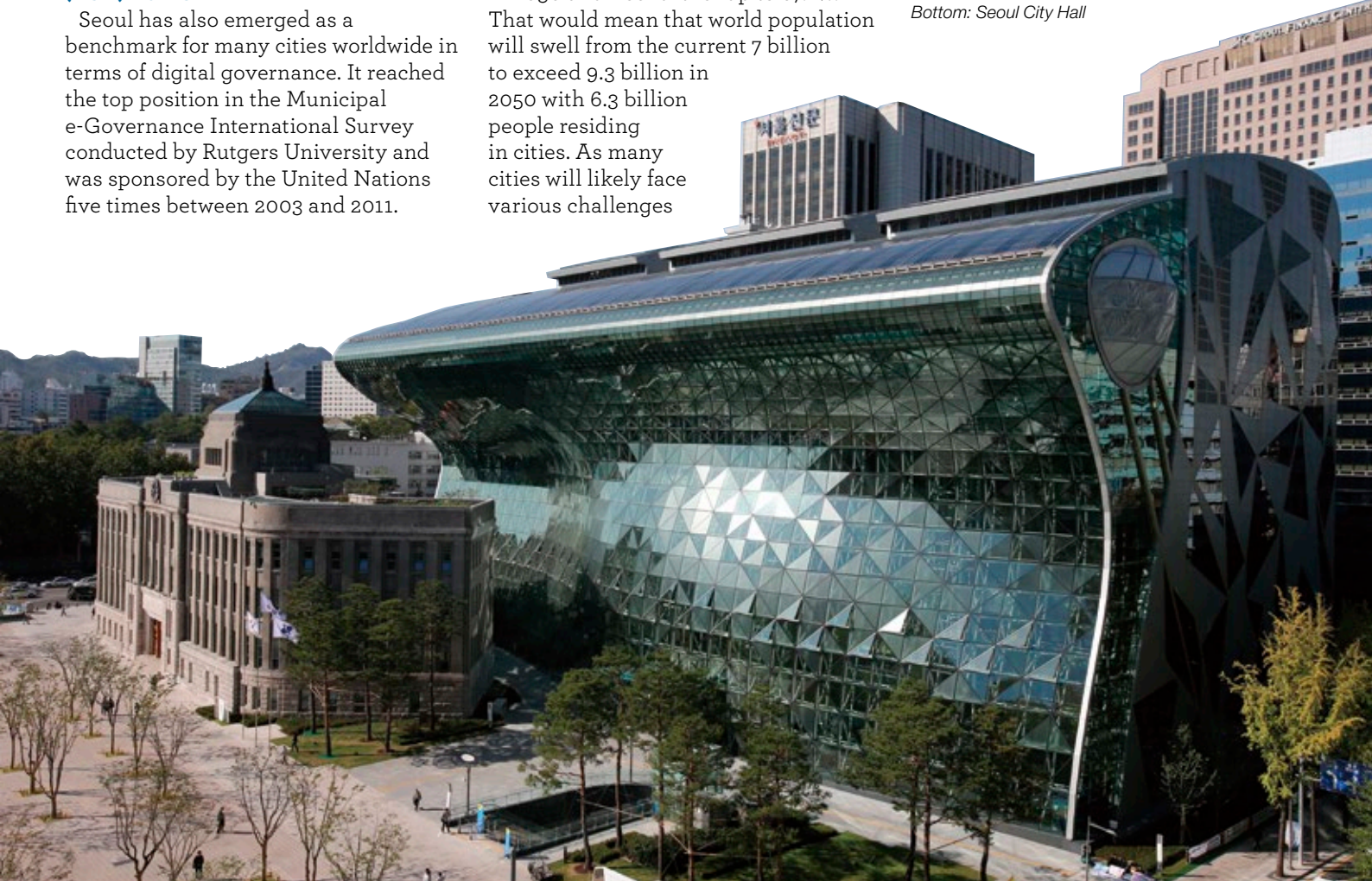
Seoul is ready to share these experiences and technologies with cities around the world as it reaffirms the commitment to the development of world cities. It is working to carry out policy sharing projects with 22 cities from 21 countries in various areas including four leading sectors; waterworks, railways, transportation and electronic government.

due to population growth, Seoul’s policy solutions are expected to play an important role in supporting other cities’ efforts to tackle their problems.

