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**from Field Studies for the 1st Guangzhou
International Award for Urban Innovation**

Learnings

**from Field Studies for the 1st
Guangzhou International
Award for Urban Innovation**

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Prologue

The First Guangzhou International Award for Urban Innovation (the Guangzhou Award) was successfully concluded in November 2012 in Guangzhou, with 255 initiatives from 153 cities in 56 countries and regions across six continents. Five cities including Malawi's Lilongwe, Korea's Seoul, Turkey's Kocaeli, Austria's Vienna and Canada's Vancouver, eventually won the 1st Guangzhou Award. The Guangzhou Award, jointly set up by the United Cities and Local Governments (UCLG), the World Association of the Major Metropolises and Guangzhou, is designed to honor global cities and local governments' successful practices in innovation and development. It is aimed at sharing innovation experience so as to jointly promote global urban development.

The true value of wisdom is its application in reality. The Guangzhou Award is like a reserve of treasures. After one year of field visits and extensive study, researchers at the Guangzhou Institute for Urban Innovation, scholars and media specialists managed to identify 12 outstanding initiatives and wrote a book entitled *Learnings from Field Studies for the 1st Guangzhou International Award for Urban Innovation*. By closely examining the 12 initiatives, the book showcases the latest development philosophies and innovation practices on urban development. This book is an attempt to study the trends and laws of urban innovation, offering a new perspective for practitioners and researchers on urban innovation. We wish this will be of some enlightenment in terms of theoretical guidance and practical value for global cities to promote environmental protection, social coherence,



equity and sustainable urban development.

These international cities have taken different approaches to foster sustainable urban development. However, by taking a closer look at their urban innovation practices, we have discovered something in common, which are the light of wisdom and the brilliance of humanity. In Seoul of Korea, we could see the strong responsibility of caring for the young generation; in Vancouver of Canada, we could see the great vision and deep insight into sustainable development; in Kocaeli of Turkey, we could see the indomitable spirit in the face of natural disasters; in Lilongwe of Malawi, we could see the great value of mutual aids in the city; and in Vienna of Austria, we could see the magnanimousness and respect shown in the integration of immigrants. I firmly believe that these initiatives would inspire the innovative thinking of all world cities, steer the global urban innovation philosophies and bring light of wisdom to urban development.

Innovation creates our future, and cooperation helps make great achievements. Innovation is the driving force of urban development. I sincerely hope that all world cities would work collaboratively to promote urban innovation and create a beautiful future for global cities.

Chen Jianhua
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Honorary President of Guangzhou Institute for Urban Innovation

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Global Implications of Guangzhou International Award for Urban Innovation

——Case Analysis and Experience Sharing from Candidate Cities of the First Guangzhou International Award for Urban Innovation

The First Guangzhou International Award for Urban Innovation (The Guangzhou Award) was launched in 2012, enlisting 255 initiatives of 153 cities from 56 countries around the world. Finally, the Guangzhou Awards went to Kocaeli of Turkey, Lilongwe of Malawi, Seoul of South Korea, Vancouver of Canada and Vienna of Austria. In addition, the jury selected 10 short-listed cities and 30 deserving candidates.

What exemplary effects can these projects that feature cutting-edge ideas and practices in urban innovation have upon the world? What are the trends of global urban development revealed by the thinking model and operational mechanisms of these projects? Guangzhou Institute for Urban Innovation analyzed the participating projects and produced a reference report for city administrators and experts in urban issues all around the world.

This essay has been written based on the initiatives of participating cities, especially those of the 45 outstanding candidate cities of the Guangzhou Award, including 5 winning cities, 10 short-listed cities and 30 deserving

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candidates, under the background of globalization and urbanization. When producing this report, we visited cities, studied related literature, gathered statistics and made comparative analyses by means of logical deduction. We hope that this essay can provide the world with more concrete suggestions on urban innovation and development.

1. New Challenges and New Trends of Urban Development in the World

Urbanization and the development of cities is a process where the geospatial pattern and social structure of human beings are changing profoundly. According to the *World Urbanization Prospects* released in 2012 by the UN Department of Economic and Social Affairs, half of the world's seven billion population lived in urban areas up to 2011. The population grew most rapidly in large cities and megacities. The report also estimated that there would be 2.3 billion more people in the world and urban dwellers would increase by 2.6 billion by 2050.

Population in the rural areas as well as its proportion in world's total population will both begin decreasing around 2020. This means that the economic and social activities will be distributed mainly throughout the urban areas. The characteristics and conditions of urbanization and urban development in the future will profoundly influence those of mankind's development.

1.1 New challenges for urban development around the world

First, globalization is unbalanced and asymmetrical. Globalization is indeed a process where optimized allocation of resources and production factors are made across the whole world. Generally speaking, all factors can travel and be reallocated globally. However, the reality is that the pattern of the flow of different factors is unbalanced and

asymmetrical. High-end talents are of higher mobility than middle- and low-end ones. Capital travels more easily than labor force. The influence of developed countries on developing countries in terms of consumption model, production model, industrial structure and governance model is greater than that of developing countries on developed countries.

Second, technology advancement and urban development are deeply integrated. The breakthrough and wide application of information and communication technology since the 1980s has contributed to the rapid economic growth in the world. Then in 2008, economic growth stagnated due to the financial crisis which first broke out in developed countries and then affected the whole world. In the future, a new round of economic growth, especially that of the developed countries, will still be brought on by new technological breakthroughs. The third industrial revolution may be stimulated by technological development such as deep and wide applications of information and communication technology, the advent of new materials and advancements in biotechnology. It is a new challenge for the cities to grasp the significant opportunities created by advanced technology, integrating their own needs for transformation with it.

Third, the model and issues of global governance are undergoing changes. As globalization deepens, more and more important issues are beyond the governance range of sovereign states and need to be settled through international negotiation. Global issues, such as dealing with climate changes, maintaining global political, economic and financial stability, and controlling infectious diseases, are confronting all human beings and their cities. Change in the model of global governance will also lead to the profound change of our global political landscape.

Fourth, all peoples are more conscious of their rights and equality. This phenomenon has been named "the massive global political awakening"

by Zbigniew Kazimierz Brzezinski, an American strategic thinker. It has an unpredictable but great impact on a country's political, economic and social systems and even on their international relations. In 2013, many cities in emerging markets were confronted with frequent social riots. International Monetary Fund pointed out on December 14 that the distribution inequality in emerging markets was aggravated. Consequently, the social differentiation and contradictions made the risk of instability within the cities more obvious. The economic growth of 80% from the emerging economies has slowed down.

The complex interaction and feedback of these interdependent factors will impact urbanization and urban development. Globalization will give birth to more cosmopolitan cities and city networks. Technological progress will influence the readjustment of the distribution of production activities in the world and consequently, influence the pattern of industrial division of cities. Issues of global governance, including climate change, will push cities to develop in a more resource-effective and environment-friendly way. The increasing awareness of rights and equality of world's peoples requires cities to adopt more inclusive economic and social policies.

1.2 New trends of urban development in the world

Urban development across the world takes on several new trends under the influence of many factors.

First, the metropolitan area is playing a more and more important role. Metropolises cluster a large proportion of population and economic activities. Most of the members of Organization for Economic Co-operation and Development (OECD for short) are from developed countries. More than 70% of the populations of these countries live in metropolitan areas average annual where each city has a population of over 1.5 million.

Besides, the average annual population growth is 0.8%, much higher than that of the small or middle-sized cities. In some member countries of OECD, the metropolitan area holds half of the country's total population. The GDP *per capita* in the metropolitan areas of the OECD members is higher than the average level of the country. Its GDP also transcends other areas by a large margin. Some metropolitan areas' GDP even accounts for 1/3 or even 1/2 of the total GDP of the country.

However, the situation in developing countries may be different. According to *World Development Report 2009 - Reshaping Economic Geography* from World Bank, the geospatial cluster of population and economic activities in developing countries basically coincides with the historical experience of highly industrialized countries. Therefore, it is expected that there will be a new group of metropolises in developing countries.

Second, technological innovation will be the source of the competitive edge for major cities throughout the world. Sophisticated manufacturing that is related with the third industrial revolution will generate new competitiveness within major cities and promote the readjustment of the global industrial division chain. Many manufacturing cities, which declined during the process of globalization in developed countries and service-oriented cities will be reinvigorated by the development of cutting-edge technologies, regaining relatively long-term competitiveness. However, even within the developed nations, the number of cities that can benefit from technological breakthroughs and remanufacturing will be small.

Whether developing countries can benefit from technological breakthroughs relies on the gap between them and the leading countries in terms of industrial level and technical capacity. Developing countries with smaller gaps may be more easily influenced and promoted by the technological breakthroughs of leading countries. Those with larger



gaps can hardly get powerful and long-term impetus directly from a few emerging middle- and high-end manufacturing cities in the already developed countries.

Third, the influence of cooperation between cities and city networks on competitiveness is getting more salient. Globalization makes the act of a city seeking its own optimal size and maximum efficiency out of date. The competitive nature of a city is increasingly decided by the quality of its cooperation with others and its unique advantage in the city networks. The past experience of OECD members informs us that the optimal size of a city differ from one another because the importance of cluster economies in different industries varies and the composition of different industries within the same city is also different. Another and more important reason is that the global economic network is becoming wider and wider, linking all major hubs and nodes of the world. Future needs for products and services will take on ever more diversified patterns. The timeliness and diversification of product design as well as the flexibility of its production process will be increasingly emphasized. A city's competitiveness will increasingly rely on other participants in the chain of values; enterprises and their departments, communications between suppliers and customers and the efficiency and quality of cooperation as well as the status and core strengths of the city within the city networks. Fourth, inclusive development is becoming a key element of urban development.

For a long time, the city has been regarded as a carrier of economic activities while its social function has been deemed to be a supporting element. However, large-scale and intense mass disturbances took place in many cosmopolitan cities in developed countries in recent years. This reflected that the inclusive factors, including justice, fairness and equality, are becoming crucial to a city's successful operation.

The key to building an inclusive city lies in the development of a high-level social service system whose core is the equalization of social services. The extensive coverage and balanced allocation of high-level medical and educational services fundamentally guarantee the stable social development of the city. This is of particular importance to rapidly rising metropolises in emerging economies. From another perspective, human beings are still the major factor in inclusive development. The coming and flow of migrants, especially immigrants, is a grave challenge to world metropolises. Fusion of immigrants has become as significant as that of the peoples already inside the city. In addition, measures to help socialize the second generation of immigrants are a major way to eliminate discrimination and to prevent immigrants from becoming unstable groups. Fifth, green and low-carbon operation has become the trend in future city development. In coping with the economic crisis, most countries have fixed their sight on low-carbon environmental protection for future development. Major international cities have also jumped on the bandwagon, taking low-carbon environmental protection to be the mainstream of future development and transformation in order to promote sustainable development. Moreover, international urban development is plagued by problems such as population explosion, unchecked growth, environmental pollution, waste of resources and imbalanced social distribution. As these problems become all too obvious, low-carbon development in cities becomes urgently needed. Therefore, low-carbon operations have assumed increasing importance in international urban development.

In the overall planning, the concept of a "green city" has been widely accepted. The United Nations Environment Programme's (UNEP) green economy report, entitled *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, said that a "green city" is a continuation of the pre-existing green economy within cities.



The report specifically points out that, measures taken in areas such as transportation, construction, energy, water, waste, technology and other components should serve to further green development, and that the transformation of traditional cities into green cities can only be realized if such driving forces as political restructuring, policy innovation, market incentives and consumer participation work together. At its most basic level, through changing individual lifestyle and micro-individual behavior, the urban operating mode will be changed so as to achieve a low-carbon goal. This presents a new perspective in the field of urban ecology.

2. Feature Analysis of Outstanding Candidate Cities in the First Guangzhou Award

2.1 The theme focuses on social service and ecological environment, which indicates that wide attention is paid to the sustainable development of society and people's livelihood

It is found that three out of the five award winners are social service projects. Among all of the outstanding candidate cities, those with social service projects account for 24.6%, with ecological environment projects making up 26.3%. The data indicates that social service projects and ecological environment projects assume a higher proportion than the other five themes combined, proving that cities and local governments across the globe are attaching more importance to the sustainable development of people's livelihood and society.

The central purpose of social service projects is to improve government services and people's quality of life. The increasing number of such projects shows that governments are becoming more concerned with the status of citizens as urban subjects and are focusing on the transformation from a management-oriented government to a service-

oriented government. Moreover, with the overexploitation of earth's resources, the ecological environment has seized global attention and sparked a heated debate. Such projects make up most of the recommended projects, showing that current urban construction and development are increasingly concerned with eco-environmental problems and their impact on the sustainable development of cities.

2.2 Social service and ecological environment in developed countries achieve innovative dominance; public administration, housing and transportation in developing countries achieve innovative dominance

Different stages of development in various countries present cities with different requirements for innovative projects. The developing and developed countries enjoy similar proportion in terms of integral city development, 13.5% and 10%, respectively. Themes such as public administration, housing and transportation are far more common in developing countries than those of developed countries. This suggests that developing countries lay more emphasis on the projects regarding such themes, as a result of their national conditions. Public administration aims at improving the government administrative level; housing and transportation are closely associated with people's livelihood and so they are issues that developing countries in lower development stages need to address urgently. Public administration, housing and transportation are highly sophisticated in developed countries and do not bring about urgent problems. Therefore, developed countries fix their sight on dealing with more forward-looking issues with higher technological content – such as the development of smart cities, environmental protection, and the improvement of social services within cities. Therefore the developed countries have a distinct edge in the aforementioned areas. In terms of social service projects, the number



in developed countries is 8.4% more than that in developing countries; in terms of ecological environmental projects, the number of developed countries is 5.3% more than that of developing countries; as for smart city projects with the highest technological content, the number of developed countries is 9.6% greater than that of developing countries.

2.3 Local governments and public sectors as main providers and subjects of urban innovation resources

According to statistics, local governments and public sectors are both main providers and subjects of urban innovation resources. Among the 45 outstanding candidate cities, 41 are mainly sponsored by their local governments.

2.4 The main barriers to innovation are equally distributed; developed countries and developing countries are faced with similar innovation barriers

Among the main barriers facing the outstanding candidate cities, the barriers brought on by the operational parties and implementation parties assume a slightly higher proportion (22.8%) while the remaining barriers share similar proportion. Basically there is no single barrier which dominates. In award winning cities, bureaucratic barriers loom largest. Moreover, statistics show that the main barriers on urban innovation projects are not closely related to the degree of development in the country where the city resides. Therefore it can be inferred that the main barriers to innovation are equally distributed and that developed and developing countries are faced with similar innovation barriers.

2.5 Long-term projects are the greatest in number, indicating that the local governments, as chief patronage of the innovation are focusing on public welfare

Among the 45 outstanding candidate cities, there are 24 award

recipients with long-term projects, including the 5 winning cities each with three long-term projects, which is the result of the roles that local governments play as main sponsors and innovation subjects. Apart from local governments and public sectors, main sponsors such as central governments, NGOs, international organizations, educational institutions have something in common with local governments and public sectors. That is, they all focus on local development with no lucrative purposes. To some extent, most innovative projects can break the shackles of short-term interest, and concentrate on the sustainable development of cities.

3. Experience of International Urban Innovations

3.1 Pioneering ideas are adopted as driving force for urban innovation

Nowadays, pioneering ideas gain a leading place, while obsolete ideas hobble development. Ideas are core elements for cities to gain competitive advantages, and creative ideas demonstrate a city's innovative capacity and are the distinct difference between new-type urbanization and traditional urbanization. Cities no longer passively follow factors such as capital and market; rather, they focus more on the leading roles of science and philosophy to rid the urban development of blindness and irrationality. Through enhanced control over the form, quality and content, cities promote more humane, harmonious, coordinated and health, conscious urban development. Thus, in most cases, idea innovation is the prerequisite for cities to break through bottlenecks and achieve in innovative development. Cases in the First Guangzhou Award brought forth three enlightening ideas:

First, ideas shall take the lead in urban innovation. Be it a new idea or a lesson from previous experience, successful urban innovation tends to require a clear and pioneering idea in order to guide the planning



and implementation of projects and to avoid deviation from the original intention during the process.

Second, the idea must be forward-looking. Excellent urban innovation projects must be geared toward the development trend of the times, the country and the city and be moderately advanced. The forward-looking projects largely result from forward-looking ideas, i.e. an in-depth grasp of the current situation and problems of the city and a general idea of future development trends.

Third, the innovation requires humanistic care. Humanistic care is itself a concept that develops with the times and is only gradually accepted within the wider society. Humanistic care in urban innovation is mainly reflected in its respect for the individual. The fundamental goal of the projects is to make the people happy and serve the public, nothing more.

3.2 Science and technology is the basic motivating power in urban innovation

Among the participating projects of the First Guangzhou Award, technological innovation is an important element of urban innovation. The emergence and application of advanced technology such as networking, energy conservation and environmental protection, diversify the theme, form and content of urban innovation. So it is no exaggeration to state that the fundamental driving force of urban innovation lies in scientific and technological innovation. The following experience of the participating projects of the First Guangzhou Award is worthy of attention:

First, new technology should have broad application prospects. The application prospects of new technology include its marketing prospects which produce economic benefits. In terms of urban governance, its application prospects mainly refer to the efficiency of new technology in improving people's livelihood and well-being, as well as the potential scale of beneficiary groups. Scientific and technological innovations in

participating projects is mainly used in areas such as urban environment improvement, public education and training and enhancing efficiency of public services. Such improvements can greatly benefit urban public interest, hence ensuring a promising application.

Second, innovative projects raise the level of scientific research in cities and spur urban transformation and improvement. Some technology-related urban innovation projects can not only improve people's life quality and achieve sustainable development of the city, but also enhance the city's capacity for scientific research and innovation, leading to urban transformation and upgrading and granting cities development opportunities in an era of knowledge-driven economies.

Third, Internet technology is used to expand service areas. Constant upgrading and rapid spread of the Internet has greatly enriched the city's innovative form and content. The application of the computer and mobile phone networks is very common in the participating projects. As the Internet prevails, many projects are able to materialize electronic data and public services so as to enable more citizens to reap the benefits of urban innovation. This increased accessibility directly improves the efficiency of the projects.

3.3 Institution innovation is treated as the new source for urban innovation

Institutional innovation generate great vigor for enterprises, public sectors and cities alike. Such innovation can be seen, for more or for less, in the outstanding participating projects of the First Guangzhou Award. In fact, institutional innovation offers concrete approaches and basic guarantee for urban innovation. It is also the core link to achieve the necessary shift from innovative idea to innovative practice. More importance shall be attached to the following experience concerning this kind of innovation in the participating projects of the First Guangzhou



Award:

First, the innovation of system and mechanism should be in accordance with the features of the city and be adjusted according to the time and local conditions. Successful institutional innovation is often related to specific targets. This means that its content shall accord with the development stage and the demands of the specific city, it does not exist simply for the sake of innovation itself. The successful experience of one city cannot be applied to all others. City administrators should not imitate others blindly while simply leaving their own conditions aside. The general principle is that institutional innovation must be adjusted according to time and local conditions.

Second, cities shall standardize administrative procedures to improve service quality and reduce costs. At the beginning of 1980s, Western countries promoted the rebuilding of government process by mirroring the business process of enterprises. Since then, it has become a crucial measure for government system reform. Particularly, standardizing administrative processes can regulate government actions and ensure that government will offer high-quality service constantly and steadily, which is the trend of administrative reform as well as an important aspect of the institutional innovation in public sectors.

Third, cities can make efficient utilization of public resources by means of strategic management. Strategy is a core reference system for decision-making, which directly impacts the possibility of the sustainable development of organizations, such as governments or enterprises. Strategic management, aiming to enable organizations to reach their goals, includes two aspects: the formulation and formation of a strategy, the supervision, analysis and control of its implementation according to the plan. Through institutional innovation, governments can adopt strategic management on public resources, which enables them to

utilize resources more pertinently and efficiently and to complete more work at lower costs.

Fourth, a routine mechanism should be established to engage the public in public affairs. A modern model of city management is to promote the public to participate in the overall process of city management, including decision-making, implementation and supervision. In this way, the bottom-up public participation can be combined with the top-down administration management of the government. Public participation does not only lay a solid foundation for urban construction and development, but can also work to improve their managerial levels.

4. Concrete Experience and Cases for Reference

The First Guangzhou Award pooled various innovation projects from many different kinds of cities, from which each city can learn a good lesson. The research group has analyzed and classified participating projects based on idea, positioning, system, organization as well as science technology. From those projects, the research group has five and revealed and typical pieces of experience.

4.1 Place priority on citizens' well-being and development and enhance cities' humanistic care

An outstanding urban innovation project always embodies a respect for every citizen in its idea, highlighting the special position of the "people" from the conception in the early stages to the planning, implementation, evaluation and adjustment in the mid-and-late stages. Such care shows a keen humanistic care.

With the increasing inflow of migrants, Canada's Vancouver was confronted with a surging pressure in both housing and environment. In order to make better use of existing resources, seize the opportunities



and continue to play a leading role in innovation planning, Vancouver put forward the idea “to satisfy everyone’s demand” and carried out the project “Creating a Welcoming and Sustainable Place for All”. In order to realize sustainable development, Vancouver launched the first task force in the world to examine the impact of atmospheric changes on municipal planning and activities in 1988, which laid a scientific foundation for the biological intensive project initiated in 2008. This project aimed at leading Vancouver toward being a more livable city with more sustainable development. As for housing, Vancouver launched the Mayor’s Task Force on Housing Affordability in 2011 to eliminate discrimination and ensure that everyone can have a home of their own. With the successful launch of these projects, Vancouver has successfully created a livable and sustainable environment that has been acknowledged as a leader among utilizing a city’s density and diversity in North America.

Kaohsiung City Government has implemented the “1999 call center project” in order to improve its service quality and build a friendly networking city without obstructions. Based on the idea of “taking people’s trifles as big deals”, Kaohsiung aims to offer better service by accepting phone calls for free. The humanistic care of the project can be seen in the following aspects: first, the project introduces the customer service of enterprises into a government service system and it integrates computer and telephone systems. It establishes a special call center and speed dial channel of 1999 to be easy to remember. Second, it adopts a standardized and automated working process to ensure that each call is answered. It carries out background analysis and survey on to improve their services. Third, the project makes 1999 a toll-free public service hot-line. Fourth, it combines all public service sectors and institutions, including 52 services such as municipal maintenance, street cleaning and hospital emergency aids. Feedbacks will be offered made only after the problems are resolved.

Events related to security are regarded as priorities. In 2008, the year when the project was first put into operation, the center received 16,000 calls. In 2013, the figure rose to 790,000. 1999 call center has since become the most important information and service hot-line for Kaohsiung citizens.

It is estimated that there are about 200,000 teenage runaways in South Korea, a quarter of them ending up going into the porn industry. As the “protection” and “guidance” offered by the government cannot fulfill their wishes and desires, most of these girls returned to their street lives even after being helped by government. Consequently, the City Government of Seoul has launched “All Citizens Preventing Adolescent Prostitution Through Regional Networks” whose core effort is to make the real demand of those runaway girls as the starting point and help them to achieve self-independence. Following this advanced idea, the government has formulated two strategies. The first is to establish a self-empowerment system centering on education and employment, including building self-empowerment schools and training shops, which can help teenagers find jobs after they obtain their degrees. The second is to offer a series of tailored self-independence services. This incorporates one-on-one tutoring for the girls of different educational levels to help them get their degrees and gender-cognitive sexuality education to strengthen their willpower. Those teenagers graduating from the self-empowerment school can start a new life without resorting to sexual trade and this prevents them from entering the adult prostitution industry. This project has also become the model for social service innovation of many cities.

4.2 Set the appropriate targets for the city to make clear directions for development and innovation

Nowadays, the competitions between countries or regions are increasingly manifested as competitions between cities. In the era of



globalization, the key for a city to stand out in the competition is whether it has set accurate and clear-cut targets. Only in this way can we decide the priorities of work and tasks for different stages of the city and make clear the direction for development and innovation.

Perm has long been the production base for military industry, heavy industry and strategic materials in Russia. Weak at commerce, Perm relies greatly on imports of civil products. In order to show its open stance as a modern city and change the stereotype in the minds of its people, Perm positions itself as “the regional centre of culture and knowledge” and carries out a project of “the strategic overall planning”. As one of the implementation methods of city orientation, the overall planning takes 3 years as a stage to draw up measures and projects in line with the municipal budget for the next 12 years, make new urban planning and legal zoning amendments and improve the physical environment according to the population size. The core of the project is to stop the pancake-type expansion of the city and focus instead on its already developed spaces in order to build a compact city and create a comprehensive, highly utilized and diversified urban structure. The project also stimulates people’s participation in the discussion of urban development and policy making. Since citizens play an active role, the government faces less pressure from developers. With the implementation of the project, the experience of Perm draws attention from other cities in Russia and becomes the model of policy development for post-industrial cities in the era of liberal economy.

Medellin, Columbia aims to be “the city with the highest educational level in Columbia”, so it initiates the project of “Digital Medellin” in order to offer new study and communication tools for all citizens and create the possibility for them to participate in innovation and receive an education. Owing to this project, Medellin not only provides free Wi-Fi in

several places, but also creates “open classrooms” in every school where students can learn to use technical application programs through a virtual classroom and teachers can practice information and communication technology after training. Such ‘open classrooms’ become the place for community study after school where residents are invited to learn to use the computer and participate in various learning activities. Some schools even establish the supplementary project of a “cloud school” to support screen equipment connected to a server, which largely decreases the learning costs and improves the expansibility of the project. According to the statistics in 2012, altogether 1.5 million citizens benefited from the project of “digital Medellin” and 50% of the citizens in Medellin could use the internet regularly, 15% higher than the national average.

4.3 Concentrate on administrative reforms to improve the quality of service and lower the costs

Administrative reform is a common item in “The Guangzhou Awards” evaluation and election. Some cities rely on administrative reform to guarantee the project’s implementation; others directly take administrative reform as a main objective so as to tackle a series of problems within the government. No matter where the project belongs, the administrative reform for increasing public participation improves the quality of urban public service without adding any administrative costs.

In order to alleviate citizens’ administrative burdens, lower the costs and ensure the quality of public service, the council of Aviles, Spain began “the standardized design project of administrative procedures in the city council”, a fundamental reform of administrative procedures involving all institutions, staff and officials elected by the people. This project standardizes and makes electronic, all working processes, tasks and duties as well as simplifies the audit work. Applications, complaints and



suggestions raised by citizens are integrated into this new work system. All files are automatically identified and classified without any need for manual intervention. Files are delivered among administrators through a reminding and informing system with electronic signatures to save the time. All reminding, informing and final solutions are integrated into a standard form. From the beginning to the end, all exchanges of information and files in administrative institutions occur in an electronic way, which saves plenty of paper. This project ensures a transparent administration, easy payment, effective communication and convenient information acquisition, meeting demands for public service towards a western society and demonstrating a new image of Aviles. It is a truly successful innovation of their administrative system.

Impacted by the global financial crisis in 2008, Spain has been confronted with a serious economic crisis with increasing public deficits and loans. The project of “public management based on economic contraction and strategic budget” is carried out in Bilbao. The municipal government formulates a control table of strategic focus and budgeting to promote the project’s implementation: collecting information in all aspects through cooperation between different departments in the municipal government; finding out citizens’ immediate demands by questionnaire surveys and target group studies. Then, the municipal government budgets according to strategic targets and action plans in order to nail down key fields of the project and the late financial control. Additionally, the municipal government draws up strict guidelines with analysis and detection worked into aspects of implementation, resource usage, efficiency and project quality. The data is published on their official website, thus winning the trust of their citizens. This project perfectly integrates the development of public service and urban renewal, which is phenomenal and highly innovative. In 2011,

Bilbao unprecedentedly realized zero debt and zero deficits; it maintains favourable operation, service and investment, thus becoming a model for Europe and the world at large in this era of post-financial crisis.

Canoas, Brazil adopts a centralized management mode for the long run. Citizens’ rational demands are not met, and the public confidence in public utilities decline day by day. In order to attract the attention of the general public and maintain public policies, the municipal government is carrying out the project of “public participation system”, recording the details of every participant including basic information, participation record and demands and services. The list is updated monthly and provides the fundamental information for their annual review. The mayor, deputy mayor and municipal secretary attend “Street Town-hall Activities” every Saturday morning to receive citizens and hear their advice. An electronic platform, “virtual assembly” has been established for the mayor and the municipal secretary to discuss public problems with citizens at appointed times. Besides, there are subsystems such as public participation in capital budget, plenary session of service scope, committee on economic and social development, public hearing, council, urban congress, etc. Public participation is applied to all governmental areas in Canoas, which not only serves to reshape the citizens’ confidence in public management, but also generates a new bunch of confident citizens. Non-governmental organizations have become major cooperative partners for the municipal government.

4.4 Establish new agencies to provide organizational support for innovation

To solve the prominent problems in the process of development, city and local governments often need to perform new functions and provide new resources, thus the government’s old organizational framework may no longer meet the new requirements. Under such circumstances, the



city needs to establish new agencies to provide organizational support for continued innovations.

Kocaeli, Turkey, located in an earthquake zone, is the epicenter of the Marmara earthquake which caused massive casualties in 1999. Since then, Kocaeli is determined not to live with the risks of earthquakes no longer and starts taking precautions against earthquakes so as to reduce possible damages. Therefore, the Kocaeli government, Disaster and Emergency Response Center of Turkey and Chamber of Industry and Commerce of Kocaeli jointly implemented the project "Prepare Before It's Too Late: Learn to Live with Earthquake". This effort combines two distinctively separate but complementary entities, namely, the comprehensive monitoring system on Earthquakes which is to collect data as well as analyze earthquake risks and the earthquake education programs for citizens. In the past, the disaster and emergency response management in Turkey merely focused on scientific research, leaving education and propaganda behind the scenes. As the project begins, the education and propaganda portion has been put at the top of the agenda, building a closer relationship between the state government and society. With the help from the education departments, citizens have raised their awareness of defending against earthquakes and learned a lot about earthquakes, skills on earthquake prevention and first aid. A large delegation of representatives from other cities in Kocaeli Province, institutions of high learning as well as foreign countries, are attracted to visit the center of the project to learn and share technological information.

The city of Birmingham, the UK has in recent years been challenged by serious problems such as high unemployment rates, education inequalities and uneven health conditions for its citizens. To solve these problems, the city government and the University of Birmingham began

cooperating in an innovative way, sharing and discussing best measures and policies for public service under a common strategic framework. Together they implemented the "Institute of Public Service" project. The project uses the academic resources of the university to support public sectors in and out of Birmingham in making policies and research. They do this by providing services, doing academic research and analyzing data in the form of student internships. The institute is not only a neutral place for different entities to find solutions and solve problems together, but also a public forum for discussing policies. Through governmental cooperation, the University has added courses on present city problems into the curricula, building bridges for the students to access job markets later. On the whole, since the founding of the institute, public policies and life quality of the Birmingham citizens have improved and the city is becoming the center of public policy innovation in England.

4.5 Promote urban sustainable development driven by scientific innovation

The research team holds that scientific innovation includes not only original scientific invention but also the creative use of existing technologies. Apart from innovative programs focusing on technology, many winners of the first "Guangzhou Award" have made creative utilization of the existing Internet, resource-saving and green technologies, which effectively promote the sustainable development of the city's environment, economy, society and government.

As a mega-polis with a permanent population of more than 10 million, Seoul produces an enormous amount of garbage every day. The garbage not only brings difficulties in classification and clearing, but also debases the life quality of the citizens as it generates polluted water and gives off foul odors in the process of transportation and disposal. To solve the problem, the city's government has implemented the



project of "City of Sustainable Development-Establishing Environment-Friendly and Resource-Recycling Facilities in Downtown Seoul". In the project, all garbage treating facilities are creatively built underground by using advanced technologies. On the ground, open performance places and parks are built; anaerobic digestion, which was first used in treating organic waste water, is now used in treating food waste as well as the waste water it produces. This greatly enhances the collection of organics and the bio-gas production. Mean while, the heat-accumulating combustion oxidation device has also been used for deodorization for the first time. Apart from having the capacity of disposing 98 tons of food waste per day, the underground garbage treatment facilities can also produce usable electricity for 2,500 households. On the whole, the project has made Seoul much cleaner, gotten rid of the foul smell in garbage treatment and has eliminated the possibilities of household garbage and waste water being discharged into the sea at its source.

Vienna, Austria has been actively seeking out ways to improve ecological environment and life quality and has become an international forerunner in this regard. To accumulate more experience and accomplish its transformation into a smart city, Vienna implemented the project of "Smart City Vienna". Based on the core theme of Europe's SET Plan, the project aims to achieve the following objectives: overall management of the city's energy resource system, highly-efficient production and supply technology, smart Internet and energy supply, and "reactive" buildings requiring low energy consumption and the development of an environmentally-friendly, energy-efficient and low-carbon traffic system. These objectives are embodied in the following three fields: a) urban planning, construction, production, traffic and technological framework; b) city network system of energy resource for both supply and demand; c) the evolution of the energy system, geographic and logistics structure and integration of citizens.

The prominent advantage of the project is that by closely connecting the progress of the project, the goals of energy resource and climate protection, demo programs of smart-city development and city development planning, the city's space, social and economic structures are given due consideration and the city achieves the overall transformation and desired improvements driven by scientific innovation programs.

A major work target of Taipei's city government is to provide all-weather high-quality and convenient services for its 2.6 million local residents, 5 million Taiwanese who travel frequently in and out of Taipei and the 6 million international tourists on average received each year. Their project, "Go beyond the Future: Integration of Cloud Computing Services in Taipei" , is a major move toward achieving this target. Through creative use of Internet technologies, the city government of Taipei has extended methods and updated contents of public service. Included are: a) One-stop service - 64 programs from 16 categories have been successfully integrated and their related information management processes adjusted accordingly. People can now receive the services through mobile phones, PCs and TVs. b) 24-hour uninterrupted service - most government information and services can be acquired on the Internet through certain APPs. Thus human labor is reduced and round-the-clock service achieved. c) By providing information to the public, the government can become better known to its citizens and can spread the information more efficiently. Through exploring these new applications, more citizens and organizations are now engaged in public affairs which have enhanced both governmental transparency as well as public participation.

Cooperative Preventative Measures Against Disaster

—Inspirations from Kocaeli's "Prepare before It's Too Late: Learn to Live with Earthquake"

Turkey is regularly hit by earthquakes. In order to better predict earthquakes and reduce their threats to human life and property damage, on January 1 2012, Kocaeli city established the Kocaeli Seismological Monitoring and Earthquake Education Center with the help from the municipal and national governments, as well as NGOs. The purpose of the center is to combine the strengths of various parties in order to better deal



Earthquake education play *Moving World*

with earthquakes. In November 2012, less than one year later, its initiative "Prepare before It's Too Late: Learn to Live with Earthquake" was selected as one of the five winning cities of the 1st Guangzhou International Award for Urban Innovation from a list of over 200.

1. Origin: City Characteristics and Problems

1.1 Regular earthquakes cause large loss of life and property damage

Turkey has been hit by a number of large earthquakes due to its geographical location between the Arabian and Eurasian plates. While the Eurasian Plate is relatively stable, the Arabian Plate is slowly moving north at a rate of about 1 inch (2.54cm) every year. This movement has created two large faults: the North and East Anatolian faults. Turkey is located on the North Anatolian Fault with around 96% of its territory situated in a seismic zone. This means the tectonic plates will continue to change the country's topography and bring with them a series of natural disasters which include earthquakes.

Kocaeli (İzmit) is located in northwest Turkey, and is the capital of Kocaeli Province. It has a population of around 1.6 million (2011), covers an area of 3,505 square kilometers, and has a GDP per capita of 33,620 US dollars (2011). Kocaeli has a very advantageous geographical location. Its city center is just 85 kilometers from Istanbul, it is home to a busy port, and its key roads and railway lines connect it to the rest of Eurasia. It is one of the most important industrial cities in the Marmara region and even the whole country.

However, Kocaeli is also located in a seismic zone on the west end of the North Anatolian Fault. On the morning of August 17, 1999, central and western Turkey was hit by a 7.4 - magnitude earthquake; Kocaeli was at the very epicenter. On the evening of November 12 of the same

Major Earthquakes in Turkey 1900–2014

Year	Month/Day	Magnitude	Death Count	Location
1903	04/28	7.0	3,560	Malazgirt
1912	08/09	7.8	3,000	Mürefte
1914	10/03	7.0	4,000	Burdur, Kilinc Keciborlu, Isparta
1930	05/06	7.6	Unknown	Turkey
1939	12/26	7.9	33,000	Erzincan
1942	11/26	7.6	4,000	Ladik
1942	12/20	7.3	3,000	Niksar, Erbaa
1943	11/26	7.6	4,000	North of Ankara
1944	02/01	7.2	4,000	Bolu
1946	05/31	6.8	2,000	East Turkey
1953	03/18	7.5	1,000	West Turkey
1966	08/19	6.9	2,396	Varto
1970	03/28	7.2	1,086	Gediz
1975	09/06	6.6	2,385	Lice
1976	01/24	7.5	3,840	Muradiye
1983	10/30	6.9	1,155	Erzurum, Kars
1999	08/17	7.4	17,118	Kocaeli (Izmit)
1999	11/12	7.2	321	Northwest Turkey
2006	05/12	7.2	120	Bolu
2011	10/23	7.2	582	North Turkey

Data Source: CENC, China Seismic Information

year, western Turkey was hit by another earthquake, measuring 7.2 on the Richter scale. The two earthquakes affected an area of 150,000 square kilometers, around 1/5 of the total country. An area of 3,600 square kilometers was hit with a seismic intensity of IX or above. The main shocks were followed by several aftershocks spread about 200 kilometers along the North Anatolian Fault. The strength of the earthquakes and the large scale ruptures on the surface resulted in large



Scene of the Earthquake

numbers of deaths and damage to property. 18,000 people were killed, 43,000 injured, and 3 million left homeless. The total damage exceeded 20 billion US dollars, covering 7-9% of the nation's GDP. The earthquakes caused Turkey's GNP to drop by 2% that year and the output value for the area hit by the quakes to drop by 30%. It's easy to see that natural disasters, mainly earthquakes, form the largest threat to public safety in Kocaeli and also hinder the city's sustainable development.

1.2 Earthquake after - effects greatly affect everyday life

Due to a lack of knowledge on how to deal with earthquakes and also a lack of provide early warnings, large earthquakes created huge losses in terms of lives and property damage in Kocaeli. Moreover, they also created long term problems for survivors. According to psychology experts, since Turkey experienced the two large earthquakes and

aftershocks which claimed many lives, many citizens have developed “post-earthquake trauma” which is a form of PTSD. Symptoms include feeling depressed all day, an unwillingness to speak, a sudden strong interest in religion, spending long periods wandering outside, a fear and unwillingness to fall asleep at night, as well as other signs of nervousness. In extreme cases it can lead to serious mental disorders and suicidal tendencies.

At Istanbul Technical University's conference on post-earthquake trauma rehabilitation, a report was published which shows that after experiencing repeated earthquakes, whether it be survivors from inside or outside the immediate disaster zone, the number of people seeking medical or psychiatric help has increased.

Kocaeli's close proximity to Istanbul has helped the latter in its research into understanding the effects of earthquakes on Kocaeli. An investigative report published in Turkey showed that in Istanbul, which has a population of over 10 million, one tenth of the population were affected by the fear of earthquakes so much that it had begun to affect their sex lives. They no longer slept naked, but instead wore sports clothes that would make it easier for them to escape from the house should an earthquake strike. An investigation conducted by the Istanbul government and Bogazici University's Kandilli Observatory and Earthquake Research Institute, and published by the municipal government, showed that 58% of residents had changed their living habits due to earthquakes and the threat of possible future earthquakes. For instance, they no longer close the door when washing or using the toilet in case it hinders their escape. Of the 2,500 Istanbul residents asked, 49% said they had trouble sleeping at night due to the worry of an earthquake stroke, 46% said they had already found a safe place to hide for their families if an earthquake strokes, 12% said they had practiced

an emergency escape plan with their whole family, and 26% said they would leave everything up to fate and god's will.

1.3 As the regional industrial center, Kocaeli has a strong economy and research capabilities

With its relatively strong economy, Kocaeli has the ability to provide the financial support necessary for innovative urban projects. Thanks to its location, Kocaeli is one of Turkey's cities with the fastest industrialization since the country was found. 69.9% of the city's GDP comes from industrial production, earning it an important place in Turkey's industrial sector. Kocaeli's pillar industries include cement, phosphate fertilizers, petrochemicals, oil refining, tires, textiles, chemical agents, and paper. Its paper production accounts for 50% of the country's total, and the chemical industry for 28%; both holding the highest share of their respective markets in Turkey. Also ranking high are the city's computer



| Seismological Monitoring and Earthquake Education Centre

hardware, automobile, machine manufacturing, and stone mining industries. Nearly 10% of the country's power consumption is used in Kocaeli's industrial production. The city currently has 12 industrial districts planned, with 7 already in operation.

18 of the country's top 100 enterprises are from Kocaeli, and their manufacturing total accounts for 13% of the country's total exports. Kocaeli is also home to over 100 foreign-owned enterprises, the majority of which are German. A number of international leading enterprises have established branch offices in Kocaeli, including Tüpraş, Hyundai, Ford, Honda, Isuzu, Pirelli, Goodyear, Pakmaya, Aygaz, Milangaz, Petrol Ofisi, Kordsa, Çelikkord, Nuh Çimento, Marshall Genel Müdürlük, Polisan, CBS, and Mannesmann Boru.

Also worth noting is that the income percapita for Kocaeli has ranked first in Turkey for the last 10 years and is 2.5 times that of the country's average. Fiscal revenue from the city accounts for 17.41% of the county's total and ranks second highest in Turkey. In 2011, Kocaeli's GDP per capital was 33,620 US dollars, much higher than that of China's major cities. According to statistics from 2013, Shenzhen ranked the highest in China with a GDP per capita of 22,198 US dollars, and Guangzhou came second at 19,800, but both these figures are well behind Kocaeli's.

In addition to its prosperous economy, Kocaeli also boasts rich education and research resources, providing the scientific and intellectual support needed for urban innovation. Kocaeli University, the nearby Sabanci University, Marmara Research Center, Gebze Institute of Technology, TÜBİTAK Marmara Technopark, Science-park of Gebze Organized Industrial Zone, and Kocaeli University Technopark have provided solid support for the city's technological and educational development.

Kocaeli's economy and education and research sector support and promote the development of one another, providing the city with rich innovation resources.

1.4 There is an active central government department and NGO

In addition to the local municipal government, Kocaeli also has a highly efficient and specialized central government disaster response department, the Disaster and Emergency Management Presidency working under the Prime Ministry (AFAD), as well as the regional NGO the Kocaeli Chamber of Industry (KCI). These three bodies work together to form a foundation for the city's response to natural disasters.

1.4.1 Central government organization: Republic of Turkey Prime Ministry Disaster & Emergency Management Presidency (AFAD)

Due to the frequency of natural disasters, Turkey puts great emphasis on establishing laws and institutions of disaster response. In 1939, after the Erzincan Earthquake claimed 33,000 lives, the Turkish government released a 7269 article act relating to "adopting countermeasures and



Dissuing Textbooks to Local Students

providing assistance for natural disasters endangering public safety”, which filled the legal gap in this sector. In 1988, the government took further legislative measures and released their *Regulation on Principles of Organizing and Planning Emergency Aid for Disasters*. This ensured that all state organizations would provide the fastest, most efficient help possible to disaster hit zones.

The 1999 İzmit earthquake, which hit on August 17, became a turning point for disaster management and coordination in Turkey. The large number of deaths and area of damage caused the government to rethink their original disaster management system. The resources and ability to deal with various natural disasters needed to be consolidated into one organizational body. The Directorate General of Civil Defence operating under the Ministry of Interior, the Directorate General of Disaster Affairs operating under the Ministry of Public Works and Settlement, and the Directorate General of Turkish Emergency Management operating under the Prime Ministry were closed and their powers consolidated into one single authority, the AFAD, which was formally established in 2009. The AFAD is a flexible goal-oriented organization whose mission is to ensure that all institutions and organizations with the ability to aid in post-disaster reconstruction can do so as quickly and efficiently as possible. The organization promotes cross-sector cooperation to ensure the rational use of regional resources. Its strength lies in its ability to cooperate with various social bodies on different levels. With this new framework, Turkey gained a new disaster management model, one that puts risk management before crisis management. This has become known as Turkey’s “Integrated Disaster Management System”. It reduces the damage caused by natural disasters and emergencies by identifying potential crises and risks in advance and taking the appropriate actions, ensuring the efficiency and coordination of the response, and comprehensively carrying out post-disaster recovery work.

The AFAD works through the Provincial Disaster and Emergency

Directorates that are directly subordinate to Governor’s Offices in each province, and through the Civil Defence and Rescue Unit Directorates that are active in each province. The AFAD is the sole competent authority concerning disasters and emergencies, which collaborates with the Turkish General Staff, the Ministry of Foreign Affairs, the Ministry of Health, the Ministry of Forests and Hydraulic Works, and other relevant ministries and non-governmental organizations, depending on the nature and magnitude of the disaster or emergency. Since its founding, it has executed an effective and fast response during the Elazığ, Simav and Van earthquakes, and has managed to dress the wounds of disaster victims through successful post-disaster recovery policies. During the floods which hit Antalya, Samsun, and Sinop, it coordinated with relevant institutions as soon as possible, and its work to normalize life in the hit areas was completed quickly.

With its high-quality, professional and specialized personnel and technical equipment, it has extended a helping hand whenever it was needed, from Haiti to Japan, from Chile to Myanmar, and it has successfully carried out evacuation and humanitarian aid operations during the social upheavals in Tunisia, Egypt, and Syria, winning it widespread recognition and praise from all around the world.

1.4.2 Regional NGO: The Kocaeli Chamber of Industry

The KCI was established in 1989 and is headquartered in Kocaeli with three branches in areas including Gebze. It has a permanent staff of 30 providing services for 2,300 member enterprises. Its main task is in assisting its members in developing in the domestic and international markets. In order to meet the international demands of its members, the KCI regularly organizes commerce delegations to visit other countries, as well as organizing exhibitions and other B2B events overseas.

In addition to providing the services required by law, the KCI also provides

services meeting the common needs of its members. For example, every year it holds the Match4Industry two-way business conference. At the 2013 event, 310 business meetings were held by enterprises from industries including automotive, machinery, metals, plastics, packaging, construction, electronics, and software and information etc. There were also 59 international enterprises in attendance from countries including Australia, Austria, Germany, and the Netherlands. In addition, the KCI also holds country theme days where it showcases foreign markets and business opportunities. It uses platforms like this to build strong cooperation relationships with the Turkish Foreign Economic Relations Board, Ministry of Economy, and development institutions in other countries. It also continually promotes industrial and commercial business opportunities in Kocaeli to visiting trade delegates, and consulates and embassies in Turkey.