Seoul’s best practice polices and the details of the progress it has made in its sharing projects with other cities are available online at www.seoulsolution.kr/

According to UN forecasts, from the mid-2000s, around 200,000 people join the global urban population each day. With the current trend continuing, urbanization is expected to reach 60% in 2030 and rise further up to 67.2%. That would mean that world population will swell from the current 7 billion to exceed 9.3 billion in 2050 with 6.3 billion people residing in cities. As many cities will likely face various challenges

Bottom: Seoul City Hall





People's Day in San Fernando that provides greater services to the constituents.

MDG Cluster San Fernando, Philippines

CITY OF SAN FERNANDO: CENTER FOR HEALTH AND WELLNESS IN 2020

The City of San Fernando, a small city with a total land area of 10,526 hectares, is located 270 kilometers north of Manila, the capital of the Philippines. Converted into a component city in 1998, it is the Regional Capital with a total population of about 115,000 population but with an additional 50,000-80,000 daily visitors entering the city as the administrative center of the Province of La Union.

Since its creation as a component city, it has been envisioned as an urban city that balances economic gains with environmental sustainability while ensuring the preservation of historical and cultural heritage values. In addition to this, the

local government unit continued to maintain its agricultural base while developing the potential of local commerce, industry and tourism.

In the latter quarter of the 2013, San Fernando found a niche in developing public and private modern medical facilities and clinics, and began to establish itself as a regional medical and training center with the expansion of tertiary educational institutions offering medical-related courses.

San Fernando developed a new vision of becoming Northern Luzon's Center for Health and Wellness by 2020, and began to position itself as the ideal business

location for health and wellness enterprises while institutionalizing a unique culture of health and wellness among its constituents

HOLISTIC AND INTEGRATED DEVELOPMENT

The development direction that City of San Fernando is pursuing is holistic and integrated because health and wellness is not only physical but also environmental, occupational, spiritual, social and intellectual.

Development in physical health and wellness represented a comprehensive package of programs that complemented social objectives and allowed for the improvement of the physical fitness activities, healthy lifestyle programs, medical and dental missions, house-to-house medical visits, competency program for health volunteers. The expansion of the main rural health center as well as expanding the barangay health clinics and wellness centers.

Development in environmental health and wellness provided many complementary benefits towards the efforts of San Fernando to have all the Barangays certified for environmental, health and safety to meet international standards for development. San Fernando is currently certified on three international standards, namely: 1) ISO 9001:2008, 2) ISO 14000:2004 and 3) OHSAS.



Mayor Pablo C. Ortega



People's Day includes medical and dental mission

COMMUNITY ENGAGEMENT AND THE MODEL BARANGAY

Community engagement represented an essential component in the effort to institutionalize a culture of health and wellness among the city's residents. San Fernando continues to promote its vision, mission and values and remains active in developing the social infrastructure of its 59 barangays. To support further work and development it is necessary to ensure policy and program alignment and promote strengthened contributions and initiatives for the development of the community and attainment of social objectives. More importantly, community engagement ensures the participation of the barangays and people to develop a sense of ownership and greater involvement in the development processes to ensure social sustainability

The Barangay Development Strategy (BDS) session, a participatory planning process involving the Barangay Development Council and other external stakeholders, was conducted through all villages in the context of the model barangay framework. The model barangay framework outlines three major elements, namely: 1) Environmental, Occupational, Health and Safety certification (ISO 14000:2004/OHSAS), 2) Income Generating Project in partnership with a private sector, and 3) Upgrading of health services and facilities. The BDS resulted to the formulation of Barangay vision, its brand name, recommendations on income generating projects and strategic initiatives

PEOPLE'S DAY

San Fernando recognized the need to communicate further and establish a wider reach of vision, and began to integrate health and wellness concepts and activities in conjunction with the

People's Day. The People's Day is an opportunity for the city to provide greater services to the constituents. A mix of activities were undertaken during the whole day affair that includes medical and dental mission, issuance of new identification cards to senior citizens, environmental advocacy, animal welfare advocacy, technical assistance and product development seminars for the income generating projects of the barangays,



a cheerdance competition for public elementary schools showcasing the health and wellness ideals, jingle and dance and a cooking competition for secondary and tertiary schools featuring healthy dishes.