In addition to providing business development services, KCI also provides support to certain research and public welfare projects. It cooperated with a local training and advisory body to conduct a case study on Pirelli Turkey, looking into a sustainable supply chain development model for local SMEs. It aided 30 suppliers by helping formulate the "Pirelli Supply Chain Sustainable Development Program". Pirelli regularly monitored the progress of SMEs involved and directly reported to the project management. It also launched the UMEM Skills' 10 project to combat Turkey's 10% average unemployment rate. The project includes four major activities: strengthening infrastructure, analyzing the needs of the market, implementing training courses, and matching trainees with enterprises. So far, 101,093 unemployed people have been given internships, 75,380 have been trained, and 42,805 of those students have gained employment after their internships.

2. Innovative Action: Project Concept and Implementation

The 1999 İzmit earthquake had a huge impact on the local area. The Kocaeli Seismological Monitoring and Earthquake Education Centre had three main issues to deal with: forecast and knowledge dissemination before the earthquake, emergency response during the earthquake, and rescue work after-earthquake.

2.1 Prepare before it's too late: learn to live with earthquakes

Realizing that natural disasters are the main factor hindering the sustainable development of Kocaeli, and Earthquakes will continue to strike and affect the area, the city determines it can no longer live with unknown risks. The Kocaeli Seismological Monitoring and Earthquake Education Centre initiative was launched on January 1, 2012, and it focuses on seismic study, earthquake plans, and earthquake education. Various government departments and all of the society actively participate in this lifesaving initiative, making preparations for possible future disasters. It has a simple yet catchy slogan: "Prepare Before It's Too Late: Learn to Live With Earthquakes". Building on the knowledge of those who have experienced earthquakes, it started off at the most basic level, making earthquake preparation the duty of all sectors of the society, as this is key to helping those living in areas under threat of earthquakes.

The main aim of the initiative is to collect data from the city's 27 "ground motion stations", conduct assessments and evaluations, record various earthquakes characteristics, promote the formation of a local earthquake database, earthquake risk maps, and emergency response plans, and promote the implementation of earthquake resistant construction plans and the development of an efficient seismological monitoring system, all with the help of the Seismological Monitoring and Earthquake Education Center. At the same time, the public can increase their knowledge on

and capabilities for earthquake preparation through the monitoring-related educational events and other activities including an earthquake simulator, the theatre, seminars and lectures.

As the initiative progresses, Kocaeli has seen significant progress made in related areas: a) Before buildings are constructed, a geographical structural analysis must be conducted so as to construct the building with adequate shock-proofing. b) PTSD solutions are carried out for the public. c) Emergency rescue plans are formed for various important areas. d) Legislative work is promoted in the sector.

2.2 Cooperation is realized under the theme of “Partnership and Civic Engagement”

The Kocaeli Seismological Monitoring and Earthquake Education Centre initiative can be said to be innovative due to the fact that this is the first time in Turkey that a local government (Kocaeli municipal government), the central government (AFAD), and NGOs have worked together under a united leadership in the public services sector. Kocaeli municipal government provided 70% of the necessary capital and is in charge of the project’s sustainable operation which included hiring 6 technical personnel members and constructing a centralized data network. The KCI provided the remaining 30% of the capital and coordinates work with the private sector. AFAD provides technical and equipment support during the project launch, and supervises earthquake projects in other parts of the country.

There are a number of other organizations that provide supplementary assistance to the initiative, including NGOs (Istanbul Youth Assembly, Association of Persons with Disabilities in Turkey), higher education institutions (Boğaziçi University), research centers (TUBITAK), private sector representatives, Kocaeli City Council and the Directorate of National Education Kocaeli Province etc. Boğaziçi University provides technical training



Students Watching Earthquake Education Play *Moving World*

for workers; TUBITAK provides the project with technical assistance; Istanbul Youth Assembly and the Association of Persons with Disabilities in Turkey undertake part of the volunteer work and publicize the initiative amongst student groups and in schools based on an agreement with the Directorate of National Education Kocaeli Province and municipal government.

When the initiative was first put into effect, it put forward the theme of “Partnership and Civic Engagement”. As the project progressed, it brought the local government and the people closer together which benefited both parties. Thanks to this, the project can be said to have also had an innovative effect on public governance and services.

2.3 Monitoring and educating are integral parts of the project

The initiative managed to combine two separate but mutually



| Seismological Monitoring Station in the Shape of the Trophy of Guangzhou Award

complementary elements together: the integrated seismological monitoring system which collects data and analyses earthquake risks, and the education system which is responsible for the propagation of knowledge and awareness.

2.3.1 Integrated seismological monitoring system

The integrated seismological monitoring system monitors earthquake precursors using a range of equipment including water level gauges, seismographs, and electromagnetic wave measuring instruments. It also uses information from water surfaces, water temperatures, and any unusual activity of flora and fauna. 27 ground motion stations are located at strategic positions throughout the city such as residential communities, industrial districts, reservoirs, and municipal government buildings. Data from each station is sent to the chief monitoring station and the Turkey

Earthquake Data Center, which are linked to the AFAD to aid in data collection and the construction of the earthquake prediction network. At present, an area of 3,600 square kilometers is being monitored with an accuracy of over 90%. The stations also maintain constant real-time contact with local research centers. In seismological monitoring system is the first network in Turkey to be operated by a local government.

Thanks to cooperation between organizations, in seismological monitoring and simulation capabilities, Kocaeli is far ahead of any other region in Turkey. The data base was developed on that of the Turkey Earthquake Data Center and the earthquake simulator is an improved version of AFAD's. TÜBİTAK has held numerous conferences and technical study visits, and the training provided by Boğaziçi University has further improved the capabilities of the technical personnel.

2.3.2 Public education system

Due to a lack of education on earthquakes, the people of Kocaeli had accepted or formed volumes of misconceptions about the dangers of earthquakes. Education is the most efficient method of solving this issue as it targets the very root of the problem, and so the initiative begins educating at the primary school. A play entitled "Moving World" tours the city. It teaches primary and middle school children about earthquake preparation, and the importance of earthquake knowledge by combining simulated scenarios with the performing arts. The specialized classes for disabled children have provided hundreds of children and their parents with practical information. As the final part of the education initiative, the earthquake simulator allows people to experience what an earthquake feels like. The center also distributes earthquake emergency kits and teaches the public how to use and form their own first-aid kits.

In the past, Turkey's seismological monitoring merely consisted of scientific research; education and the spread of knowledge were not

even considered. After the launch of this innovative project, particularly after the launch of the plays, the spread of theoretical and practical knowledge began to take priority in terms of earthquake preparation and risk reduction. Thanks to the efforts mentioned above, along with previous knowledge and lessons learned, earthquake education in Kocaeli has seen remarkable progress.

3. Results of Innovation: Performance Evaluation and Existing Problems

3.1 A complete seismological monitoring system formed, and a forerunner in earthquake education in the country

Thanks to the detailed and accurate data collected by the seismological monitoring network, *the Kocaeli Earthquake Risk Map* and *Kocaeli Municipal Regulations on Compatible Construction with the Ground* were compiled and published. The data is also relayed to the national



|Earthquake Simulator

earthquake monitoring network to assist in the compilation of national earthquake risk maps.

The Seismological Monitoring and Earthquake Education Center has also assigned people to conduct on-site visits and regular check-ups on the number of educated individuals. This data forms an important indicator in the project. Over 40,000 students have received earthquake education and over 10,000 have received training in the simulator. The disabled children's program has also taught almost 1,000 children and their parents about earthquake preparation, response, and first-aid. The center has welcomed over 10,000 visitors so far.

Although it has not been a long time since the operation of the Seismological Monitoring and Earthquake Education Center, it has already been visited by a large number of domestic and foreign government and higher education delegations, as well as those from other cities in Kocaeli Province, with whom Kocaeli shared its technical information and experience. The city has also made use of official media (newsletters, social media, videos etc.) to further enhance its publicity.

3.2 Problems faced by the seismological monitoring and earthquake education center initiative

3.2.1 Potential safety hazards caused by inferior building quality still remain

After the large-scale earthquake hit in 1999, building quality became one of the most talked about topics in Turkey. Many of the mosques and buildings built two or three years before crumbled during the earthquake. Some of the older historic buildings however managed to stay erect. It was obvious that the majority of buildings that fell or were badly damaged were either illegally built or not built to standards. After conducting on-site investigations and comparing the aftermath to that of the earthquake

which hit Los Angeles a decade or so before, experts quickly realized that poor building quality was the reason behind the huge casualties. Greedy builders had pocketed the public's money and constructed sub-standard buildings which had aided the earthquake in its destruction.

While the Seismological Monitoring and Earthquake Education Center Initiative launched in response has realized the importance of monitoring and education, it has not yet been able to keep up with the speed of urbanization and deal with the poor quality of construction. This means this hidden public hazard still exists. The next time an earthquake hits, Kocaeli could once again be facing large deaths and damage.

3.2.2 The comprehensive effectiveness of the seismological monitoring system still needs improving

The seismological monitoring system plays an important role in collecting, summarizing, and analyzing data which is a vital step in earthquake prediction and risk reduction. But one of the most innovative characteristics of the project is that it manages to find further applications for the knowledge that was previously only being used for research. Through cooperation with various organizations, Kocaeli has successfully managed to combine monitoring with education. But the research group believes that the monitoring system can also be used in areas outside of education to better make use of its comprehensive strengths and to better serve Kocaeli and the rest of the country.

3.3 Forming laws and regulations and sharing data as the next step

To further develop the comprehensive effectiveness of the Seismological Monitoring and Earthquake Education Center initiative, Kocaeli has actively looked into service areas other than education with laws and regulations as well as data sharing being the main directions.

In terms of laws and regulations, the data collected by the center has



| Seismological Monitoring with the Geographic Information System

been used as a basis for the *Reformation of the Lands under the Risk of Earthquakes*. Information and research produced by the center was also used in the formulation of an *Emergency Action Plan* designed specifically for disasters.

In terms of data sharing, the center has mainly provided data and research results to the public through the publishing of *The Kocaeli Earthquake Risk Map* and *Kocaeli Municipal Regulations on Compatible Construction with the Ground*. The center also works closely with higher education and research facilities to conduct simulated building and earthquake research to predict the damage to specific regions and key facilities under various magnitudes of earthquake.

4. Lessons and Revelations of the Program

Disaster prediction and risk prevention is a challenge all cities face. Kocaeli's innovation provides valuable experience in terms of inter

agency cooperation and educating citizens on natural disasters.

4.1 Focusing on education to better cope with natural disasters

Based on experience, the public's level of awareness and ability to deal with disaster has a direct effect on the reduction of damage and on their ability to provide effective and efficient self and mutual help.

A city can develop disaster preparation and risk reduction education based on the natural disasters most likely to occur in a region with its specific climate and geographical conditions. At the same time it should take measures to improve public awareness to further improve their abilities to deal with natural disasters.

4.2 Constructing a disaster and emergency network and early warning system

Collecting data and analyzing earthquake risks is one of the core roles of the Seismological Monitoring and Earthquake Education Center initiative, which has helped facilitate local earthquake database, earthquake risk map, emergency response plan, earthquake resistant construction plans,



| Earthquake-field

and efficient seismological monitoring system.

Local governments can develop an information gathering and early warning system covering public safety issues such as natural disasters and public health incidents. The data from such a system can be used to formulate public safety maps to analyze the risk of incidents happening in various regions, as well as the type of incident likely to happen in each area. This can greatly improve a local government and relevant departments' ability to assess the safety situation for the whole city and individual areas, as well as provide statistical support for the formation of emergency contingency plans.

4.3 Promoting interagency partnership and civic engagement

The idea of "Partnership and Civic Engagement", which is emphasized by the initiative, can also serve as valuable experience. Inter-agency cooperation not only increases public services, but also reduces the financial investment needed from the local government, increases the pool of human resources and technical support, and further develops the coverage of services.

The public sector can lead the way for inter-agency cooperation on major topics affecting city development. When conditions permit, NGOs and the private sector can be invited to take part in public policy making and providing public services, thus reducing the coordination costs of the public sector in the private sector, further fleshing out services provided, as well as increasing service efficiency.

In terms of organizations working together to deal with disasters and emergencies, Turkey's Disaster and Emergency Management Presidency can also serve as an example to other cities. For example, an emergency link organization was established under the central government, branches in cities throughout the country take responsibility for carrying out work under its management and guidance, while NGOs,



the private sector, schools, and research institutions are obligated to provide services to this organization, thus pooling together the full strength of the society to deal with disasters and emergencies.

4.4 Increasing contact between the government and the public, improving the government's public image

A government's image is the public's overall opinion of its actions formed on the basis of understanding and experience. It is both a reflection of the public's subjective opinion, and the government's own performance. It is a unique social resource which plays a huge role in determining a government influence. It is one of the factors which determine whether a government's goals and intentions are accepted by the public and to what degree. Thanks to the Seismological Monitoring and Earthquake Education Center initiative, Kocaeli's municipal government increased contact with the public and understanding between both sides, as well as improving the relationship between the government and the public.

When making public policies, local governments should consider the public's opinion and reaction to government actions and include these in the evaluation system for its projects. It is also important to focus on work attitude and methods used during projects. Governments need to see each interaction with the public as an opportunity to increase understanding between both sides, as well as a chance to improve their own image. This is an effective method to increase a local government's influence.

Journalist Observation

Kocaeli, City of Quakes, Does Extreme Quake-proof Work

The journalist had to feel everything during his two and a half-day visit to

Turkey. At 03:02 a.m. on August 17, 1999, a powerful earthquake, Richter Scale 7.4, listed Turkey in the World Top 10 Documentaries of Natural Disasters. The 47-minute documentary recorded what happened on that tragic morning. The refinery was devoured by the heavy fire. The port was flooded with water. Tens of thousands of people were buried in the rubble of collapsed buildings. It is one of the worst natural disasters of the 20th century. At the same time, it is also a story about scientists warning of a larger catastrophe to come.

The place where the Byzantine emperor and his Crusaders once wielded their swords, in an instant, became the site of a natural disaster. Its convenient transport is the inherent nature of a few Turkish cities, connecting Europe with Asia. The Bosphorus Strait lies between the two continents. Hagia Sophia has always been the miniature, revealing the history of Turkey. It used to be the world's largest Christian church before becoming a mosque. Today it is a museum. However, in the eyes of the journalist, it is more like a seismograph with a history of 1,482 years. Because Hagia Sophia has survived many strong earthquakes, the minaret in the earthquake is just like the swinging pointer on the seismograph.

Since ancient times, natural disasters such as hurricanes, tornadoes, volcanoes and earthquakes have been attacking humankind with irresistible force. However, Kocaeli deems it its mission to learn from natural disasters, which reflects the human wisdom.

The brave Turkish people have never been scared by the satanic Domino effect. In the face of the natural disasters, Kocaeli is always at the ready. Focusing on each and every detail in education and prediction, the city has learned to live together in a robust way among the earthquakes. This is a myth from Kocaeli: mankind is invincible when we are prepared for everything!

Urban Management and Sustainability

—Inspirations from Lilongwe, Malawi

As a signatory to the Millennium Declaration, Malawi began to make its own national development strategy as required by the Declaration to guide the development of the nation so as to finalize the Millennium Development Goals. Nevertheless, its growth and development strategy have unfortunately failed to effectively solve some specific problems faced by Lilongwe. One problem is its rapid urbanization; in 2000-2010, the urbanization rate remained at about 5.22%. Moreover, there is the constant occurrence of slums; 75% of its urban residents are living in the slums. Poverty becomes a serious problem in the city; the government staff is featured by their duty neglecting; the development of basic urban infrastructures is slow, etc. The traditional development planning tools in Lilongwe, such as the master plan and structural planning, are not able to address the complex social and development problems faced by the city. Furthermore, global environmental problems also pose challenges to its development. The solemn reality urgently requires Lilongwe to re-make the long-term development plan that adapts to the changing situation to secure the sustainability and harmony of urban development. Based on this, to improve the city's sustainability and ability of science-based management, and to change the image of the city, in 2008, Lilongwe Municipal Government started to make new urban development strategy while considering "Johannesburg: Cities Mentorship Program". In 2012, "Johannesburg: Cities Mentorship Program" excelled out of the 255 candidate initiatives for Guangzhou International Award for Urban Innovation and won the first Guangzhou Award. As one of the award-



|Citizens of Lilongwe

winning programs, it received positive evaluation and praise from the judging panel.

1. Background Information

1.1 Relatively limited urban governance capacity that fails to adapt to the rapid urbanization

As one of the African countries with faster urbanization in recent years, Malawi maintained its urbanization rate at about 5.22% in 2000-2010. However, as urbanization progress went further, a number of prominent problems occurred in the process of urban development and construction, which impeded the city expansion and development quality. For instance,

many slums have occurred. Rough statistics show 75% of urban residents live in the slums; social disparity is serious, which means huge gap existing between the rich and the poor; the government is not efficient in its operations and many government employees have passive attitudes towards their work; development of urban infrastructures such as roads, hospitals and schools is slow, etc. These prominent problems arising out of the urbanization show that the urban development plan and model in the traditional sense are not able to address the complicated and diverse challenges posed for the national rejuvenation and progress. Lilongwe urgently needs to strengthen its urban governance. As a result, it needs a brand-new philosophy and approach to guide the city's sustainable development in order to promote its urban governance level.

1.2 Urgent need to promote exchanges between regions and cities

As African countries rejuvenate and develop as a whole in recent years,



Children's Playground in Lilongwe

exchanges and cooperation between regions and cities have become increasingly deep. As one of the countries in Central and South African, and as a signatory to the Millennium Declaration, Malawi, when making its urban development strategies is active to learn from and exchange with surrounding countries and cities in the region while discussing with them about the possibility and arrangement of getting into practical cooperation in the field of urban construction and development. In 2007, Lilongwe, as a member of United Cities and Local Governments (UCLG), attended the Future Cities Forum held in Johannesburg, the capital city of South Africa. At the forum, Lilongwe hoped that it could get the guidance in urban construction and management from those member cities that have already made effective urban development strategies. In 2008, Johannesburg, UCLG, United Cities and Local Governments of Africa(UCLGA), South African Local Government Association(SALGA) and other cities and organizations in relevant countries approved the application of Lilongwe, which kicked off the mutually-aiding help and common development between Lilongwe and surrounding countries and regions.

1.3 Challenges of global ecological changes and Lilongwe's resources utilization

As an integral part of global ecological chain, Malawi also has a certain natural resources and an ecological environment which hasn't been exploited in a large scale. However, as the country develops and cities expand quickly, it also faces the serious challenge about how to effectively preserve and use its own ecological environment and natural resources in the process of urbanization. The rapidly-growing urban population, development and expansion of industries, mining and exploration of all mineral resources, discharge and treatment of household and industrial garbage, and preservation of rare animals and



Lilongwe Civic Offices

plants, etc. have become the real challenge that has to be addressed by the Lilongwe Municipal Government and its citizens. As a result, it is the logical choice of Lilongwe to implement the Cities Mentorship Program to guide its own environmental preservation and resources utility.

2. Implementation

2.1 Staffing, duties and operation of the Program

2.1.1 Staffing

The staffing includes two parts: Program participants and partners.

The Program participants include: Lilongwe City Council (LCC, public sector), Land & Resources Ministry of Malawi, local government agencies, city union (NGO), Johannesburg (public sector), international organization JICA, the United Nations Human Settlements Programme,

GTZ, Community Development Committee and other organizations in Lilongwe.

The partners include: Johannesburg City Council, city union and local government agencies.

2.1.2 Duties

Of the participants, Lilongwe City Council (LCC, public sector), Land & Resources Ministry of Malawi, local government agencies, city union (NGO) and Johannesburg (public sector) are responsible for Program execution, including making the plan and budget, program selection, evaluation of effects and distribution of resources such as fund, HR and technologies.

International organization JICA, the United Nations Human Settlements Programme, GTZ, Community Development Committee and other organizations in Lilongwe are mainly responsible for specific program connections, including fund and HR input, guidance of operation, personnel training and evaluation of effect.

Among the partners, Johannesburg City Council offers professional consultancy, technical help and fund support for Lilongwe to make urban development plans. The city union, as the major sponsor and fund source of the Program, provides general technical support. Local government agencies in Lilongwe are responsible for executing the specific government technical policies to ensure the Program stays in line with the Malawi Growth and Development Strategy (MGDS) and United Nations Millennium Development Goals(MDGS).

2.1.3 Operation

The operation of Cities Mentorship Program is done in three stages.

Stage I: Preparations. In this stage, the focus is on planing and designing the urban development strategies. Key operation in this stage is to confirm the background information of urban development strategies,



which includes the incubation fund provided by the city union, the local consultant group which can provide a mechanism report, evaluation of sponsors and stakeholders, and evaluation of the available information. The importance of the stage lies in the fact that it highlights the problems faced by Lilongwe Municipal Government: it lacks stable political framework; its leaders and executives lack force of action; there is insufficient teamwork spirit, absence of management plan, singular source of fund, aging equipment and corruption of some staff, etc. The Stabilizing Strategy is needed to put an end to these problems.

The so-called Stabilizing Strategy actually refers to the effective tool used jointly by the UCLG team and Cities Mentorship Program team. The purpose is to reduce the malfunction and poor execution of the Municipal Government in the process of operation. The strategy mainly includes: transparent financial management, effective HR management, sufficient equipment and apparatus maintenance and updating, etc. As the practical model of UCLG-City Union partnership, the Stabilizing Strategy functions by providing wonderful resource support and systematic guidance for the Cities Mentorship Program.

Stage II: Preparation of the urban development strategy. The stage was kicked off in February 2010. All stakeholders including the national government, individuals and social organizations as partners in the Program are involved in this stage. The operation of this stage is based on the information provided in Stage I and the guidance and support given by the Tutor Team, Municipal Government and other sponsors. In the stage, the major work is to make macro-analysis of Lilongwe's urban development strategy. As a major stage of the Cities Mentorship Program, it was expected to be completed within half a year. The operation of this stage includes: a) Analysis of Lilongwe overview, including the basic information and situation such as nature,

culture, society and economy etc.; b) Analysis of the situation and challenges faced by the city, including development of its infrastructures, organizational structure of the government, urban management level and prominent social problems and contradictions at present; c) Proposal of city vision, including the confirmation of future development orientation and goals as well as the planning of development steps; d) Target actions and time planning, including the design and plan of executing the strategy and timing of strategy implementation; e) Make high-level management tactics, including introduction and use of new management system of the government, training and education of personnel, etc.

Stage III: Execution of urban development strategy. This stage is also very important for the execution of Cities Mentorship Program. In this stage, the city mainly plans and guides the operation of specific projects in the urban development strategy so as to reduce the resistance, ensure it is operated smoothly, and supervise and evaluate the effects. The operation in this stage mainly includes: a) Preparation for the business plan, including the planning and layout of commercial facilities in the city and effective configuration of commercial resources; b) Agenda of departments and the city, including making of rules of procedure, use of ways of procedure and arrangement of contents of procedure in the government agencies; c) Credit rating provided by the inter-city network, including exploration of inter-city cooperation fields, selection of inter-city cooperation means and evaluation of inter-city cooperation effects; d) The 10-year capital plan, which is mainly designed to confirm the orientation of capital input into urban development in the following 10 years; e) Survey of security in the city, including the systematic monitoring of the crimes in the city, use of joint meeting mechanism on the city security, etc.; f) Plan of treating wastes in the city,

including making the urban garbage treatment plan, selection of ways of treating urban garbage and opinion poll, etc.; g) Plan of reviewing the laws, including the making of laws and regulations that support implementation of the urban development strategy, revision of relevant laws and annual review of law enforcement, etc. The execution of the stage is mainly done by the Bill Gates Foundation, which is responsible for providing support in fund, selection of priority projects, updating of target tactics, technical help, personnel training and information exchange, etc. At the same time, Lilongwe Municipal Government also establishes the dedicated department to be responsible for following up with, supervising and managing the operation and practice of the Program.

2.2 Innovative aspects

2.2.1 Management and governance

The innovation Program has set up a strategic guidance principle. By 2015, Lilongwe will get a well-managed, fair and transparent City Council with strong sense of responsibility. It will have clear-cut duty division and function division. Besides, the participation in the decision making will be systematic, rational and legitimate. To be specific, Lilongwe Municipal Government has set up the professional software and hardware, which will become the e-financial system that can make accounting calculation to some limited degree. Besides, the government has introduced the exchange rate and evaluation system to help improve making the changing budget. The outcome is evident. On the one hand, the budget audit of the Municipal Government is expanded from 2002-2003 to 2011-2012. On the other hand, because of the effective operation of the mechanism to identify and eliminate duty neglecting, the large-scale duty neglecting phenomenon has disappeared and duty fulfillment



People Executing and Organizing the Lilongwe "Johannesburg: Cities Mentorship Program"

has been better. A large number of important posts are confirmed, and also the Stage II and Stage III of the urban development strategy are able to be operated smoothly. For instance, in FY 2012-2013, over 60% of the posts maintain stable. And the smooth operation of performance evaluation plan also ensures some commercial plans are made and released.

At the same time, the surrounding cities also start to learn from Lilongwe. The municipal governments of Blantyre and Mzuzu have started to learn from Lilongwe Municipal Government and relevant laws and policies have been enacted. Besides, the making of an anti-corruption convention, which is designed to reduce the misbehaviors and violations in the operation of Cities Mentorship Program, has been placed on the agenda.



Promotion of Lilongwe Urban Community Financial Supervision and Education

2.2.2 Residence and land

Because of the urban development strategy, the Bill Gates Foundation in 2010 provided USD 2.5 million to renovate two informal residential areas in Lilongwe. Besides, Lilongwe Municipal Government also allocates special fund for 1,619 settlement points to meet the requirements for the general urban planning.

2.2.3 Infrastructures and environment

The roads in the densely populated areas are well renovated. In particular, some gravel or earth roads have been renovated into the brick-paved roads. In terms of environment, the plan of solid waste treatment supported and supervised by Johannesburg City has started the operation.

2.2.4 Community development

In terms of medical service, when the urban development strategy was

just kicked off, because of the lack of fund and HR, many community clinics were closed. As the Program went deeper, two large hospitals with wonderful facilities and sufficient fund started the operation. Many years before the urban development strategy was put into operation, Lilongwe was threatened by the large-scale outbreak of cholera. However, after the Cities Mentorship Program was executed, the large-scale outbreak of cholera started to be reduced. In terms of education, 345 teachers had received re-training and their apartments had been renovated. Besides security, the lighting system for the urban roads and traffic light system had also been repaired and upgraded.

2.2.5 Effect evaluation

At the end of each FY, the 6 departments in the Municipal Government will make the score cards with CDS department providing the technical support. After making the overall review, CDS department will make the score card of the City Council. The score card matches the budget of the City Council and includes an evidence project, which is found in the review and can prove a certain measure has been taken. CDS department and the Program Monitoring & Evaluation Director work together to monitor the progress of the City Council's projects or activities while comparing them with the promises recorded in the score cards.

2.2.6 Work methodology

Before executing the Cities Mentorship Program, all government agencies worked on their own and planned their own activities each year. They made the budget plan and executed the plans according to how sufficient their resources were. And they simply needed to report to the General Director. After the Cities Mentorship Program was executed, the work methodology had changed. For instance, the project progress reports as mentioned by CDS will be submitted to CDS department, which will provide the technical opinions and forward the report to the



meeting of management committee before it is submitted to the General Director. The General Director will submit the quarterly report to relevant agencies in the local department. The key to this methodology is that the departments will submit the concise program proposal to the CDS department, which will, based on these proposals, work out a detailed one to be submitted to the national government or sponsors within the scope of consideration.

Besides, the Lilongwe Municipal Government has also designated about 2,000 residential and commercial plots and allocated them to low-income people in the city while improving the water supply and hygiene facilities in the residential areas of low-income people. At the same time, the city also improved the service of the community savings and loans association, eliminated sex discrimination, and encouraged more women to participate in social affairs.

3. Existing Problems and Development Orientation

3.1 Existing problems

3.1.1 Singular fund source

Though the Program is participated by Lilongwe City Council, Land & Resources Ministry of Malawi, city union, Johannesburg, international organizations (JICA, the United Nations Human Settlements Programme, GTZ), and Community Development Committee, the fund is mainly provided by the Lilongwe Municipal Government, city union and some NGOs based on the evaluation of the needs. The fund was USD 72,000 in 2008 and rose to USD 249,000 in 2012. But in general, it still lacks the stable fund source, in particular the support from large and high-end projects. Besides, companies, enterprises and private institutions do not have a strong will to participate in the Program. As a result, it is difficult to

support the continuous and effective operation of the Program.

3.1.2 Insufficient HR

The execution of urban development strategy needs more high-quality HR to execute it. However, the population size and population quality in Lilongwe, for a long term, have been staying at a low level. Statistics show that there are over 600,000 people in Lilongwe with the unemployment rate at about 20%. Over half of the population is illiterate or semi-illiterate. We can see that the low population quality and small population size are not able to support effective and profound execution of the Cities Mentorship Program and urban development strategy.

3.1.3 Quality of public servants is yet to be improved

In the early stage of execution, the Cities Mentorship Program was opposed by some staff members in the City Council. In particular, some officials were not willing to take the extra work brought by the Program and were not willing to take the low wages, so they joined together to oppose the execution of the Program. To solve these barriers, the Municipal Government organized seminars to educate the relevant people so that they became aware of the benefits and improvements brought by the urban development strategy for their life and work. In the end, the counter-force was eliminated and the Program was executed smoothly.

3.2 Orientation of development

Because of the many problems and challenges faced by Lilongwe City Council in the past few years, the Cities Mentorship Program, when being executed in the management process and basic facilities, also faces major changes ranging from tactics making, practice and execution. As a result, the urban development strategy, which is established on the basis of the Cities Mentorship Program, also faces adjustment and changes. In the long run, the future development should focus on:



3.2.1 Enhancing the organizational structure of urban development strategy. To be specific, it is necessary to steadily push forward scale and network development of administration bodies while fulfilling their centrifugal force and cohesion.

3.2.2 Improving management and income-expense balance. That is, the city introduces more advanced administration accounting & settlement system to improve the work efficiency.

3.2.3 Ensuring the budget of urban development strategy and commercial plan of departments are feasible. It is necessary to adopt the feasible and transparent budget for the effective input of corresponding commercial projects.

3.2.4 Effective operation of the score system of departments and the city. Smooth and fair performance evaluation of government agencies should be promoted by updating the system.

3.2.5 Securing the responsibility taking of investors. Laws and regulations should be made to rationally regulate the operation behaviors and safeguard right and interest of investors.

3.2.6 Enhancing city construction level and ensure the urban facilities are operated smoothly. Investment in municipal facilities and infrastructures needs to be enlarged to improve the look of the city.

3.2.7 Sustainable city transport service. City transport system needs to be built in compliance with the dynamics of city development to improve the modernization of the city.

4. Lessons and Revelations of the Program

The Cities Mentorship Program highlights the principles of the Guangzhou Award and becomes the model for cities to get into mutual - aiding and improve their capacity in management and sustainable development. The

program provides enlightenments in such fields as the improving of city governance, pushing forward synergy of inter-regional city management, enhancing interactions and communications between the government and social organizations of all kinds, and promoting sustainable development of HR.

4.1 Establish a scientific evaluation indicator system to improve the efficiency and enhance the government duty fulfillment and governance capacity

The role of a scientific evaluation indicator system is to quantify and segment the duties of government in social management. By selecting and allocating the indicators and by quantifying the completion degree, we can judge the quality and performance of the government agencies in fulfilling their duties and push forward governance, thus helping us observe and evaluate the administration efficiency of the government from the micro perspective. For instance, Lilongwe Municipal Government has introduced the score card system to study whether the relevant government agencies have duty neglecting, slow action or other phenomena of poor efficiency in pushing forward city development projects. Other cities can learn from the practice of Lilongwe in this regard. Considering their own realities, they can build their own science-based indicator system targeting at the municipal facility construction and service items. They can do it in the following aspects. First, they should categorize and manage the duties and tasks of different government agencies based on such factors as progress of completion, quality, cost consumption, revenues, fund input and composition of responsible people, etc. Second, they should adopt the advanced technical means and third-party organs to compare and evaluate the efficiency and effect. Third, they should establish the professional and dedicated organs to monitor and observe the effect of duty fulfillment while feeding back the



effect. On the one hand, such approaches can reduce, to the largest extent the phenomena of non-transparency, unfairness, duty neglecting, low efficiency and corruption, etc. in the process of Program operation and management, thus securing the government credit. On the other hand, it can enhance coordination and cooperation among different government agencies and rational flow of personnel among them so as to avoid badly-informed work, buck-passing and duty neglecting, thus improving the efficiency of government agencies and enhancing the sense of belonging and mission of the personnel.

4.2 Strengthen inter-regional coordination and cooperation and push forward exchanging and learning of urban management experience among governments

One important innovation of Cities Mentorship Program is that Lilongwe first uses the support of Johannesburg to make the urban development strategy before disseminating its experience of development, construction and management gained in the practice to surrounding cities. Such an approach of sharing urban construction philosophy and results in the form of mutually-aiding cooperation can not only enhance the city's dynamics of development, but also stimulate the development of surrounding cities in the same region. The other cities can learn from the practice of Lilongwe in terms of urban development and innovating urban management in the following aspects. First, they can make full use of their stimulus on surrounding cities to abandon the narrow perspective of too-much focus on fierce competition and local economy, thus establishing the ladder-like circular development pattern. Second, it will discuss with surrounding cities, in the form of mutual support and win-win cooperation, about the experience and lessons gained in the practice concerning shift of government roles, city innovation construction, social management service, synergetic governance of

environment, diverse cultural integration and legislation. Third, through various forms of cooperation and negotiations, such as the Mayors Summit attended by the city mayors, and the joint meetings attended by economic departments, social management departments, cultural departments and EP administrations of different cities, they will eliminate misunderstandings, enhance mutual trust, learn from each other's strong points, and realize the rational distribution of various resource factors, absorption and interaction of various advantages, and co-existence and common development of all cities.

4.3 Ensure the consultancy organs, funds, private institutions and various social organizations play their intermediary roles while enhancing interactions and cooperation between government and these organizations

When executing the Cities Mentorship Program, organizations of all kinds represented by the City Union, JICA, the United Nations Human Settlements Programme and GTZ have played a major role and exerted huge influence. Most impressive is that Bill Gates Foundation provides strong support and assistance in Stage III of the urban development strategy in terms of fund support, making and updating target plans, selection and execution of Program priority and deployment of HR. So we can see that the effect and role of the program cannot be achieved without the active participation and involvement of social organizations of all kinds, which can solve problems such as singular fund source, low execution efficiency and shortage of HR etc. In this sense, the city should ensure social organizations of all kinds to play their roles to make up for the leakages and defects of governments in social governance. To be specific, the city can do so in the following aspects. First, ease its limitation against registration of social organizations, break the administration barriers, expand the scope of business

activities to mobilize their initiative and creativity. Second, in light of the major projects in the process of urban construction and development, actively receive the democratic monitoring and inquiry from social organizations to ensure the fairness, transparency, rationality and order of the Program. Third, when pushing forward outsourcing of social public service projects, it is necessary to create the objective conditions and atmosphere in which the social organizations can participate in the bidding as the free and equal bidders, thus strictly avoiding black-box operation and frauds. Fourth, create a sound environment in which government agencies and social organizations learn from each other and interact with each other, such as the regular Open Day of Public Consultancy, cruise promotion of specific projects, emergency-response mechanism of major events and emergencies, and survey and statistics of opinion poll in a certain stage, etc. so as to promote mutual trust and understanding and the maintenance of harmony.



View of Lilongwe

4.4 Enhance the developing, organizing and training of HR in the organizational structure to cultivate the HR team with great capability of execution and strong sense of belonging

There is no doubt that HR plays a very important role in any organizational structure. When executing the Cities Mentorship Program, a very important point is the development and use of HR. For historical reasons, the region where the Program is implemented has backward education and poor population quality, which had a negative impact on execution of city development strategy. Lilongwe Municipal Government tries its best to pool funds from various sources to provide various forms of training and education for the government staff, medical workers, teachers, students and agricultural technicians. These efforts make wonderful effects, in particular, on improving the government's working efficiency while enhancing the sense of belonging of the public servants. In this aspect, other cities should learn from Lilongwe's philosophy and practice by giving stronger support and more investment in introducing talents and nurturing the local talents. First, make the mid- and long-term strategy of talent development and plan the HR development pattern from the macro and strategic perspective. Second, introduce high-end talents and build the highland for talents. Relevant departments should, based on current development situation of cities and advanced experience in the world, actively encourage the free flow of talents and establish the mechanism of introducing promising talents. The mechanism is featured by the high platform, wide scope, low threshold, various forms and strong attraction. Third, work with local institutions of higher learning, research institutes, enterprises and public institutions to expand the channel of philosophy exchanges, career design, training and application cooperation of various types of talents, thus providing more opportunities and space for their development and maturity. Fourth, enhance HR interaction among



regions and countries, and engage in cooperation in mutual visits, overseas study, training and temporary posts so that the talents can have a wider international vision, thus cultivating a team of talents with strong adaptability, active innovation awareness and express practice and application so as to form the talent reserve resource.

Journalist Observation

The Capital City That Does Not Look Like a City

We had many question marks in mind after arriving in Lilongwe. Is this really the city of Lilongwe? Is this the downtown area? Is this City Hall? Is this the capital city of a nation? Actually, when failing to see the many high-rise buildings or skyscrapers that can usually be seen in a capital, we couldn't believe our eyes. We didn't even see very large buildings.

The hotel where we lived was a 10-storey building, one of the highest buildings in Lilongwe. The plain-looking city hall, banks and supermarkets lie in the shade of trees. Along the black-surfaced roads with many cars traveling on them, there are earthen paths with grass. Local residents with parcels, water buckets and fire wood on their heads passed by occasionally. Many people were riding on bicycles, not stylish ones, but those popular in China 3 or 4 decades ago. When the driver told us it was a new area, we felt more at ease because according to "common sense" new areas should be like this, vast, less populated and with wonderful green spaces. However, we quickly remembered that the old city has narrow roads and 75% of the people live in slums. Our vibe changed.

Fruitful Achievements in The Cities Mentorship Program

If you are able to abandon accepted prejudice against big cities, you

will probably quickly fall in love with Lilongwe. Under the September sunshine in the Southern Hemisphere, each and every place in the new area of Lilongwe looks vast and loose. Tall trees with purple flowers grow along the road leading toward the city hall. All buildings keep a little distance from the main road. The green trees and grass, though not looking modern, do present a wonderfully-layered and exquisitely-designed green system.

When passing by the Capitol Hill, Mr. Gift, responsible for introducing to us the "Johannesburg: Cities Mentorship Program", pointed at the road lamps, informing us that they were installed after the implementation of the Cities Mentorship Program. The journalist had actually read through the materials about the Program very carefully. By comparing the historic infrastructures of Lilongwe, we can easily appreciate that the results of Cities Mentorship Program, from 2008 to 2012, are quite affirmative.

Government Responsibilities in Internet Addiction Prevention

—Inspirations from Healthy Seoul Free from Internet Addiction of Children and Youths

In 2007, in order to solve the problem of internet addiction among adolescents during the digital process of the city and improve social service of the government, Seoul established "I Will" centers(internet addiction prevention and intervention centers, abbreviated as "I Will" centers) for children and youths to overcome the difficulty. In 2012, this initiative stood out from 255 candidates from all over the world and got awarded, becoming one of the five winning initiatives of the Guangzhou Award.

1. Background Information of "I Will" Centers

1.1 Internet addiction on adolescents is one of the urgent problems that Seoul is faced with

From the early 1960s to the late 1980s, Korea emerged as a modern country. However, it suffered from lots of side effects of modernization such as increasingly prominent social problems, and internet addiction is one of them.

As the capital of Korea, Seoul is facing more and more serious internet addiction. According to an annual nationwide research on internet addiction, most internet addicts are in high school, and there is a trend



Students Watch the Drama of Childhood Education

that bigger cities have more internet addicts. Seoul is the biggest city in Korea, and the most digitized city in Korea as well as in the world. In Seoul, information technology industry, cartoon industry, and online game industry are highly developed. In addition, personal computers are widely used and the Internet is highly accessible to the public. Adolescents are the biggest group to use computers. Thus, internet addiction is serious on adolescents of Seoul. Up to 12% of adolescents there are addicted to the Internet, or have the symptom of internet addiction. Severe internet addicts indulge in online games or pornographic websites, which is obviously bad for their study and health; light internet addicts linger on chatting websites, videos, or other websites, which affects their study and daily interpersonal relationship. Facts show that internet addiction not only brings misery to urban families, but also impacts the social order and the development of education. It concerns all the society.



1.2 This initiative is implemented in Seoul to make up for the drawbacks of national treatment program for internet addicts

To deal with internet addiction, the Korean central government set up an "Internet Addiction Coping Center" in 2002. At present, there are a total of 14 Internet Addiction Coping Centers in Korea, with an annual fund of 7.9 billion won(about 47.637 million yuan). They offer a variety of programs and services, including investigation on internet addiction policy, research on concerned policies, education development, as well as other information policy development, technical support, personal interviews and preventive education.

Internet Addiction Coping centers have made some progress in prevention and treatment, but there are still some disadvantages. The main disadvantage is that they're unable to meet actual needs. The management areas of Internet Addiction Coping Centers include the whole Korean territory, where nearly 50 million people receive prevention education on internet addiction, and more than 8 million receive internet addiction treatment. It's a heavy task. However, with only 52 staff members, and an annual funding of 7.9 billion won, they cannot meet actual needs.

Seoul is a special city. The Internet Addiction Coping Center in Seoul finds it rather difficult to meet the demand. Currently, the Seoul Internet

|Comparison between Korean "Internet Addiction Coping centers" and Seoul "I Will" Centers

Name	Number	Main Location	Budget in 2013	Staff
"Internet Addiction Coping Centers"	14	Seoul, Busan, Daegu, Kwangju, Daejeon, North and East Gyeonggi, Gangwo, Chungcheongnam-do and Chungcheongbuk-do, Jeollanam-do and Jeollabuk-do, Gyeongsangnam-do, Jeju	7.9 billion won	52
Seoul "I Will" Centers	6	Seoul	3.04 billion won	60

Addiction Coping Center has 12 staff members, which is the biggest one compared with the staff number in other metropolitan cities or provinces where the average is three. However, Seoul has a large population, with a total population of 20 million, accounting for nearly half of the Korean population. The number of students is relatively bigger. Latest data shows that there are 1,282,416 students in Seoul (including elementary, middle and high schools) at present, accounting for 17.7% of the total number of students in Korea. According to the standard in 2009 when 10% students were addicted to network, nearly 130,000 people are in need of the service. Therefore, the problem of internet addiction in Seoul of youths, cannot be solved with the sole support of government in Seoul

|Number of Students in Seoul and in Korea

Category	Korea	Seoul	Rate (%)
Elementary schools	3,299,113	566,168	17.2
Middle schools	1,979,656	348,375	17.6
High schools	1,982,207	367,873	18.6
Sum	7,260,976	1,282,416	17.7

Reference: Information on the website of Ministry of Education of Korea

. It's far from meeting the needs of Seoul.

In order to effectively solve the problem of internet addiction, Seoul set up "I Will" Centers (Internet addiction prevention and intervention centers) for children and youths in 2007.

2. Concept and Implementation of "I Will" Centers

2.1 The concept and purposes of the innovation

The concept of "I Will" centers is to guide young people to participate in social activities, help them get experience in life, and find possibilities in life. "I Will" centers help them find other interests and hobbies besides

the Internet, and eventually make them aware of the dangers of internet addiction. Through their will and motivation, they will ultimately get rid of internet addiction.

The centers are set up for four main purposes: Firstly, help children and youths addicted to the Internet grow well; secondly, further its programs of helping adolescents strengthen internet addiction prevention and eliminate internet addiction; thirdly, according to the degree they're addicted to the Internet, develop corresponding prevention method, education approach, interviews, rehabilitation method and other support services; fourthly, share diverse policy resources to provide systematic services, through regional cooperation.

2.2 Implementation process of "I Will" centers

The first "I Will" center was established in 2007. Currently the centers offer two kinds of services: one is prevention education service for potential addicts; the other is counseling and treatment services for high-risk addicts. Both services have formed systematic and standardized operating procedures.

2.2.1 Internet addiction prevention and education service for students in Seoul

Every year, "I Will" centers, with the cooperation of Seoul Ministry of Education, give online health education to students in Seoul to prevent the occurrence of internet addiction. From 2010 on, it has formulated a variety of education policies to strengthen internet addiction prevention. According to different needs of schools, different prevention methods can be chosen. On the aspect of teaching, some schools may hold school-wide lectures, while others may set up specialized courses, such as a course with 16 classes per semester on internet addiction prevention. On the aspect of school management, each school would appoint an information ethics teacher

who is responsible for the daily prevention education programs, individual interviews, group interviews and other activities.

2.2.2 Counseling and treatment for high-risk addicts

2.2.2.1 Registration. The centers provide services through various ways: information network or traditional community help; individual application or government assistance. They provide temporary as well as routine measures. First, the centers take routine investigation. They make use of Korea's annual internet addiction questionnaires to find high-risk addicts. Every year, Korea will hand out questionnaires to students in the fourth grade of elementary schools, first grade of junior highs and first grade of high school to evaluate their conditions and thus find high-risk internet addicts. By this method the government and "I Will" centers will know the comprehensive conditions of students, and contact internet addicts to join "I Will" centers to overcome the problem. Second, internet and telephone registration are available. There are "I Will" centers websites with



| Home Page of "I Will" Centers

registration sections. Internet addiction adolescents or their parents can go online to enroll in a variety of service programs. There is also a hotline 1899-1822, with 24-hour free phone in the centers. They can enroll through telephone. Third, relevant authorities can bring them here. The police or school teachers can seek help of "I Will" centers if they find any internet addict in the street cafes or schools. Fourth, the centers disseminate message to help them register on site. They will regularly issue brochures to encourage on-site registration.

2.2.2.2 Main measures. "I Will" centers have taken specific measures to reduce adolescent internet addiction. Firstly, the centers cooperate with social youth organizations to expand their power, and improve their efficiency of Internet addiction prevention and intervention. "I Will" centers have strengthened comprehensive cooperation with other youth organizations. Especially in 2011, Seoul Association of Children and Youth Organizations finished network sharing of all adolescent organizations. With the information sharing of businesses, they cooperate more closely. By contacting adolescent organizations and groups, the centers provide young people of each age groups with substantive treatment programs such as family training, summer camp, community service, training, certificated courses, and response activities. In response activities, according to students' specific condition, alternative activities will be provided. For example, for an addict who likes playing football, the center will use a football game to replace the Internet. It will create opportunities for the addict to join football games. In this way, he will feel satisfied and delighted, and thus abandon the Internet willingly. Secondly, in collaboration with professional treatment agencies, the centers provide professional guidance for them. The centers and 15 hospitals in Seoul have reached an agreement to obtain knowledge and experience from psychiatric

specialists, and on the other hand, through the platform of "I Will" centers, hospitals have given patients continuous interviews and assisted centers on therapeutic activities.