CITY'S HOLISTIC APPROACH AND THE MDG

The City of San Fernando takes pride in its innovative and trailblazing approaches to governance systems and service delivery with gains in community and visitor satisfaction as well as new opportunities for citizens and improvements in social wellbeing. Like the Millennium Development Goal (MDG), the city's approach to development is holistic, integrated and people-focused. It

has constructed a veritable social identity in its development goals.

The development of San Fernando has evolved since it was converted to a component city more than fifteen years ago. Progress on achieving these objectives continues today and

This is the way to go towards becoming the Center for Health and Wellness!

References

1 **Highly Urbanized Cities** - Cities with a minimum population of 200,000 people, as certified by the National Statistics Office of the Philippines, and with the latest annual income of at least 50,000,000 pesos based on 1991 constant prices, as certified by the city treasurer.

Independent Component Cities - Cities whose charters prohibits their voters from voting for provincial elective officials. Independent component cities shall be independent of the province.

Component Cities - Cities which do not meet the above requirements shall be considered component cities of the province in which they are geographically located. If a component city is located within the boundaries of two or more provinces, such city shall be considered a component of the province of which it used to be a municipality.

Source: Philippine Statistic Authority; http://www.nscb.gov.ph/activestats/psgc/articles/con_cityclass.asp

2 **Tertiary Educational Institution** refers to all post-secondary institution including but not limited to universities, e.g. colleges, technical training institutes, community colleges, nursing schools, research laboratories, centers of excellence, distance learning centers.

Source: The World Bank

3 **Barangay** is the smallest administrative division in the Philippines and is the native Filipino term for a village, district or ward. Source: Wikipedia





Left: Tjong Hok Kiong Temple in Sidoarjo . Middle: The Regent of Sidoarjo, H. Saiful Ilah, takes part on the "One billion trees plant programme". Right: The Plaza of Sidoarjo

Member Spotlight

Sidoarjo Regency

SIDOARJO AT A GLANCE

Sidoarjo is a Regency (Kabupaten) in East Java, Indonesia which is bordered by Surabaya city and Gresik Regency to the north, by Pasuruan regency to the south, by Mojokerto Regency to the west and by the Madura Strait to the east. It has an area of 634.89 km², making it the smallest regency in East Java. As of 2000, Sidoarjo had a population of 1,549,883. Sidoarjo is known as the main support of the city of Surabaya and also a part of the urban planning region surrounding Surabaya, known as 'Gerbangkertosusila'.

MUDFLOW DISASTER

On May 29th, 2006, there was an underground blowout triggered by drilling activity of an oil exploration project operated by PT. Lapindo Brantas in Sidoarjo Regency that caused pressurized mud to spill out of it. The mudflow damaged houses, public facilities, infrastructure and environment, and caused social changes not only in the communities around the disaster site, but also the wider area. The victims could never go back to their original settlements and had to relocate to other places as the mud flood buried their homes permanently. The flow still continues today.

Sidoarjo Regency revised its municipal spatial planning to reduce future mudflow risk. In the spatial pattern, the mudflow disaster area is planned as a Geology Conservation Area and is classified into three zones based on the degree of disaster risk deriving from the mudflow eruption points. The Geology Conservation Area is a good Disaster Risk Reduction (DRR) for the mudflow disaster, as the actual end of the mudflow is still unpredictable. Some DRR activities such as resettlement,

provision for open spaces and an evacuation road are planned based on Sidoarjo Spatial Planning.