3. Assessment of "I Will" Centers

3.1 Outcomes

After several years of development, Seoul has established six "I Will" centers, with basically the same mode and standard. They cover the entire downtown area of Seoul, effectively avoiding regional differences. Each center has 10 permanent staff members as well as 20 to 30 active preventive education lecturers. Budget of the centers in 2014 grew 10% over, reaching 3.37 billion won (about 20.287 million yuan). During the last six years, the number of adolescents receiving interviews and preventive education in the centers has increased year by year. In 2007, when the centers were set up, the number of adolescents receiving interviews and preventive education was 5904, and in 2013, it

Services in "I Will" Centers

Program Name	Content	Note
Interviews	individual counseling, phone and computer counseling, psych screening, group counseling, home counseling, family counseling, expressive art therapy ,etc.	
Preventive education program	Preventive education (in junior grades), preventive education lectures(in all grades), education from parents, education from preventive education lecturers	
Research program	Publication of research achievements and Curriculum development, reports, symposium, workshop, etc.	
Solutions after comprehensive research	individual counseling, group counseling, preventive education, specialist treatment on high-risk groups	Focus on high-risk groups
Dissemination programs	to improve networking resources, to disseminate the program by use of websites, public transport and other media.	

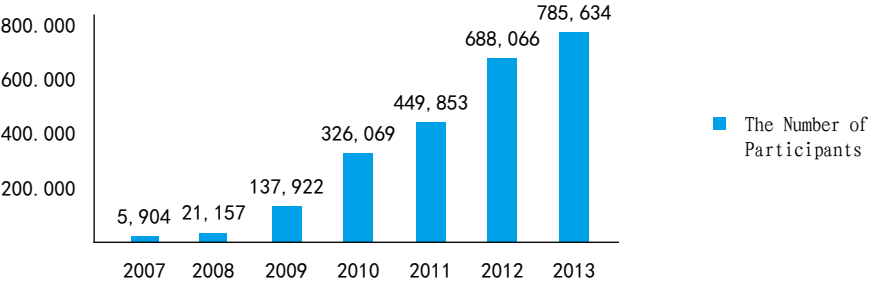


| Established "I Will" Centers

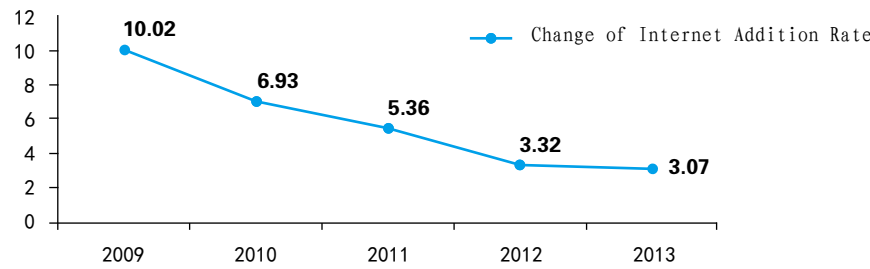
Organization Name	Legal Person for Operation	Establishment date	Area	Staff
"I Will"center in Gwangjin	the Young Korean Academy	09.04,2007.	234 m²	10
"I Will"centerin youying	Seoul Catholic Young Men's Association	04.21,2009.	203 m²	10
"I Will" center in Myongji	Myongji University Myongji College	08.30,2010.	250 m²	10
"I Will" center in cangdong	Kwangwoon college, Kwangwoon University	07.01,2010.	278 m²	10
"I Will" center in Gangbuk	Kwangwoon College Kwangwoon University	06.01,2012.	211 m²	10
"I Will" center in Gangseo	Chongshin University	11.01,2013.	355 m²	10

grew to 785,634 , accounting 61% of the whole students from elementary schools to high schools in Seoul. The program planned to lower the internet addiction rate to 5% by 2012. Finally, this goal was exceeded. In recent years, internet addiction rate of students decline significantly. The

| The Number of Participants



| Change of Internet Addition Rate



rate was 10.02% in 2009. In 2010, it declined by 3%. It dropped to 3.32 percent in 2012, and 3.07 percent in 2013. The rate decreases year by year, showing that internet addiction has been curbed well, As a result, the situation of internet addiction in Seoul has been improved.

In the implementation of "I Will " centers, the program won the understanding and support of the whole society. It has achieved a good result in the society. On the one hand, after treatment and services, students had a more scientific view on internet addiction and thus cleared up misunderstandings and eased tension with parents and schools, which helped promote social harmony. On the other hand, people have a more rational understanding on advanced technologies-network, online games, cartoon industry and other related industries. Under the pressure of people in the society, network companies such as online games and cartoon companies have enhanced the sense of social responsibility. They are paying more attention to the issue of internet addiction.

3.2 Obstacles

It is known that "I Will " centers have faced some obstacles in construction, mainly in the following aspects:

3.2.1 Insufficient government financial support

Although this year's total budget of "I Will "centers has increased by more than 300 million won over last year, but it is still far less than the necessary fund. The centers are setting up more alternative services, and developing supporting programs, which need more government funds.

3.2.2 Obstacles in cooperation

Cooperation of "I Will "centers, government agencies, youth organizations, and non-profit organizations are necessary in the implementation of the program. However, due to distinct responsibilities, goals, and priorities of each agency, it is difficult to achieve mutual benefit in all situations.



3.2.3 New challenges

When the program was established, internet addiction facing young people are mainly their dependence on web surfing, while in recent years, mobile web surfing has become increasingly common. As a result, the number of students addicted to smart phones grows rapidly. According to the statistics from Korean Ministry of Public Administration and Security, by 2011, 11.4% of Korea youth are addicted to smart phones (they indulge in mobile phones, neglecting their daily life and study). The rate is higher than that (10.4%) of computer addiction. The problem of network addiction brought up by the digital age is getting worse.

3.2.4 Academic support needed

There are disputes the issue of on internet addiction in the academic community. Some scholars believe that it is a fake issue that doesn't exist at all in the world. Scholars on this issue make few achievements and they are not convincing. In addition, there are few treatment approaches. "I Will " centers need to work together with researchers, and during the practice, they should constantly accumulate experience to promote the development of the theory. In this way, practical work will find support from theory, and prevention and treatment will be more scientific.

3.3 Ways ahead

3.3.1 To expand the global influence of the program

At present, "I Will " centers have worked on the right track. Seoul is planning to change it into a demonstration program for internet addiction treatment and intervention for adolescents, expanding its global influence. For example, it actively participated in the selection of the Guangzhou International Award for Urban Innovation in 2012; in the same year, "I Will " centers in Gwangjin and Myongji participated in Asian youth leadership workshop, introducing the "policies of internet addiction

prevention in Seoul" to Taiwan, Vietnam and Indonesia; it also made "I Will "centers introduction video.

3.3.2 To develop new service programs to response to new situation of internet addiction

Since 2013, the center has designed programs to solve the smart phones addiction problem. In July 2013, there was a conference on the solutions towards the overuse of mobile phone among teenagers and on prevention policies. In February 2014, the center tentatively ran an internet program which helped parents guide their children to use smart phones properly.

3.3.3 To collaborate with hospitals to improve professional health service
By September 2013, Seoul Metropolitan Government had contacted more than a dozen hospitals and agencies. With the help of them, it provided professional medical services for young internet addicts.

4. Revelations from Seoul's Practice and Experience

4.1 Taking the prevention and treatment of internet addiction into livelihood projects and reinforcing mutual coordination and accountability of departments

Seoul's "I Will "centers project involves multiple departments: Seoul's Municipal Youth Bureau, Seoul's Municipal Women and Family Division, Seoul's Municipal Office of Education, Korea's central government and so on. Despite the presence of poor cooperation, a certain degree of intensive allocation of government resources is achieved and a sound level of cooperation forms. "I Will" centers make use of the data available from the central government on Internet addiction among young people in schools and establishe high-risk groups of youths and children. For example, "I Will" centers cooperate with the central government in studying materials and project curriculum, saving costs and maximizing

coordination. In close cooperation with the Seoul Municipal Office of Education, "I Will" centers succeeded in establishing a prevention education system and provided help to young people in overcoming negative treatment and privacy issues.

Internet addiction prevention and treatment are complex issues, calling for coordination among many sectors and institutions, such as the Department of Education, social organizations, communities, schools and so on. It is necessary to clarify the responsibility of departments to deal with internet addition on different institutions, such as examination of addiction in schools, universities, prevention education, counseling and other activities, making addiction prevention education an important part of school education. Consideration is given to the establishment of related coordination mechanisms to enhance the ability of collaborative governance among various government departments.

4.2 The special fiscal appropriation for addiction prevention and treatment project

According to Seoul's experience, though full financial support from the government is limited, it also guarantees the continuation of the project. Children and young people are the future of every city. As such the government needs to have sufficient amount of funds to source a sustainable launching fund as well as basic funds to help solve the problem of youth addiction. Sustainable development, start-up capital and infrastructure funding ensure that this undertaking can be maintained. In addition, we can mobilize social forces, social cohesion and resources to earn more financial resources.

4.3 Encouraging the participation of NGOs by means of government purchase services

The implementation of the project not only enjoys benefits from the

Seoul government, but also from the active participation of NGOs. Six "I Will" centers have been funded by the government and by NGOs under government trust. They are responsible for operations, fully reflecting the diversity of social governance body. This feature is the trend in global social governance development. Namely, social governance changes from government alone into multi-organizations, whose governance model can then effectively take advantage of the government and NGOs to overcome any government shortcomings and other defects, thus improving the efficiency of social governance.

In solving some social problems, professional NGOs have richer experience and more powerful capabilities than the government. Many times they are also more easily accepted by the general population. Government can commission NGOs in the form of purchase to provide related services.

4.4 Establishing related scientific research institution to provide theoretical support for addiction prevention and treatment

Internet addiction is both a social problem as well as a theoretical issue. Addiction prevention and treatment must have the support and participation of professionals in order to avoid tragedy in treatment. This includes professionals



|Cyber Culture Watchdog Club Training Program



|Special Training Gurses for Fathers Program



in psychology, neurology, brain science and other fields. Therefore, the addiction prevention and treatment organization should be in close contact with specialized research institutions. Collaboration with local research institutions can provide empirical material for scholars and raise academic standards while also providing theoretical support for addiction prevention and treatment, thereby improving service efficiency. Seoul's "I Will "centers established contact with a number of research institutes to jointly organize academic forums, which is a very good practice worth learning from.

4.5 Mainstream media playing positive roles in building a sound social environment with relevant parties

Mainstream media should increase the publicity of dangers behind addiction to the internet and cell phone-dependent disorders. Schools can incorporate the prevention of addiction into classroom instruction, and parents should also be actively involved in guiding young people toward a correct understanding of the nature of mobile phones. The society, schools and families establish a linking mechanism to create a good social atmosphere and solve addiction problems altogether.

Journalist Observation

The Government Sets up "I Will" Centers to Help the Young People Give up Internet Addiction

Do you think you are addicted to the Internet? If your answer is "probably" or "maybe" and you are in Seoul, you can make an appointment with experts who are working to eliminate Internet addiction.

According to the official survey in South Korea, 12% of Koreans aged between 9 and 39 show the characteristics of Internet addiction.

However, evaluation results made by Seoul's education administration were even more serious, claiming that about 20% of adolescents in Seoul are addicted to the Internet.

As a result, in 2009 Seoul Municipal Government began building the first "I Will "centers, aimed at helping young people eliminate their addiction to the Internet. In the past 5 years, 5 such centers have been built.

"I Will "centers adopt a model of both online and offline interactions. There is the online evaluation form of Internet addiction. If you doubt whether you are addicted to the Internet, you can take an online evaluation. "I Will" centers still have a team to caution against and eliminate Internet addiction. This team consists of 180 precaution experts and more than 30 professional lecturers who go to schools and communities to provide consultancy and guidance.

After a 5-year development based on "I Will" centers, Seoul has established an Internet-addiction Elimination Network consisting of homes, schools and communities.

Each year, students will receive the Internet-addiction evaluation. If they are found to have such an inclination, the school will then transfer the students to the "I Will" centers for adjustment. The survey shows that students in Grade 4, Junior High Grade 1 and Senior High Grade 1 are the most vulnerable to Internet addiction.

According to Min Sun Hee, principal of the Program, though it is a service program targeted at the young people, many older people attend it and some parents also want to join their kids. "Sometimes they feel the whole family has been addicted to the Internet, which cools and sours family relations." Based on this, the Program helping the young people to eliminate their Internet addiction will probably develop a service oriented toward the adults and even the whole family.



Livable and Sustainable City and Public Responsibilities

—Inspirations Drawn from the Initiative of Vancouver, Canada

As a popular city for immigrants, Vancouver in Canada is carrying increasing pressures in both housing and environmental issues. In order to become "a city for everyone", Vancouver launched the "Greenest City 2020 Initiative" in 2009, and "The Mayor's Task Force on Housing Affordability" in 2011. In 2012, Vancouver merged the two projects into the "Visionary Vancouver: Creating a welcoming and sustainable place for all" project. During their participation in the appraisal for the 1st Guangzhou International Award for Urban Innovation the initiative stood out from more than 200 worldwide participants, securing the 1st Guangzhou Award as one of its five winning cities.

1. Origin: City Characteristics and Existing Prominent Problems

1.1 Recognized as the most livable city in the world thanks to a superior ecological environment

Lying on the western coast of Canada, though at a high latitude, Vancouver enjoys warm and wet weather throughout the year thanks to the warm ocean current and a protective shield to its north-east provided by the Rocky Mountains which runs across the entire North America continent. It generally does not snow here in winter, and the



| A Panorama of Vancouver

sea never freezes. In all four seasons, there are exuberant plants and flowers and picturesque landscape, making it a world-famous city for tourism. All people who first visit the city can immediately feel the fresh air and beautiful environment making it difficult to imagine that 50 years ago Vancouver was still suffering from serious pollution. On the issue of environmental control, most cities usually adopt a "subtraction" method by straightforwardly limiting pollution and relocating heavy and chemical industries. Vancouver takes a different "addition" approach. It focuses on establishing the value theory of livability and advocates the development of green industries. For years Vancouver's government has been supporting the development of green industries including green buildings, clean energy, digital media, information technology, etc., effectively reducing the time for environmental governance.

August 2014, the think-tank of *Economist* Group, the "*Economist* Intelligence Unit" (EIU), released the latest "Livability Survey" which carried out a horizontal comparison on the quality of living conditions in 140 cities across the world based on 5 indexes– stability, healthcare, culture and environment, education, and infrastructure. Vancouver, which had once been ranked top for 5 consecutive years, was ranked the third this year next only to Australia's Melbourne and the Austrian capital Vienna. It ranked No.1 not only in Canada but also throughout the entire Americas.

February 2014, consulting company Mercer LLC published the "2014 Worldwide Quality of Living Rankings" on more than 460 cities based on 10 indexes – social and political environment, economic environment, social and cultural environment, medical and health, schools and education, public services and transportation, entertainment, consumer goods, housing, and natural environment. Vancouver is ranked 5th, again the 1st in the Americas, after only Vienna, Austria; Zurich, Switzerland; Auckland, New Zealand; and Munich, Germany.

1.2 The largest city in western Canada with substantial economic and scientific strengths

With its substantial economic strengths, Vancouver has the ability to provide adequate funding for urban innovation projects. Vancouver is a coastal city with an area of 114 square kilometers in the low land plains of British Columbia, Canada. Vancouver has a population of 600,000 according to its 2011 census. Its GDP per capita is up to \$37,600 (2006). It is the third largest city in Canada next only to Toronto and Montreal, and the largest in western Canada. It is also the largest commercial, financial, scientific and technological, and cultural center along the western coastline of Canada. As a developed city in a developed country, Vancouver's level of economic development is far higher than that of the



| Granville Island

major cities in mainland China.

Vancouver is the air and rail transport hub of western Canada, and an important transit point from North America to the Orient. It has Canada's largest and busiest ports, ranking 4th in North America in terms of total cargo tonnage, with its annual trade volume reaching up to 43 billion Canadian dollars with 90 countries around the globe. As a major gathering and distribution center of agricultural, forestry and mineral products in western Canada, Vancouver has also naturally become one of the key industrial cities in the country.

The headquarters of many forestry and mining companies are located in Vancouver. Wood-processing is its chief industry with a long history. Other traditional sectors include aquatic processing, canned food, paper-making, textile, printing, and so on. Industries diversified after



the Second World War with the development of petroleum refining, petrochemical, aluminum smelting, shipbuilding, aircraft manufacturing, and other sectors. The development of software, biological science and technology among many other industries is also vigorous. In particular, the film industry is highly developed. Vancouver is known as the "North Hollywood", being the third largest film production center in North America after Los Angeles and New York. In addition, the natural environment adds to Vancouver's popularity with tourists. This makes the tourism industry the second major economic pillar for the city after forestry. In 2010, the winter Olympics and winter Paralympics were hosted by Vancouver in conjunction with Whistler 125 kilometers away. Besides its well-developed economy, Vancouver also gathers a wide variety of higher education resources, which provides the appropriate intellectual and technological support for urban innovation. There are 5 public universities in the Greater Vancouver Regional District. The largest two are the University of British Columbia (UBC) and Simon Fraser University (SFU), with a total of more than 80,000 students. UBC ranked the 27th in the World's Best Universities by Newsweek in 2006, while SFU was appraised as the best comprehensive university in Canada by Maclean's Magazine in 2009. The other three public universities in Greater Vancouver are Capilano University, Emily Carr University of Art and Design (ECUAD), and Kwantlen Polytechnic University. There are also other tertiary higher education institutions in Greater Vancouver, including the Vancouver Community College (VCC), the Langara College, British Columbia Institute of Technology (BCIT), and others. In addition, Vancouver has a public library with a rich collection of books. The library has 20 branches and is one of the largest in Canada.

1.3 A city of immigrants that faces pressure from housing and environment issues

By virtue of its superior location, economic conditions, and excellent ecological environment, Vancouver becomes an attractive city for immigrants, who inevitably bring significant housing and environmental problems. This is the root cause why Vancouver has implemented the "creating a welcoming and sustainable place for all" project.

5 of the 10 major cities with the highest population densities in Canada are located in British Columbia, including 4 in the Greater Vancouver Regional District. Vancouver has become a city with the highest population density in the entire country. The population in Greater Vancouver Regional District has doubled in mere 30 years. In the past 5 years, the population growth rate in the Greater Vancouver Regional District has reached up to 9.3%, while that of downtown Vancouver has exceeded 17.7%. Statistics Canada believes the main reason for rapid local population growth is the settlement of large numbers of foreign immigrants as well as the migration from other provinces within Canada. 43% of the population of the Greater Vancouver area is of Asian ethnic origin, a much higher ratio than in any other cities out of Asia in the world.

The rapid increase in population has long ago pushed the real estate prices in Vancouver higher than all other cities in the country. The housing burden has become an important factor in restraining urban development. Urban public health is also affected by population growth. Compared to what it was 20 years ago, the proportion of asthma, diabetes, depression, heart disease and other diseases has increased by 2-3 times.

1.4 Early planning and development policies have laid down a solid foundation for sustainable development

Although the "Greenest City 2020 Initiative" was formally implemented

in 2009, it was actually already an important part of the city's planning and development policies determined since the 1970s (still being implemented at present). Those policies laid down a solid foundation for the important principles in Vancouver such as livability, inclusivity, urban density and sustainability.

Early in 1988, Vancouver launched the Task force on Atmospheric Change to examine the impact of atmospheric change on municipal planning and activities. The result was the June 1990 release of *Clouds of Change*. From these results Vancouver set their work objectives at addressing climate change. In 2003, the city launched the Cool Vancouver Task Force. Its recommendations led to the creation of two "2005 action plans": one to reduce emissions from municipal operations and the other aimed at reducing emissions in the whole city. In 2008, Vancouver approved "the EcoDensity program" to guide the city towards becoming a "better community - more sustainable, more affordable, and more livable." The approved EcoDensity Charter commits the City to creating a greener, denser city pattern through "the strategic use of density, in the right place and right time ...to help reduce our ecological footprint." The above efforts have laid a solid foundation for the implementation of the "Visionary Vancouver: creating a welcoming and sustainable place for all" project.

2. Innovative Practices: Concept and Implementation

2.1 Creating "a city for everyone"

Human beings are the city's subject and its development objective. An important objective of urban development is to meet the needs of the people, not only in terms of clothing, food, housing, and travel, but also the overall development of the people. The success of a city is judged

by whether its development has improved the overall development of the people and whether its economy has promoted the sustainability of its city's resources. That is the only path to symbiotic development. Otherwise it has deviated from the intended essence of livability.

The "creating a welcoming and sustainable place for all" project includes two main sub-projects: the "Greenest City 2020 Initiative" and the "Mayor's Task Force on Housing Affordability ". The former aims to transform Vancouver into the most environment-friendly city in the world by 2020 and the latter to ensure all citizens in Vancouver have access to housing. Together, the two projects comprise a grand vision: to build Vancouver into a vibrant, sustainable, and diversified city of livability, a harmonious and inclusive "city for all".

To ensure the effective implementation of the above goals, Vancouver has provided extensive chances for its citizens to participate in all public interest-involved projects. People are allowed to freely voice their



| Queen Elizabeth Park

own opinions on the formulation of policies, issuance of government development plans, land-use planning guidelines, application of development projects, etc. The relevant public sectors also actively participate in community-based public meetings for opportunities at getting in contact with the public and better understanding public opinions.

Vancouver won the 1st Guangzhou International Award for Urban Innovation with the "creating a welcoming and sustainable place for all" project, demonstrating to the world that "a city can develop and prosper while simultaneously becoming a green city".

2.2 Realizing sustainability with the "Greenest City 2020 Initiative"

The "Greenest City 2020 Initiative" aims to build Vancouver into the most environment-friendly city in the world by 2020. To achieve this goal, Vancouver has developed a two-stage action framework which includes 10 specific goals in three key areas:

2.2.1 Zero carbon emission: a) Climate Leadership: to exhibit leadership in addressing climate change; b) Green Transportation: to let walking, bicycling, and using public transport become the prioritized choice of transportation; c) Green building: to lead the trend of global green building and design.

2.2.2 Zero waste: d) Zero Waste: to build Vancouver into a waste-free city by establishing a complete waste recycling and reuse system within the city. Two common goals are expected through Zero Carbon and Zero Waste: e) Green Economy: to create the most environment-friendly economic structures and to encourage the founding of green, environmental protection enterprises; f) Lighter Footprint: to let Vancouver become the city with the least Green House Gas (GHG) emissions.



| Vancouver Skyline

2.2.3 Healthy eco systems: g) Easy Access to Nature: for the public to easily get in contact with green areas; h) Clean Water: to provide Vancouver residents with the cleanest drinking water in the world; i) Local Food: to commit itself to the localization of food production, including improvement of the working environment for food industry workers and to let Vancouver become the leader in the urban food sector in the world; j) Clean Air: for Vancouver citizens to breathe the cleanest air compared to all other large cities in the world.

The above 10 specific goals represent very high requirements, forcing Vancouver to think over the relationship between "livability (suitability for living)" and "suitability for industry": Green does not mean contrary



| Streetscape of Vancouver

but means contributory to entrepreneurship. Environmental protection usually makes us think of numerous rules to comply with and a lot of money to spend, but we should not forget that a cleaner environment and more livable city will attract more people and more enterprises to come with investments. In fact, in the course of creating the greenest city, Vancouver has added tens of thousands of new jobs in environmental protection, helping to solve urban employment problems. Similarly, suitability for industry does not necessarily mean disruption to the environment. Vancouver is the first city in North America that has written the green building standards and the sustainability standards into legal provisions. It is reasonable to say that livability and suitability for industry is mutually reinforcing and complementary.

At present, Vancouver promotes the implementation of the plan mainly through three aspects: Green Transportation, Green Urban Planning,

and Green Economy. These three aspects are interlinked and mutually conducive.

– Green Transportation. The public are encouraged to choose transportation options in the preferential order of walking, cycling, public transport, water transport, and private car sequentially. To this end Vancouver has taken many measures: a) High-density of exclusive paths for walking and bicycling have been designed in urban areas. Conspicuous signs have been set up, greening and beautification tasks are carried out with emphasis on the safe, convenient and comfortable experience of users. The designated roads are appropriately widened so that citizens may chat side-by-side while walking or riding bicycles. b) Subway, light rail, and other high-efficiency public transport facilities are



| Bicycling Citizens



increased with the replacement of fueled vehicles for electric cars being encouraged. c) Innovations are made in management mechanisms through the cooperation between the government, schools, police departments and research institutions. For example, the government will invite outside bidders to a variety of research subjects on traffic safety, environmental protection, and health; the government and the police departments hold routine meetings each month ensuring safety in law enforcement through email and telephone communication. The traffic and transportation departments will submit safety reports to the government every month.

– Green Urban Planning. Beginning in 1990, Vancouver has adopted the principle of coordination between planning and urban development, seeking to become a sustainable, resilient, livable and dynamic city:

- Taking into account the residents' walking, biking, working, and shopping needs in community planning to improve the integrity of living, working, and shopping conditions of the community.
- Creating high quality urban spaces and planning the height and spacing of buildings according to the residents' sense of safety and comfort, while aiming to reduce the blocking of sunshine from building shadows by constructing open-air cafes, public green spaces and so on.
- Planning different housing and supporting facilities for different age and income groups.
- Making transparent the public decision-making process, allowing participation from the public during the whole process planning from its preparation to implementation. Mandating the approval of the plans by the Parliament, requiring that the developer must first obtain consent from the community before changing the usage purpose of their land.
- Sufficiently cooperating with the private sector, the government should hold weekly meetings with the land owners and developers to discuss various issues. The developer must pay a sum of public welfare costs

which are used as the community development and reform fund. The participation of the city building society is mandatory in the engineering of any project.

– Green Economy. There are 25,000 enterprises in Downtown Vancouver providing approximately 400,000 jobs. Among them the technology-based enterprises are the major pillars. At present, the green economy has contributed 20,000 jobs for Vancouver, the number growing at a rate of 6.3%, three times that of any other type of business. Among all the green economy sectors, the green building industry has the highest contribution with 5,000 jobs, followed by the green food industry. The local "green industrial zone" project under development is the innovation demonstration zone and the incubator for technologies of clean energy enterprises, mainly to develop technologies that raise energy utilization efficiency. At present, several dozen enterprises have settled in the zone, including many transnational corporations. However, Vancouver has implemented green public procurement policies to support the sales of local food in city-run organizations (including community centers, restaurants, and franchise stores) while also supporting the holding of green community activities through approval and sponsorship by the city government.

While vigorously inviting merchants and attracting investments for green economy, Vancouver also implements the "go out" strategy. It has invested capital in the green technology, electronic media, video games and other sectors in Guangzhou.

2.3 "The Mayor's task force on housing affordability" ensuring citizens' access to housing

The "Mayor's Task Force on Housing Affordability" aims to ensure all citizens in Vancouver have access to housing. Having referred to the

measures adopted by various places around the world in addressing housing problems, the Task Force put forward innovative housing policies trying to solve the housing problems of urban poor families. Rationalizing the use of city resources(for example, capital and property) by charging conversion fees, and through cooperation with government organs at all levels, the single room housing of the elderly is banned . In 2012, Vancouver completed the construction of more than 1,400 new houses dedicated to needy families. A special agreement was signed with the government affiliates for this construction project so that no property taxes would be levied provided the house is not put up for sale.

Land use is a powerful tool in achieving the city's strategies. Vancouver is committed to building all types of houses to meet the needs of different groups in society. The process is participated by both private real estate developers and public institutions. As early as in 2001, the government conducted research which concluded the city needs to build three categories of houses. The first category is high-end residential buildings for profitable purposes; the second category is economic utilitarian housing and the third category is affordable housing for the low income groups.

Affordable housing projects represent a crucial area for a livable Vancouver. The government encourages residents from different backgrounds and of different incomes to live together in the same community or even in the same building, i.e., the mixed residential program. Usually a third of the units in a residential area are very expensive, designed for high-income people to live in; the remaining two-thirds are for the low-income population. The principle of this model is to use the high prices paid by the high-income people as subsidies for the housing of the low-income population, so that people from different backgrounds can live in the same neighborhood and enjoy the same public services.



| Canada Place

In the beginning of implementation of this policy, such a bold idea as to mix poor and rich housings did encounter many difficulties: many high-income earners think the low-income people have many problems, that they are always alcoholics, dirty, or could have a negative impact on their children. Construction of replacement housing in affluent areas tended to be objected to by the surrounding owners. To this end, the mayor and the deputy mayor personally participated in public meetings for persuasion efforts. It was understood that these tramps already existed within the community, and that they strolled in the park and slept under the porch. If only a small resettlement house were built for them, they would stay inside rather than harass others – Vancouver is not just a city for the rich but also for the poor. The city government allows the rich

kids to play and study together with children of lesser means and their parents slowly began to understand and accept the less affluent families. The mixed residential method eventually worked.

When the high-income and low-income people begin to understand one another, local social problems will finally decrease: residents of the singular income neighborhoods often dial 911 to report security problems, alcoholism, domestic violence, etc.; however, in the mixed residential areas, the number of 911 calls is significantly reduced. People began to try to help each other and learn from each other – the low-



| Southeast False Creek Waterfront

income people learning to think in others' places while the high-income earners learn to have more compassion.

The government played an active advocating role in the resettlement housing project. However, while the construction was easy, the settlement is hard. The biggest problem is how to let the homeless move from the street into the resettlement house. Many resettlement houses have regulations that prohibit entrance with dirty clothing, pets, and so on. The poor among the community are used to indolence and freedom and have no desire to be restrained, preferring living on the streets to going to the resettlement house to enjoy a warm and comfortable life. In order to attract these homeless people, Vancouver lowered occupancy standards, allowing them to bring their "furniture" and pets and provided specialized areas for holding personal items.

Kerry Jang, Deputy Mayor of Vancouver, said: "As long as they are willing to move in, we have a way to get them out of the wanders team." Once the formerly homeless persons have moved in, social workers provide them with basic necessities – food, clothing and medical care, etc. Through regular interaction with social workers, medical staff and finance staff, they are able to slowly accustom themselves to a sedentary life, not wanting to go back to the streets again. As their situations become more stabilized, the local social worker will then try to help them find a job and apply for affordable housing.

Concerning the work of the "Mayor's Task Force on Housing Affordability", the public can participate in the project through online forums (such as "Talk Housing") and the ideas competition. The city government will sort out the collected views on housing issues and post them on the Internet. In this way the public is able to express their own opinions on topics such as the "blending of new buildings with the existing urban pattern".

This shows that while comprehensively building the "Greenest City in the



World", Vancouver has also taken the trouble to care for their minority groups, which is something Guangzhou can learn. They have shown in real actions that "Vancouver belongs to all citizens and will not abandon a single life!" Even toward the poor, drug addicts and other minorities, Vancouver has shown understanding, respect and humanity.

2.4 Supplementary projects serving the main project

To facilitate the implementation of its main project and bring new ideas to the city, Vancouver has also implemented a series of related projects, including:

2.4.1 The University of British Columbia's Innovative Summer Internship Program. This project sponsors 10 graduates from British Columbia University to participate in the urban sustainable development projects in Vancouver. The graduates can work in conjunction with the city's team and a mentor after selecting one of the 10 specific goals in the "Greenest City 2020 Initiative" project; they then carry out investigations or implement improvements.

2.4.2 The Vancouver Foundation, in cooperation with the city government, offers its applicants up to 50,000 US dollars in financial assistance, to help Vancouver achieve the series of goals for 2020.

2.4.3 For permanent local residential families, a "Home Energy Loan Program" has been developed to promote and facilitate the upgrading of domestic energy structures and facilities.

2.4.4 A "City Studio" program was launched in conjunction with six higher education institutions to encourage students to directly participate in the "Greenest City Initiative".

3. Innovation Effect: Performance Evaluation and Follow-up Plan

3.1 Take advantage of urban intensity to successfully build a livable, sustainable environment

In the last 20 years, Vancouver has been considered to be a leading city in North America in terms of constructing intensive multi-purpose communities. No other city in the world can match Vancouver's success in utilizing the city's intensity to create a more livable and sustainable environment.

In respect of land use, Vancouver has more or less realized the unity of residential buildings, professional offices, community service centers, while also supporting living facilities such as banks, newsstands, post offices, grocery stores, restaurants, pharmacies, etc. within each single block. A variety of high-quality green open spaces can be found across



Energy-Saving Buildings



The Community Energy Conversion Station

the city, minimizing the impact of building shadows on public spaces. Through road planning and construction engineering, priority has been given to increasing bike lanes and walk ways, encouraging the public to reduce their car usage. Through these practices, Vancouver has proven that intensive communities are more conducive to emission reduction, while recycling of wastes and energy is also more efficient.

The "Greenest City 2020 Initiative" adopted by Vancouver's City Council became the foundation of all municipal policies. City Council and government staff insist on improving transportation systems, reducing waste and pollution, protecting water resources and supporting sustainable community development. Vancouver's municipal government attaches great importance to publicity, fighting in a variety of ways to allow every citizen to participate in the projects. On the "Greenest City 2020 Initiative" launching ceremony, a total of 2,000 people spontaneously participated. Though the Internet and social media campaigns, more than

half of the citizens participated in the plan to varying degrees.

As a result, the "Greenest City 2020 Initiative" has gained remarkable achievements:

3.1.1 In terms of exhibiting leadership in issues such as climate change: The carbon dioxide captured by landfills equals to the reduction of 104,000 vehicles on road. A coastal flood risk assessment was performed, which is the first instance in Canada to carry out such activities on a city level. Regional energy systems were upgraded with the deployment of cost-effective and large-scale renewable energy facilities.

3.1.2 In terms of green building: Buildings meeting LEED standards have increased by 48% since 2008. For the first time in Canada, it is mandated by law that the energy efficiency must be raised during any renovation process of existing buildings.

3.1.3 In terms of green transportation: An extension of 265 kilometers of bicycling lanes has been made. Investments have been made in regional transportation infrastructure with additional bus rapid transit systems being set up. The amount of private car travel within the city has continued to decline while the amount of use of the public transport system marks an annual growth rate of 9%, the fastest growth rate in North American cities. In addition, the proportion of bicycling and walking within the city has reached a record high.

3.1.4 In terms of zero waste: The amount of kitchen waste collection tanks has increased 60%, resulting in an additional 39,000 tons of organic fertilizer. Waste collected by the Vancouver subway system has reduced by 22% and wastes treated through landfills and incineration have reduced by 12% compared with 2008.

3.1.5 In terms of improving access to nature: An urban forest program has been implemented, including legally prohibiting the removal of healthy trees; 11,000 trees were planted in 2013, equaling the sum of



the number of trees planted during the previous two years; salmon are reappearing in the city's streams. At present, 93% of the citizens need only walk for 5 minutes' to get from their homes to surrounding parks, green spaces or beach.

3.1.6 In terms of clean air: Since 2011, more than 93 electric vehicle charging stations have been built for public use, and in 2013, the number of noncompliance with air quality norms was 0.

3.1.7 In terms of clean water: Vancouver has met or exceeded the most stringent quality standards for drinking water at both home and abroad with water consumption per capita being reduced by 33% compared with that of 2006.

In addition, Vancouver also received numerous domestic and international honors in 2013 and 2014, including being confirmed by World Wildlife Fund as the global champion city in the "Earth Hour" activity in 2013.

3.2 Successful creation of 3 city construction cases with high visibility

During the course of "creating a welcoming and sustainable place for all", Vancouver successfully created 3 highly visibility cases that have both improved urban environment as well as established an advanced benchmark for other parts of the city and other cities around the world.

3.2.1 Planning of a dome-shaped city skyline

Vancouver attaches importance to the protection of its beautiful local landscape and has never conducted any disorderly development in the mountainous area or coastline in the pursuit of economic interests. Rather, it has selectively built high-density houses in the urban areas to take full advantage of the city's intensity to save land. This meets both the need for urban development and the need for preserving the precious mountainous and oceanic scenery wherever possible.

As early as in 1989, Vancouver designated 27 spots of public landscape that were in need of protection. In 1997 it carried out research on the downtown skyline and adopted a dome-shaped city skyline program. For the plots of land other than the public landscape protection areas, Vancouver encourages the developers to construct high-rise buildings, but the new buildings must remain in line with the requirements for the city's skyline. This action not only provided landmark buildings for the city, but also reduced disorderly spread of city space. Increased high-density constructions shortened the distance for transportation between living facilities and public spaces. The collected taxes and fees are then used to build affordable housing and other facilities.

3.2.2 Purposefully increasing the residential density near the downtown area

In the vicinity of the main public workplaces in downtown (north False Creek and south downtown area), the municipal government has purposely increased the residential density and guided the private owners of the surrounding land in residential design and development, to ensure the livability of the new residential areas and the sufficiency of supporting facilities. In the specific design, the alternation of short wide buildings and high narrow buildings has been adopted, increasing the elasticity of floor area and sense of beauty. The land plots are purposely planned into residential areas, commercial areas, and parks according to proper proportions and distance.

3.2.3 Renovation of abandoned heavy industry areas with harsh environment

The south-east of False Creek was originally an abandoned heavy industry area with a harsh environment. Vancouver re-planned it into an improved waterfront community able to accommodate 12,500 residents, mainly to construct residential housing, offices, retail shops and



|Energy Conversion Station in the Community

recreational facilities. South-east False Creek has successfully realized the combination of green technologies and environmental strategies by adopting neighborhood energy systems, sewer heat recovery systems, green building technologies, rainwater collection and utilization systems, solar energy facilities, etc. A large number of public transport facilities and bike lanes have also been added. The area became the first local community surpassing overall LEED Platinum standards. As a whole, the buildings in the community have realized zero energy consumption and zero carbon emissions.

In regard to its layout, the combination of main buildings, attached buildings and feature buildings have been built to purposely match higher buildings with lower ones. The importance of the "water" element has been highlighted. A number of urban wetlands and habitat islands

have been built, both to aid in drainage and to help achieve the reuse of waste-water and rainwater. Through the above measures, south east False Creek has become one of the communities with the most beautiful environment in Vancouver and was even used as the reception area for athletes in the 2010 Winter Olympics.

3.3 Implementation of the detailed "Greenest City Initiative" goals

Vancouver has also concretely quantified the goals for the "Greenest City 2020 Initiative" in order to facilitate the annual inspection on the implementation status of its overall goals.

3.3.1 In terms of exhibiting leadership in climate change issues: Aiming at eliminating Vancouver's dependence on fossil fuels, the GHG emissions in the communities should be reduced by 33% by 2020 compared with 2007.

3.3.2 In terms of green building: Vancouver should acquire global leadership in green building designs and engineering technologies. By 2020, all buildings should achieve carbon neutrality in actual use; the energy consumption and GHG emissions should be reduced by 20% compared with those in 2007.

3.3.3 In terms of green transportation: The goal is to make walking, cycling, and public transport be the citizen's main means of traveling in Vancouver. By 2020, the proportion of using private cars to travel should drop below 50%; long-distance travel by car per resident should be reduced by 20%.

3.3.4 In terms of zero waste: By 2020, the amount of solid wastes transported to landfill locations for treatment should be reduced by half that of 2008. The utilization rate of all wastes should reach 80%. The long-term master goal is to raise the utilization of waste to 100%.

3.3.5 In terms of easy access to nature: By 2020, all citizens should be



able to reach the park, the beach, the green passage or other natural space within 5 minutes' walk from home; 150,000 trees should be planted during the period 2010-2020.

3.3.6 In terms of clean air: The goal is to let the citizens breathe the cleanest air among that of all the world's major cities. By 2020, Vancouver should reach or surpass the most stringent air quality standards in the whole province, the country and even the whole world.

3.3.7 In terms of clean water: To provide Vancouver residents with the cleanest directly drinkable water in the world.

3.3.8 In terms of a lighter carbon footprint: The goal is to achieve "One Planet" ecological footprint. By 2020, the city's carbon footprint per capita should be reduced by 33% compared with that of 2006.

4. Revelations: Experiences Used as Reference

Sustainable urban development is a common task facing humanity in the 21st century. In this respect Vancouver has accumulated a great deal of successful experience through "creating a welcoming and sustainable place for all". The practices of Vancouver are worth learning from by cities in various places around the world. This includes the importance that has been attached to sustainability and livability of the city and the characteristics of the public sector with long-term strategic vision and the courage to take responsibilities, etc.

4.1 Leading urban development and construction with an advanced concept

Prior to the implementation of the "Greenest City 2020 Initiative" project and the "Mayor's Task Force on Housing Affordability", Vancouver already established the people-orientation advanced concept of building "a city for everyone". Under the guidance of this concept, Vancouver

has made remarkable achievements and has become a world-famous livable city. Thus we can see that advanced and far-reaching concepts hold important value in promoting urban development.

Some cities often mistake the development goals as being a development concept. The so-called concept should have the characteristics of significant ideality, profundity and relative stability. It is improper to substitute goals for concept because urban development goals are easily subject to adjustment, especially when a new government comes to power. When this happens often new development goals are put forward and the goals formulated in the past will not be able to proceed. Concept, however, can unify and govern all goals and plans in urban development. In other words, goals and plans only exist for the purpose of realizing a concept. Thus we can see it is absolutely necessary to develop a solid concept that is advanced and that suits the actual situation in the city.

It is recommended that each city should develop an advanced concept that incorporates the connotation of livability and sustainability as soon as possible and in accordance with the city's own development conditions and characteristics. Always this should be accomplished after careful consideration and extensive consultation. The concept should serve as the soul in city governance and be used to lead the city's future construction and development.

4.2 Developing long-term plans for sustainability in urban development

In regard to sustainability, Vancouver's public sector has a long-term strategic vision. As early as in 1988, the city established the world's first-ever special task force charged specifically with evaluating the impact of atmospheric change on urban planning and activities. It also developed medium-term goals for sustainability before 2020 and long-term goals

before 2050.

Some cities, especially those in developing countries, have not paid enough attention to sustainability in urban development, and lack long-term planning and policies. As a result, the relevant consciousness concerning sustainability is not implemented during current work, leading to more serious and complex issues in environmental ecology, industrial development, social services and other aspects.

The research group suggests cities of the world borrow ideas from the successful experience of Vancouver by developing specific guide-lines, mandatory policies and regulations and through the creation of short, medium and long-term goals for sustainability.

4.3 Promoting green industry to effectively shorten the time needed for environmental governance

On the issue of environmental governance, Vancouver adopted a different approach from most cities. Instead of following the usual "subtraction" idea by simply limiting pollution and relocating heavy and chemical industries, Vancouver focused the effort on the "addition" method by establishing livable values and promoting green industry development to effectively reduce the environmental governance cycle.

In the traditional approach, a city hopes to improve the pollution situation only once it is troubled by the environmental issues. Such practice leads to temporary improvements which are seldom long lasting. It is recommended to learn from Vancouver's successful experience. Take sustainability as the cut-in point for promoting technological innovations, collectively develop or introduce technologies and industries in relation to waste treatment with energy saving and environmental protection to assist environmental governance.

4.4 Establishing green benchmarks for the whole city with high-standard successful cases

Through three high-standard successful cases, namely the planning of dome-shaped city skyline, high-density residential areas in north False Creek and south downtown area and the waterside mature community at south-east False Creek, Vancouver has not only improved urban environment, but also established advanced benchmarks for other parts in the city as well as other cities around the world.

Cities around the world can also learn from the successful experience of Vancouver and establish benchmarks for the city's ecological civilization construction by creating high-standard success cases. In particular, a number of regions with relatively harsh ecological environments can be selected as pilots for comprehensive reconstruction from all-round aspects including community planning, energy-saving renovations of



Renewable Energy Projects



existing buildings, green house design and construction, waste water recycling, reducing overall energy consumption, etc. Once practical results have been obtained, it is time to sum up the experience, refine the methods and promote the practice in other communities, thus promoting the construction of a livable city.

Journalist Observation

Garbage Sorting Marches Towards "Zero Waste"

When in Vancouver, I noticed a detail that food garbage and general garbage are strictly separated in the city.

According to Vancouver's regulations about sorting garbage, kitchen waste should be placed in the green garbage cans and other garbage in other cans. The green garbage cans are collected once a week while the other garbage cans are collected once every two weeks. In the past, all garbage was collected once a week. But, since last May, the other garbage cans have begun to be collected once every two weeks. By doing so, the city hopes to ensure that citizens strictly separate the food waste from the general wastes. If a household fails to do so, the food waste remaining there long will go bad. However, the general garbage will not produce odor when kept long. In a silent way, the citizens have to strictly separate these two types of wastes.

As a matter of fact, this new approach to garbage collection, adopted in last May, was ordered by Vancouver's Mayor Gregor Robertson, who explained at the press conference, "For some people, it is a change of thought processes. They just have the habit of stuffing all wastes into the general garbage can. But now we will no longer allow them to do so."

The government measures have worked quite effectively. The small

adjustment of garbage collection times shows Vancouver's strong determination to push forward environmental protection. When the approach is effectively implemented, the food wastes will be reclaimed as the fertilizers. 100% waste reuse is Vancouver's ultimate goal. Since 2008, Vancouver has increased the reuse of waste by 50%. In 2008, the percentage was only 55%. It will reach 80% by 2020.

StartWien - A Programme for New Migrants to Help Them Settle In and Facilitate Their Integration in Vienna

—Inspirations from Austria Vienna Initiative for Global Cities

To help new immigrants integrate smoothly into the local community, Vienna has adopted “StartWien - A Programme for New Migrants to Help Them Settle In and Facilitate Their Integration in Vienna” in 2008. This program is able to improve the new immigrants' ability to integrate into the community while helping them adapt to life in Vienna more



A Panoramic View of Vienna, Viennac



Vienna

quickly. In 2012, the program excelled amongst the 255 initiatives for the Guangzhou International Award for Urban Innovation, winning the first batch of the Guangzhou Award. As one of the 5 winning initiatives, it has received positive evaluation and praise from the jury.

1. History and Status Quo of the City

Vienna is the capital city of Austria, the largest city and the center of politics, economy and culture in the country. Vienna covers a territory of 415 square km and is home to a population of 1.7667 million. Vienna is both a city as well as a state, whose territory accounts for only 0.5% of the total territory of Austria but whose population stands for 20% of the whole.

In the EU, Vienna is a city with very high living standards and a low crime

rate. According to the 2012 List of the Most Livable Cities in the World, made by Economist Intelligence Unit, Vienna ranked second out of the 140 evaluated cities in the world, only after Melbourne in Australia. According to the ranking of living standard index made by Mercer LLC, Vienna ranked first four years in a row from 2009 until 2012 and climbed back to its top position again in 2014.