Sidoarjo's economy is currently growing rapidly after experiencing a few years of economic stagnation and slowdown due to the mudflow disaster. The advantages of its strategic location, easy accessibility and infrastructure availability make Sidoarjo an attractive city for investments. There are many foreign investments pouring into Sidoarjo which has led to significant property development.

SIDOARJO AND CITYNET

In order to support development in Sidoarjo, the city considered it necessary to expand the network by joining CityNet in 2009. Sidoarjo has been a member of CityNet since September 7th, 2009. Its membership was officially assigned during CityNet congress in Yokohama. Sidoarjo joined the Millennium Development Goals (MDGs) cluster, which prioritises urban development programmes.

The city government has a particular focus on the technical departments for planning, infrastructure, transportation and spatial planning. Some of CityNet programmes that support Sidoarjo

Regency developments are trainings and capacity buildings in urban planning, infrastructure and urban transportation. Representatives from Sidoarjo Regency - especially from Local Planning Board, Resettlements and Spatial Planning Department, Transportation Agency and Highway Construction and Maintenance Agency - have been participating in CityNet trainings regularly.

In July 2012, Sidoarjo Regency was honoured to be the host of the "International Seminar on Sharing Experience in Local Disaster Risk Reduction and Climate Change Adaptation and Disaster Cluster Meeting" from July 13th-14th as part of CityNet's 25th anniversary celebration. This seminar was held in collaboration with CityNet, UNISDR, the World Bank and other international NGOs. The seminar was attended by approximately ten cities from a number of countries including Yokohama, Kathmandu, Da Nang, Colombo, Manila and several cities from India and Bangladesh as well as approximately 30 districts/cities across Indonesia.

A Sidoarjo delegation led by Regent Saiful Ilah had the opportunity to attend the CityNet Congress in Seoul, Korea in November 2013, during which Sidoarjo's cultural delegation performed Sidoarjo's traditional dance.

By joining CityNet, Sidoarjo Regency is expected to develop a network with other member cities in order to improve the welfare and public services in Sidoarjo, as well as to take part in activities in Integrated Urban Planning, Urban Transportation Systems and Waste Management. In addition, CityNet provides assistance to Sidoarjo, in relation to development programmes to implement an independent, prosperous, and civilized society.



Cultural parade at the city's square

Your Voices:

How can your city be more sustainable?

"In my opinion, the key to sustainable city is:

1. Make sure to dispose rubbish properly
2. Solve traffic jam issue
3. Buy our local products
4. Support local business"

Nina Widharetna, Jakarta, Indonesia

"Now many public officials are dedicating to establish and carry out great public policies to improve our citizens' quality of live and make our city sustainable. How cannot our city be more sustainable minute by minute."

Jiyoung Lee, Seoul, South Korea

"The city should improve drainage system, transport system for all kind of vehicles. Therefore, it should make some free spaces such as park, playground for all ages. It should plant trees more & more to make the city greener & habitable."

Azmam Islam Nishan Khulna, Bangladesh

"To make it more sustainable, I think Jakarta (Indonesia) should improve public transport and NMT (non-motorised transport) facilities and also the integration of public transport system."

Martha Kimberly, Jakarta, Indonesia

"We should develop more green spaces in the city as it's getting hotter. The next most important thing is waste management, we still see rubbish scattered everywhere. What we need to fix is actually the people's mentality. We have a beach area but unfortunately it's not well-maintained. The government should also build an area to accommodate street food sellers so the city will look tidier."

Hanny Sutra, Surabaya, Indonesia

"To make it more sustainable there should be proper system for (drinking) water management, transportation (including emergency services, traffic and vehicle security) management and reduce the consumption of energy (electricity). It shouldn't all be in the traditional way, we need to focus on PPP (Public Private Partnership) module and use the technology to make it happen."

Prajwal Rimal, Kathmandu, Nepal

"Love the city, don't hurt her."

Peera Sopitpongstorn, Bangkok, Thailand

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CITYNET

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