As one of the 4 official sites of the United Nations, Vienna is also the head office venue of OPEC, OSCE, International Atomic Energy Agency and other international organizations. At the same time, Vienna, known as the music capital of the world, is the most attractive tourism destination. In 2013, Vienna recorded the accommodation of nearly 12.72 million check-in tourists, of whom 10.39 million tourists had come from other countries. Within the scope of the EU, this figure was only next to those in London, Paris, Berlin, Rome, Madrid and Prague.

Austria is renowned as the Heart of Europe, and Vienna is the “heart of that heart”. Historically, Vienna has been a major hub of transport connecting Western Europe to Eastern Europe and providing an important passage between the Baltic Sea and the Adriatic Sea. Thanks to its wonderful relations with the Central and Eastern Europe, Vienna is also known as the “spring-board to Eastern Europe”. Many large foreign enterprises use Vienna as an arena to explore the market in Central and Eastern Europe.

Vienna is a city of immigration. Of the permanent residents in Vienna, more than half are either foreigners or the descendants of immigrants. Population diversity is also one of the characteristics of Vienna's development, which has consolidated the image of Vienna as a metropolis in the EU and a large city in the world. At the same time, Vienna also faces the pressures brought by immigration. The growth of immigrants means more investment in infrastructure, education, housing

and medical services. The diversity of the immigrant population also poses new challenges to the city governance.

2. Origin

The inflow of such large numbers of immigrants brings pressure to Vienna's social governance while ensuring its dynamics. For the government of Vienna, it is very important to properly deal with the issue of immigration and promote the integration of immigrants into the community. The following factors are major causes for Vienna's implementation of the program of New Immigrant Integration.

2.1 With fast growth, the immigrants also present diversity in terms of source countries and social backgrounds

In recent years, Vienna is being challenged by the aging population. For this reason, it needs to introduce immigrants to make up for the labor force shortage. At the same time, as the EU continues expanding and because of the wonderful social welfare in Vienna, more and more immigrants are attracted to work and live in Vienna. Latest statistics show that, of the 1.7667 million permanent population in Vienna, 1.0577 million are foreign nationals or are descendants of immigrants, accounting for more than 50% of the city's total population. Besides, immigrants in Vienna come from a multitude of different source countries (see Table 1) bringing with them incredibly diverse social backgrounds.

The constant growth of immigrants, for Vienna, is both a challenge as well as an opportunity. On the one hand, the growth of immigration ensures economic dynamics and social diversity; on the other hand, it also brings great pressure to the social governance.

Major Source Countries of Vienna's Immigrants

Country	Population (in 10,000)	Percentage (%)
Other EU countries	13.7	7.9
Serbia	7.3	4.2
Turkey	4.4	2.4
Germany	3.4	2
Poland	2.95	1.7
Polynesia	1.8	1.1
Romania	1.7	1
Croatia	1.6	1

2.2 Immigration brings negative impact on public security and increases the crime rate

According to the 2010 Report of Integration released by the Austrian government, 29% of the suspects seized by the Austrian police, and 31% of sentenced criminals in 2009 were immigrants from other countries. The problem of public security brought by immigrants is becoming more prominent.

Most of the immigrants in Austria live in Vienna. As a result, the problem of public security brought by immigration is noticeably more serious in the city of Vienna, which has great wealth gap and some racial discrimination. The large number of immigrants and their descendants, though most of them have since become Austrian citizens, don't have equal opportunities and live in a marginalized state. Many immigrants have a feeling of being abandoned by the society. They have great distrust in the government as well as its laws and show great dissatisfaction with the society. It is easy for them to commit crimes, thus bringing about a negative impact on the public security.

2.3 Immigrants receive less education and have a serious unemployment problem

In Austria, the average education level of immigrants is evidently lower

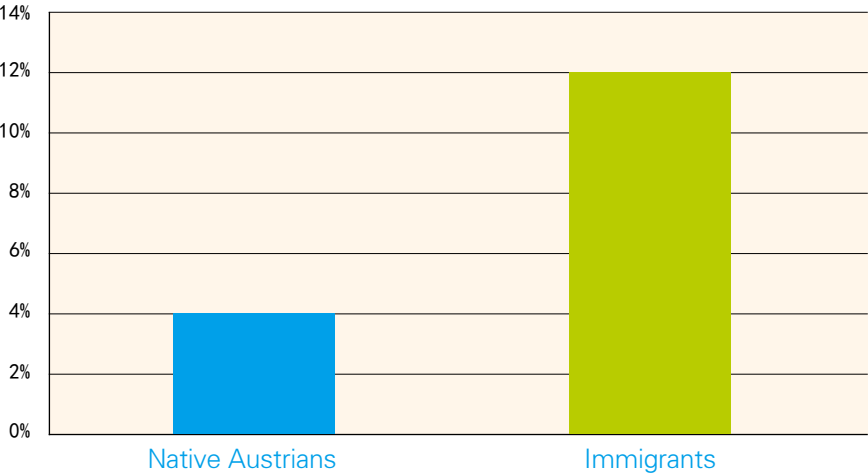
than that of native Austrian residents. Because of low-level education and the disadvantage of having a language barrier, etc., the immigrants are also kept in a inferior state compared to the Austrian residents in the labor market. Though the overall unemployment rate in Austria is much lower than most other EU countries, the rate of unemployment among the immigrant population is still very high.

The education and employment of Vienna's immigrants are basically

Comparison of education of native Austrians and immigrants who have only received the compulsory education

	Proportion of those only receiving compulsory education
Austrian residents	13%
Immigrants	33%

Comparison of unemployment rate of Native Austrians and immigrants in August 2011

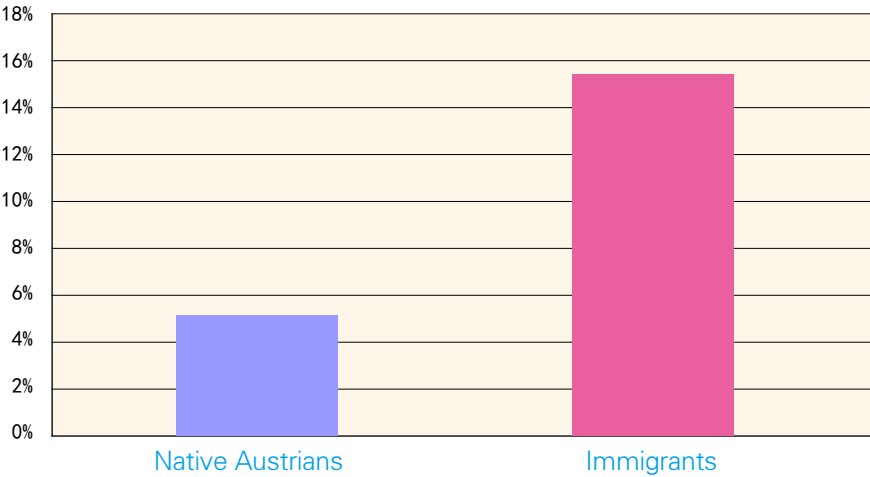


the same as that in Austria, which is featured by low-level education and high unemployment.

2.4 Immigrants have low-level income and poor living standards

Austria's immigrants, including those non-Austrian residents with

Comparison of proportion of impoverished population of Native Austrians and immigrants



Comparison of residential space per capita of Native Austrians and immigrants in 2009

	Per capita residential space (square meters)
Native Austrians	43
Immigrants	31
Turkish in Austria	21

immigrant backgrounds, are still a disadvantaged group within their society. The immigrants have a high percentage of impoverished population, low-level income and live in poor environments. At the same time, their employment quality is also evidently lower than that of native Austrian. Most of their jobs are indecent, dirty, labor-consuming and difficult ones that most native Austrians wouldn't want to do.

Vienna holds most of Austria's residents. The income and life quality of immigrants in Vienna are the same as those throughout Austria. There are also such problems as low income and poor living standards for immigrants.

2.5 There is evident difference between native residents and immigrants, who have contradictions and conflicts between them

The flow of such a large number of immigrants has brought about strong impact on the social welfare, security and ecological environment in Vienna, which also arouses the dissatisfaction of the local residents. Most of the immigrants find it difficult to integrate quickly into the local community. They still retain the cultural and religious traditions of their source countries. Besides, most of the immigrants work in low-level industries, getting jobs with poor employment stability and low incomes. They are also vulnerable to repulsion and discrimination from the local residents. Because of their numerous differences, it is easy for the immigrants and locals to fall into conflicts.

3. Concept and Implementation

3.1 Concept and goals

The Program of New Immigrant Integration has the concept of extensively and fully mobilizing and integrating all social resources to help the new immigrants improve their ability to integrate into the local community quickly. This way they may gain a sense of belonging and identity within Vienna, beginning their new life as soon as possible.

The initiative promotes the following three goals:

- 3.1.1 Helping new immigrants master the local language, understand the social structure and institution in Vienna and know what rights and obligations they can enjoy and take part in;
- 3.1.2 Providing as soon as possible the new immigrants with information of all kinds about life in Vienna to help them get accustomed to Vienna's lifestyle.
- 3.1.3 Reducing the disparity and conflicts between new immigrants and



local residents in Vienna, help them build sound relations and promoting integration between them.

3.2 Measures and approaches

To push forward the Program of New Immigrant Integration, Vienna has established a special administrative agency and the service platform for new immigrants. By training the new immigrants, the city aims to improve the new immigrants' ability to integrate into the community. The innovation program takes the following measures and approaches:

3.2.1 Establishing a special administrative agency

Bureau 17 is the administrative agency now responsible for the integration of new immigrants. Based on administrative functions, Vienna's Municipal Government is divided into 60 departments with Bureau 17 being the department held responsible for the integration of new immigrants. Bureau 17 works together with Bureau 35, which is responsible for immigration, citizenship and civil affairs. Once the new immigrants get their first certificate of residence, the Program staff will offer an invitation to them. The joint database shared by these two bureaus can rapidly deliver the relevant information to the new immigrants while issuing to them the Vienna Education Booklet. This Booklet provides guidance to the new immigrants on how they can participate in training about health, education, housing, employment and entrepreneurship while making records and proposals. The booklet also contains a coupon for language training courses.

3.2.2 Establishing a platform to promote information communications between government agencies, organizations and institutions

Vienna has established a platform for serving the new immigrants. This platform is designed to facilitate information communication among participating government agencies, organizations and

institutions within the Program. In addition to Bureau 35 and Bureau 17, the following bodies and resources are also involved in the Program: Vienna's Employment Promotion Fund, Information Center for Migrants, Public Employment Service Vienna, Vienna's Chamber of Labor, Vienna's Economic Chamber, Vienna's Public Learning Center, Information Call Center, providers of language courses and education agencies, scholars from consultancy centers and education agencies, representatives of immigrant groups and specialists from relevant topic fields, etc. These government agencies, organizations and institutions are responsible for providing immigrants with services during their first year in Vienna. Vienna's Education Booklet is compiled and operated by these government agencies, organizations and institutions. The Program platform integrates the resources of dozens of organizations and institutions to ensure all parts in the program are smoothly connected.

3.2.3 Multiple measures to help the new immigrants integrate into the community

3.2.3.1 Using the mother language of the new immigrants while introducing to them the social structure and systems of Vienna. The specific practice is to effectively use the mother language of the new immigrants to provide them with the relevant information. For instance, the enrollment of children in the schools, child care organizations, entry into the employment market, legal procedures to lengthen residence certificates, medical services, support for the pregnant, trans-cultural exchange in daily life, and garbage sorting, etc. In this way, the new immigrants who have received the enough information will know which department to go to when they need to solve a specific problem. This also helps alleviate the burden on government agencies while improving the adaptability of new immigrants in Vienna.



New Immigrants Are in The German Language Training and New-Life Training Course

3.2.3.2 Providing German language training and other courses about new life for the new immigrants. Through the training courses, the new immigrants can integrate into the local life more quickly, thus living more happily and having greater sense of belonging. This plays the role of lubricant for the harmony, stability and better security within the local communities.

3.2.3.3 The Program of New Immigrant Integration also includes the recognition of new immigrants' education certificate and promotion of their employment. This also plays an active role in reducing unemployment rates in the city and fully mobilizing the creativity of the immigrants to aid in Vienna's economic growth.

4. Performance Evaluation and Existing Problems

4.1 Achievements

4.1.1 High participation rates among the new immigrants with many of them receiving training. From its 2008 initiation until its application for the Guangzhou Award in 2012, more than 12,000 people have participated in the Program and received the Vienna Education Booklet; over 25,000 people have participated in the information module; about 4,800 new immigrants have entered Phase II training in the Program.

4.1.2 The Program has improved the new immigrants' ability to integrate into their new society. The program helps the new immigrants accept useful information and learn the local language as soon as possible. In this way they know whom to turn to for inquiry and help when meeting with specific problems, thus improving their adaptability.

4.1.3 The Program improves the new immigrants' sense of belonging and identity. The Program helps the new immigrants feel they are welcomed in Vienna. It can promote communications and exchanges between the new immigrants and local residents, which is beneficial to developing a sound neighborhood and creating a more harmonious urban atmosphere so that the new immigrants can have the sense of belonging and identity in Vienna.

4.2 Existing problems

4.2.1 Immigrant policies change too frequently, which has added difficulty to the Program's execution. Austrian policies about the settlement of immigrants keep changing. To adapt to the policy changes, the contents and offers in the Program must also continue to be updated. The Program Team needs to provide information about all new policies for the immigrants. This has added difficulty to Program



execution while also heaping new pressures upon it.

4.2.2 Professionalism of the staff needs to be improved. In the Program of New Immigrant Integration, the Vienna Education Booklet is the supporting training material, which is issued to each new immigrant in the Program. The Booklet involves many fields and contents. Some staff members in the Public Employment Service of Vienna, due to their limited education and work experience, cannot effectively use all information provided in the Booklet. As a result, the staff need to improve their own professionalism and master the Booklet and all its contents so as to provide better consultancy and training services to the new immigrants.

5. Lessons and Revelations

The Program of New Immigrant Integration in Vienna effectively integrates all social resources, provides the comprehensive quality service for new immigrants to integrate into the city rapidly and represents Vienna's cultural care for its immigrants. Vienna's practice deserves our attention to ensure the immigrants (including foreigners and floating population) can better integrate into the local community around the world cities, in particular the cities which are most open to the outside world.

5.1 Adhere to people-oriented management philosophy and facilitate the equalization of basic public service

Vienna is a city of immigrants. Over 50% of its population are immigrants or descendants of immigrants. Each day, many new immigrants come to the city. The Program of New Immigrant Integration represents the city's emphasis on its immigrants. The work of serving new immigrants

has been deemed as a municipal task. The Program presents the city's cultural care, in other words, it fulfills Vienna's people-oriented management philosophy.

We can learn from the management philosophy of Vienna and make an effort to help immigrants better integrate into all local communities and to include them into the effective urban governance and coverage of welfare. To promote the integration of immigrants, cities should adhere to a people-oriented management philosophy, give full respect and assurance for the legitimate rights and interests of the immigrants while ensuring the basic public services enjoyed by the local residents. They should be able to enjoy rights such as employment, training, health service, education for children. As these rights are extended completely to the immigrants the equalization of basic public services will finally be realized. In this way, we can help resolve the concerns of immigrants and help them integrate into the local community as soon as possible.

5.2 Adhere to the principle of "equality" and adopt the approach of "differentiated treatment"

New immigrants in Vienna come from different countries. In addition to those from adjacent countries like Serbia, Turkey, Polynesia, Romania and Croatia, they also come from countries in Asia, America and Oceania. For new immigrants coming from these countries, Vienna Municipal Government adopts the principle of "equality" by providing the whole set of integration services. At the same time, the Program of New Immigrant Integration in Vienna has the great characteristic of providing help for these new immigrants using their mother language. The Program has versions in 24 different languages. When helping the immigrants from different source countries, Vienna adopts the approach of differentiated treatment.



We can also learn a lesson from the experience of Program of New Immigrant Integration in Vienna about how to respect their citizenship and mother language while trying the best to provide the necessary help in their mother language when managing the foreign immigrants. When providing the integration help for the foreign immigrants, we should fully consider their differences in nationality, language and culture to provide personalized services and help them better integrate into the local society.

5.3 Establish a special administrative agency and a mechanism of coordination

Vienna has established Bureau 17, a new administration responsible for the integration of new immigrants. Except for Bureau 17, and Bureau 35 responsible for immigration, citizenship and civil affairs, there are a dozen governmental as well as non-governmental organizations involved in the Program, such as Vienna Employment Promotion Fund, Information Center for Migrants, Public Employment Service Vienna and Vienna Economic Chamber and Vienna Chamber of Labor. All these organizations have varied and clear-cut duties. We can learn from Vienna about its administration and their coordinated work with clear-cut duties and responsibilities.

For some big cities with a large population of immigrants and highly-floating population of immigrants, they can consider establishing a permanent institution, independent from others and responsible for managing the foreign immigrants while creating a mechanism of coordinating the work between relevant departments.

5.4 Enhance training and tutoring to improve the capacity of immigrants to integrate into the community

In Vienna's Program of New Immigrant Integration, each new immigrant

participating in the Program receives a *Vienna Education Booklet*, which guides him or her to take part in training courses on health, education, housing, employment and entrepreneurship. The Booklet also contains a coupon for a language training course. The comprehensive training of the new immigrants is the core content in the innovation program of Vienna. The training can effectively improve the new immigrant capacity to integrate into the society.

To promote the integration of immigrants into the society, it is necessary to reinforce their training and tutoring. First, they need to be educated about the common laws and regulations, urban lifestyle, urban culture and values in the city. Second, they need help with training on work skills and career development to promote their employment in the city. Third, language training courses and folk customs training courses may help them speak more freely with the local residents. Fourth, psychological tutoring for the immigrants and regular psychological consultation services are needed to improve their mental strength and ability of mood adjustment while increasing their threshold for managing any difficulties or setbacks.

5.5 Ensure the social organizations in the community play their roles in advancing the integration of foreign immigrants into the community

In the Program of New Immigrant Integration, Vienna effectively integrates all kinds of social resources and ensures all the social organizations within the community play their roles. By encouraging the social organizations in the community to organize public activities, Vienna promotes the communications and exchanges between the new immigrants and local residents, thus establishing a sound neighborhood and harmonious community atmosphere.

Cities, when promoting the integration of immigrant populations into



the local community, should consider making use of existing social organizations in the community. The government, by purchasing these services, encourages the social organizations in the community to organize popular cultural and sport activities while absorbing the immigrant population into these activities. It is necessary to promote communications and exchanges between the immigrants and the local residents, foster a harmonious and active atmosphere in the community and to enhance the immigrants' sense of belonging and identity within the community.

Journalist Observation

Considerate Service & Rapid Integration

In accordance with the administrative functions, Vienna's Municipal Government has 60 bureaus or departments. Department 17 is responsible for the integration of new immigrants, demonstrating the focus that Vienna's authority places on their new immigrants.

Ms. Zhou, a Chinese immigrant who has been there for over 2 decades, received us on behalf of Department 17. She has been working in Department 17 to help with the integration of Chinese immigrants. Though she is now retired, Ms. Zhou often offers her assistance to the Bureau. Another Chinese immigrant, Dr. Chen in his 60s, often goes to Department 17 to provide consultancy services for the new Chinese immigrants. He used to work as the lecturer in IT for a local university. In his spare time, Dr. Chen studies local laws and helps serve the new immigrants in a helpful way. He has continued to do so even after his retirement. Ms. Zhou says that there are not many Chinese immigrants to Vienna so they only need to go to the office once a month to receive a

few Chinese immigrants each time.

The Vienna Program of New Immigrant Integration provides service in dozens of languages, including the receptionists and booklets, to meet the needs of immigrants speaking different languages.

In Vienna Department 17, each day new immigrants arrive from different countries and make the first step from here towards their new lives. Vienna is called the city of immigrants because of the numerous immigrants living in the city and because of the city's emphasis on helping them.



Better Urban Transport System Saves Energy and Reduces Emission

——Inspirations from the “Car-Sharing” Project of Bremer, Germany

24 years ago, a niche environment-friendly concept “Car-Sharing” was born in Bremer, Germany. Now, Car-Sharing has become a popular and prevalent means of transport throughout the City of Bremer, which has improved the environment, transport and the utilization of urban public space by a large margin. In 2012, the Car-Sharing project made Bremer one of the deserving cities of the 1st Guangzhou Award.

Main Traffic Tools of Bremen City – Tramcar



The Car-Sharing project led by the Municipality of Bremer examined transport in a comprehensive way and started to offer “Bremer Karte + AutoCard”, a season ticket combining public transport and Car-Sharing access in 1998. The City of Bremer has reserved parking spaces and stations for Car-Sharing throughout the city, integrated the project into the overall urban development plan and implemented smart fleet management including the management of different types of cars for different purposes and needs. Results of the project are quite thrilling. Car-ownership has decreased by 30% among the Car-Sharing users, which means the number of cars of this city with 550,000-people fell by 1,500. It is estimated that the number will decrease by 6,000 by 2020. A revolution of car culture is also expectable.

1. Background Information

1.1 Environmental problems caused by heavy traffic call for new transport model

The City of Bremer has a population of 550,000 and car ownership of 250,000. That is to say, every two Bremer citizens own a car. Germany is the most populated country in Europe. Given its insufficient land resources, the road in a city can not be expanded infinitely. Environmental problems, including air quality degradation and noise pollution, resulting from excessive cars became a major challenge for Bremer. Besides, lack of gasoline, road being occupied by cars due to inadequate parking space and traffic congestion are also challenging issues the city administrators had to deal with. As “Green City” has become a popular idea, it’s a consensus of citizens to control the rapidly increasing cars.

In order to solve these problems, the Municipality of Bremer tried to develop a new means of transport with innovative ideas as a supplement for public transport and an alternative of private car-ownership.

1.2 Car-Sharing is an effective business model to improve environment

As an innovative project proposed by environmental activists in 1990, Car-Sharing has now become an environment-friendly and independently-operating business model.

According to Michael, officer of Department of Environment, Transport and European Affairs of Bremer, Cambio, the forerunning operator of Car-Sharing, now provides 150 cars for the project, covering 5,600 consumers. It has 42 special parking stations which were built on public parking places, which significantly reduces the cost for new underground parking lot. Some of the parking stations are set near the railway platforms and bus stops, which has led to an increase in the number of public transport riders. The average energy consumption has dropped by 50%.

Related statistics tells us that a shared car can replace four to eight private cars, which will ease the lack of parking places, reduce traffic volume and save land for public facilities. Cars for sharing follow the



Small Car-Sharing Station in The Narrow Streets



The Car Taking Procedure of The "Car-Sharing" Project

present minimum emission standard. Users can choose the most suitable type of car at the help of the car sharing system.

2. Concept and Implementation

2.1 Idea and highlights of the innovation project

Car-Sharing is a comparatively convenient car rental service. Users can book the car he needs via the phone or the Internet and pick up the car



at any sharing spot in the city. The rent is determined according to time and distance. This kind of transport service facilitates users' trip, relieves the pressure of road system, reduces the number of private cars and saves lots of parking places.

2.1.1 Car-Sharing is a highlight in urban transport innovation of Bremer. Bremer is a key city of car manufacturing and car use in Germany, shouldering huge pressures in air pollution, energy consumption, CO₂ emission reduction and other issues. Under this circumstance, the city administrators of Bremer put forward the project Car-Sharing.

Car-Sharing, as its name tells us, is a pattern where cars are shared by different people. Users only have the right of usage rather than ownership. It is similar to short time car rental service with simpler procedure. One can choose and book a car through the phone or the Internet and get the car at any sharing spot in the city. And time of use and distance determines the rent. Maintenance, repair, insurance and parking of the cars are managed by service providers.

The difference between traditional car rental service and Car-Sharing lies in the charging methods. The former charges by day, which is more suitable for long time and long distance trips. The latter depends on the Internet of Things (LOT) and other new technologies and it is usually paid according to the mileage as well as the renting hours.

In Bremer, any member of a club can have access to the cars of the club. Cambio is a professional operator of Car-Sharing. A customer pays a small amount of money to Cambio and can get a password card. He or she can book a car by calling or via the Internet and then pick up the car key with the password card at a nearby sharing parking spot. After using the car, he or she can park the car at any sharing parking spot and return the key in the code box nearby (see Figure 1 for detailed procedure). The rent will be calculated according to the time of use and the distance the

car covers. Bills will be sent to the user at the end of every month by the company.

2.1.2 Idea Renewal is a foundation for the shift of transportation pattern in Bremer.

A car is the most convenient means of transport at present. In particular, private sedans are free from restrictions of time and route. However given the limited carrying capacity of road, it is not allowed for the number of motor vehicles to grow without control. It is necessary to develop alternatives of existing means of transport in order to keep the number of cars at a reasonable level. How to make people choose alternatives willingly rather than private cars lies in the "intrinsic motivation" of the citizens. In order to increase the citizens' "motivation" and awareness, the Municipality of Bremer started a campaign of renewing ideas in all walks of life.

First, the Municipality made great efforts in advocating the idea of "Green City". Citizens saw the increase of cars and the degradation of air quality themselves. Thus, they had a consensus on changing the present situation. The Municipality also made a card-brochure, vividly illustrating the concept of "Green City" and the environmental problems caused by increasing cars. The small brochure is designed in the form of cartoons and even children can understand it. Consequently, social organizations and civil organizations carried out heated discussion and wide advertising. "Green City" became a hot spot of public opinions. Environmental protection has become a kind of social awareness that is politically correct.

Next, Bremer also strongly promotes energy conservation. In terms of economic structure, industry consumes only 28.9% of energy, less than one third, of the total energy consumed. Energy-consuming industries are mainly automobile, steel and shipbuilding industries. Thus, the government expresses concern with potential energy crisis,

and in the context of Bremer's reliance on energy imports encourages transportation by bus and bicycle and the Car-Sharing plan.

Moreover, the combination of means of transportation and lifestyle demonstrates a healthy, rational and vigorous trip mode. Citizens of Bremer are inclined to ride bicycles due to the healthy lifestyles. Currently, 26.5% of people take riding bicycles as a means of transportation rather than physical exercise. The number is on the rise.

Finally, the government is also promoting rational economy. "Use it – don't own it" is very popular among young people. The slogan also helps make Car-Sharing widely known.

The government adopted Car-Sharing in 2009, setting the target of reducing private cars. The plan not only accorded with the resource-efficient concept but also the intensive principles. So it is remarkably effective. It is estimated that a "shared car" can replace eight private cars. Presently, the plan is making steady progress and a new mode of transportation is gradually taking shape. In Bremer, 43% of Car-Sharing members used to have cars and after a year, the figure dropped to 12%, which is quite impressive.

Thus it can be seen that ideological innovation plays a leading role in urban innovation. Through publicity measures, the government of Bremer provoked much discussion among citizens. Hence a consensus is reached. This ethos will exert certain influence on urban innovation and change people's behavioral choice.

2.2 Specific steps taken

To translate innovation into reality, only an idea is far from enough. The government of Bremer has taken such measures as:

2.2.1 Building cycling lanes

Bremer now enjoys the highest rate of bicycle usage in Germany. On

the sidewalks of all streets in Bremer are special lanes for bicycles. 560-kilometer-long bicycle paths have been built in parallel with the roadways. There are bicycle paths in parks, green spaces and bunds. In addition, the Weser Bicycle Path, 500 kilometers long, was built, from Minden via Bremer to the North Sea; a 150-kilometer-long bicycle path from Bremer to Hamburg was built.

2.2.2 Provision of street space for Car-Sharing stations

Plans must be adjusted if the Car-Sharing plan is to be implemented in urban built-up areas. Based on the actual situation, the government designated lands for Car-Sharing Stations. The plan is carried out in a way similar to car rental: stations are built all over the city where people fetch and return cars through intelligent systems. The scale of stations varies. Some stations can only hold three cars, thus saving the work of supervision. Currently, there are 50 Car-Sharing Stations in Bremer.

2.2.3 Provision of shared space for multiple vehicles



|Transport Infrastructure



| Car-Sharing Station

Different vehicles can share road space in Bremer, which greatly improves the utilization efficiency of urban space. On Bremer's main road, tramcars, buses, taxis and private cars are moving in order. Of course, no matter parallel routes or cross routes, traffic lights are set to let tramcars go first.

2.2.4 Bus priority and bicycle priority

The transportation planning stipulates that cars should make way for bicycles and bicycles can take a reverse direction. Bremer has built special bus lanes and set up road signs and direction indicators on all the bicycle paths. What's more, intelligent signal lamps also enhance bus priority and convenience. The major parts of 15 roads have granted bicycles priority over cars. Since 2005, the number of people taking bus has been on the rise.

2.2.5 Building stations for depositing bicycles for the convenience of cyclists

Bremer citizens can always rent a bike at the roadside and ordinary communities can also provide the service. Through intelligent management, bicycle rental, payment, return, damage insurance and other processes can be done automatically, which is very convenient. Even travelers in Bremer can rent bicycles. These measures have inspired citizens to use bicycles.

2.2.6 Encouraging green transportation through multiple measures

First, the public transport system is upgraded. Bremer has introduced the 18-meter-long trolley buses, adopted the Euro V standard for bus priority and upgrade buses. Second, people riding bicycles are awarded. The city provides insurance and incentives for cyclists. Third, urban clean zones are established. Only buses and cars that meet the emission standards can enter these zones, while bicycles have no limitation.



| Bicycle Depositing Spot



3. Achievements

The Car-Sharing Project improves the utilization efficiency of cars and effectively reduces the number of private cars and the traffic flow, thereby easing traffic congestion and parking shortage, and reducing 2,000 tons of carbon dioxide emissions. The advantages of Car-Sharing are reflected in the following aspects:

3.1 Lower costs of car using with diverse choices

In Bremer, 60% of car renters are businessmen who rent cars for work and commercial activities. Renting a sedan car costs 1.9 euros per hour, 130 euros a week. Each Car Sharer can save money on using cars and choose a suitable car according to their demands. For example, one can choose a cart for furniture purchase; a family can choose a spacious sedan for outing; a young man in love can choose a beautiful sports car to impress his girlfriend. Participants no longer need to buy their own private cars and can still enjoy a whole set of services through a smart card.

3.2 Improved efficiency of car utilization

In Bremer, private cars only run for less than one hour a day, while a shared car can replace six private cars. A car is shared by many people and they can use a preset password in their mobile phones to make calls to carpool volunteers. Then the driver will drive to a station nearby and wait for them. One can also make an appointment to use the car in the commuting time, and for the rest of the time, the car is at the service of other renters. Specifically, a shared car is available to 10 to 15 people. They buy and share the right to use the car, which greatly improves the efficiency of car utilization.

3.3 Car-Sharing saves space

For the government, building “Car-Sharing” stations is more economical than building underground garage. In downtown Bremer, an underground parking garage costs as much as 15,000 to 40,000 euros per square meter, much higher than the price of a private car. According to the status quo of private car ownership in German households, the sharing service helps reduce over 1000 private cars – If these cars lined up, a five-kilometer-long parking lot would be required. Thus Car-sharing significantly saves space for motor vehicles.

3.4 Easing up the traffic jam

According to the research conducted by the local government, the number of private cars will deduct 11 when one shared car is added. Also, the research shows that 50% people own a private car before they take part in “Car-Sharing”, and 37.1% of them give up driving private cars later. The number of private cars declines dramatically which eases up the traffic jam on urban roads.

3.5 Energy conservation and emission reduction, improving the environment quality

Based on a survey from a Swiss agency, each Car-Sharing user can decrease the emission of 290-kilogram carbon dioxide. Owing to the “Car-Sharing” project, Bremer can reduce the emission of 2000-kilogram carbon dioxide, a year which decreases the pollution of vehicle exhaust and improve the air quality.

4. Revelations

We need to discuss the following aspects for promoting “Car-Sharing” in

Guangzhou by referring to the mode in Bremer.

4.1 Popularizing the awareness of "Car-Sharing"

The successful implementation of "Car-Sharing" requires the joint efforts from both the government and enterprises. In terms of popularizing the awareness of "Car-Sharing", we should not only attract users to employ "Car-Sharing", but also guide enterprises into this industry. It is a crucial step to popularize the awareness of "Car-Sharing" when carrying out the project, which exerts a great influence on the final success.

4.2 Offering preferential policies of energy saving and emission reduction for "Car-Sharing" enterprises

"Car-Sharing" can reduce the number of private cars, ease up urban traffic jam, decrease greenhouse gas emissions and offer high-efficient, convenient and optional trip modes. Also, "Car-Sharing" adopts cars with low emission and high fuel efficiency. Thus, "Car-Sharing" is beneficial for energy saving and emission reduction as well as environmental protection, which is for public welfare. We should support the development of "Car-Sharing" by offering preferential tax of energy saving and emission reduction for "Car-Sharing" enterprises or organizations, especially for those of applied electric vehicles.

4.3 Promoting Internet of Things into the auto industry

The precondition of developing "Car-Sharing" is to combine Internet of Things with the auto industry. Therefore, the local government should give priority to the R&D project of Internet of Things into the auto industry.

4.4 Promoting pilot "Car-Sharing" project at new city zones

Due to the limited and fixed space of old towns in most cities, the cost

of promoting "Car-Sharing" project is quite high. On the other hand, new urban districts are in the course of construction and planning with unsettled space and short action radius, which is suitable for promoting the "Car-Sharing" project. The local government should bring the "Car-Sharing" into transportation planning in the development program of new urban districts and provide supporting infrastructure for the "Car-Sharing" industry. Based on the experience in the pilot "Car-Sharing" project, we can spread it to the whole city.

4.5 Encouraging electric vehicles to adopt "Car-Sharing"

"Car-Sharing" project enjoys a centralized management towards all cars involved. Such a mode facilitates the construction and battery charging of charging poles of electric vehicles as well as the change and recycle of batteries. Furthermore, cars of the "Car-Sharing" project have a short drive radius, so their demand for charge capacity is relatively low, which provides superior condition and foundation of the combination between



| New Energy Resource - Using Wind Power



electric vehicles and “Car-Sharing” project. Thus, we should encourage “Car-Sharing” project enterprises to communicate with automakers directly so that automakers can develop batteries and charging equipment according to the “Car-Sharing” project. We need also help automakers get into the area of “Car-Sharing” to connect development and commerce.

Journalist Observation

Low-carbon Travel Well Accepted

On the following day after arriving in Bremen, Michael, the Senior Project Manager of the Bremen Bureau of Environment, Construction and Traffic, introduced to us the general picture of traffic in the city. Unexpectedly, our interview and survey team aroused attention from many local newspapers and TV media. They wondered why we had traveled such a long way just to cover car-pooling because it is a very common thing in the city.

If it were simply auto leasing, there would be nothing special about it. As a matter of fact, you can also find auto leasing in a general sense in Germany. Nevertheless, car sharing has been operating in the city of Bremen for 24 years and wonderful results have been accomplished. It is truly exceptional, isn't it? The local media seem to be taking it for granted too much.

We happened to meet Mr. and Mrs. Dressen in the car-sharing station, as they were about to return the car to the station. They told us that they would use the shared car once a week and their home was just about 300 meters away from that station. Old Mr. Dressen said they and their two sons didn't own a private car. He said, “Now many young people

think owning a car isn't cool at all. They even feel it's a shame to drive in a limousine.”

The words of Mr. Dressen perfectly matched what Michael had said. In Bremen and in Germany as well, the function of auto as the symbol of status and dignity is phasing out. People are now accepting low-carbon and environment-friendly means of travel. Data has proved this to be true. When calculating preferred modes of transportation, Bremen residents would choose 20% walking, 25% cycling, 15% public transport and 40% cars.



Urban Development and Environmental Protection

——Inspirations from the Initiative of Chiang Rai, Thailand

Since Thailand's Chiang Rai City adopted the initiative of Enhancing Urban Ecosystem and Biodiversity, it has made several achievements in raising the people's awareness of environmental protection, improving the biodiversity and preserving the eco-environment. Its success provides demonstration and paradigm for other cities to deal with their own problems of environmental disruption during the process of urbanization. In 2012, the initiative excelled within the 255 candidate initiatives for the Guangzhou International Award for Urban Innovation, with Chiang Rai City becoming one of the 10 Candidate Cities.

1. Origin

As cities expand rapidly, they also face even greater pressure for eco-environmental preservation. According to Thailand government's instructions about developing trade and tourism with surrounding countries, North Thailand has become the economic center connecting Greater Mekong Sub-region (GMS) and the Bay of Bengal Initiative for Multi-Sectorial Technical and Economic Cooperation (BIMSETC) in South Asia. Its trade with, China and Myanmar has been growing rapidly and urbanization in Chiang Rai City is expanding even faster. The economic

growth will definitely attract more enterprises and population while facilitating urbanization. When building such a large quantity of facilities and infrastructures, many farm fields become residential areas. At the same time, natural resources such as forest, water, animals and their natural habitats are shrinking and the environmental problems are becoming worse. Chiang Rai City is also facing the test of ecological problems such as the reduced farmland, garbage treatment and environmental changes. Fortunately, the local government has realized these problems and since 2008, Chiang Rai City has adopted the program of "Enhancing Urban Ecosystem and Biodiversity in Chiang Rai City". This program involves the participation by government agencies, academic teams, organizations, commercial bodies and research teams.

2. Concept and Implementation

The program kicked off in 2008 and it represents a key change of Chiang Rai in its response to the quick urbanization and climate change. In terms of policy, the old policies focused on building Chiang Rai into an economic center on the Mekong River. Unfortunately, it focused too much on economic growth while neglecting eco-environmental preservation. The initiation of the program means the government has shaken off its old policy. The urban development is not only targeted at economic growth, but also at the sustainability of the city.

2.1 Concept and goal

The project philosophy is "building a healthy environment, following the ideas of Buddhism, focusing on citizens' welfare and developing a liveable city". Chiang Rai has made development measures in order to realize its target corresponding to its new philosophy. The original

approaches to control the environment help alleviate and adapt to the climate change, and thus the biodiversity preservation can be closely linked with local economic growth. At the same time, the government has changed its role in the program from the “executor” to that of “helper”, encouraging the citizens and local stakeholders to get involved in the program actively and helping them establish a great awareness and sense of responsibility.

The program of “Enhancing Urban Ecosystem and Biodiversity in Chiang Rai City” is dedicated to the restoration and preservation of the ecosystem’s diversity in the city, so as to secure the ecological balance of urban development while maintaining the harmony of economy, society and environment. Specific targets include:

2.1.1 The program intends to build Chiang Rai City into a green and livable city that inherits Buddhism while focusing on the people’s livelihood, thus preparing for the establishment of ASEAN Economy Community (AEC) in 2015.

2.1.2 The program intends to build a low-carbon city, paying attention to CO₂ emission reduction. By preserving the urban ecosystem and improving biodiversity, the program hopes to improve the city’s ability to respond to climate changes while getting ready for and making emergency response plans for any natural disasters.

2.2 Implementation

The program of “Enhancing Urban Ecosystem and Biodiversity in Chiang Rai City” mainly preserves the ecological resources in the forest, urban ecology, agricultural ecology and wetland ecology.

2.2.1 Integration of ecological knowledge into class teaching to convey ecological knowledge to the students

Relying on Chiang Rai No. 5 High School, the Program is implemented



Natural Ecological Knowledge into Teaching Design

through specific measures such as teaching. Chiang Rai No. 5 High School is one of the largest high schools in the city with over 1,000 students. The school has a botany garden which is sponsored by Princess Sirindhorn. The botany garden provides a venue for the ecological education.

Students in the school will learn 8 courses altogether: mathematics, Thai language, English, Science, Music and Art, Health and Body Education, Social Studies, and Career and Skill Learning. The school integrates the ecological knowledge into the teaching activities of these 8 courses. The



Rich Outdoor Activities to Understand the Ecological Environment



High school principal shows the academic achievement of Chiang Rai City' s program

teachers integrate relevant ecological knowledge into the curriculum by teaching some ecological knowledge about plants, etc. For instance, in teaching Music and Art, the teachers would teach the students to draw plants. In the course of Health and Body Education, the teacher would take the students to the botany garden to look for the medicinal herbs. When teaching Social Studies courses, the teacher would teach the students to draw a plant distribution map in Chiang Rai. While studying English, the teacher would teach the students the English names of plants. Through class teaching, post-class practice and research, the students can quickly learn the basics of ecological knowledge.

2.2.2 Conduct outdoor activities to learn about eco-environment

The school also takes the students to the city's wetlands and teaches them professional knowledge about observation and use of water resources

and forest resources. For instance, the school would take the students to observe and record the growth of moss and test the preservation of air and environment; the school would organize a competition about finding trees to encourage them to understand and learn the growth of trees, calculate the number of trees and improve their awareness of protecting the ecology, etc.

2.2.3 Working in conjunction with communities and colleges to preserve the agricultural ecology

Relying on the local universities and research bodies and depending on community volunteers, Ecological knowledge is delivered to the farming community so as to improve the quality of green agriculture. For instance, the volunteers teach the farmers how to deal with straw, how to plant organic vegetables and paddy rice, thus improving their awareness of eco-preservation and skills.

3. Performance Evaluation

3.1 Achievements

To date the program has made the following achievements: characterizing the reserves of the forests, lakes and rivers; learning knowledge about local biodiversity; expanding the area of green space and improving the over-all living standards of citizens, etc. The program also boosts tourism development, increases tourism revenue, promotes the new education programs in the school, improves and consolidates the community relations, reduces conflicts and contradictions and alleviates social pressures. After seeing the effects of the program, the government has decided to include the program into the city's 3-year development plan as well as allocate funds for the program.

The program has reformed the model of urban and environmental development. In the past, the City Council had to finalize the planning and implement the plans on its own. Occasionally it was unable to satisfy



the people's needs. As people were not yet genuinely involved in the process of implementation, they hadn't developed a sense of ownership. However, the program focuses on the process of participation. Since being put into practice, it has improved the people's involvement. For instance, the participants have learned how to plan, follow up with the progress on a regular basis, use the proper techniques to make investigations, collect samples and identify the samples of plants and animals. What's most important is that they have learned to combine the collected data (early-stage data) with local realities to preserve the environment. At the same time, they have learned to make short, mid and long-term development plans and consider environmental preservation. They are able to make excellent use of the existing resources and biodiversity and see them as a venue of learning as well as a living museum. The City Council owns the major resources and can help with implementation of the above activities.

When implementing the program, the government has fully mobilized the force of Chiang Rai citizens and educational institutions. By participating in the program's implementation, the citizens and social organizations have improved their capacity to preserve the ecology. Aside from these varied benefits, the process also cultivates the citizens' sense of responsibility and passion for public affairs, which is beneficial for establishing and developing the civic society of Chiang Rai.

The program's implementation has had a certain impact on throughout the world. For instance, the program was invited to be displayed at the 2010 Urban Biodiversity Summit held in Japan in October 2010. In October 2011, the program won the Demo Award of Urban Biodiversity Preservation on World Habitat Day in Moscow. It has enticed the governments of numerous cities to make technical tours and learn from its experience.

3.2 Existing problems

3.2.1 Narrow scope of program implementation and low penetration

Currently the program is implemented in a single school, which is only one of the 8 high schools in Chiang Rai City. In other words, only 12% of the students in the city have received the program's information. The narrow scope of implementation, makes it hard for the program to be highlighted.

3.2.2 The urbanization process in Chiang Rai City is not evident enough. The city still focuses on agriculture and there are few cases of urban development impacting the ecology. As a result, the outcome of the program is not very apparent or convincing.

Chiang Rai City does not have a modern industry. Besides, its commerce is less developed and the city has almost no high buildings. Though people living together will also be a detriment to ecological preservation, yet with the low level of urbanization, there are not typical cases of solving ecological problems in the process of urbanization. Thus the effect of the program is not evident.

3.2.3 Chiang Rai's economy is less developed; the people have poor awareness of environmental protection, which is not beneficial for pushing forward the program.

The Chiang Rai citizens' poor awareness of environmental protection is mainly determined by their economic development level. As a popular saying goes, "People have more to think about only after they have enough food and warm clothing." It means that only after the economy has been better developed, will the citizens consider things beyond their basic necessities. Many countries take the path of developing economy before harnessing their environment which is why the Chiang Rai citizens have such a poor awareness.

The poor economic development performance in Chiang Rai leads to the local citizens to have a poor awareness of environmental protection.

Chiang Rai lies in the north of Thailand, which is a traditional agricultural area. Today, agriculture only makes up 12% of Thailand's contributions to the GNP, which is far behind the manufacturing industry (38%) and service industry (50%). According to the statistics of August 2013, the GDP of North Thailand, where Chiang Rai is located, only accounts for 8% of the country's total. This is slightly higher than West Thailand (3.6%) and Central Thailand (5.6%) and is far behind East Thailand (18.1%) with Bangkok and neighboring regions marking 43.8%. As a result, for Chiang Rai citizens, their first pursuit is economic growth and higher living standards. Furthermore, because Chiang Rai's industrialization is not high enough, the environmental damage are not so serious as to deeply impact the people's life. As such, in the list of the citizens' policy needs, environmental protection lies behind the economic growth and better living standards.

4. Enlightments of the Program

Ecological development is an important premise for the sustainable development of a city. How to secure the target of preserving eco-environment in the process of urbanization is an important issue in the urban development. The Chiang Rai program to preserve the urban eco-environment, Provokes us to think about the following points.

4.1 Make scientific rational top-level design while placing eco-environmental preservation on the priority position of urban development

As the principal party held responsible for the preservation of the eco-environment, the government should improve its laws, rules and regulations and make rational regulations and mechanisms, laying the institutional foundation for the ecological preservation. For instance, the government should organize special forces to survey and understand



Presentation of Their Project Results

the basic situation of the waters, forests, hills, mountains, and wetlands. After obtaining the detailed information, the government should build a databank and compile a balance sheet of natural resources. It can improve the city's ecological space planning and make different plans interrelated in a rational and scientific way. Besides, the city should implement the environmental protection(EP) evaluation mechanism for engineering and industrial projects; improve the quality and efficiency of EP approval; add the content of ecological auditing in the government officials' performance evaluation and office-leaving auditing; explore science-based and rational garbage treatment approaches, and enact regulations about billing for the garbage treatment. It should try its best to avoid the path of harnessing the environment after the economic growth, thus providing powerful support for the ecological and environmental preservation in the city.

4.2 Add ecological education to the curriculum of primary schools to provide ecological education for the young people

The issue of ecological and environmental protection is about the



Presentation of Their Project Results

relationship between man and nature. It reflects how well mankind handles the relations between their own activities and the nature around them. Mankind's ecological knowledge and value will directly influence the effect of ecological and environmental preservation. As a result, it is very important to enhance the education of ecology for the people. Such education for the younger generations is of particular importance.

It is worthwhile to learn from Chiang Rai City's efforts to disseminate the ecological education among the secondary and primary students. The other cities can also establish the ecological education system in their own secondary and primary schools. They can take the following measures. First, ask the schools to use the regular class and include the ecological education into the curriculum and contents in the exams. Second, they can ask that the schools add certain amount of ecological knowledge in the curriculum. Third, the school's administration can spearhead a compilation of booklets

about the development and the current situation of urban ecology so that the students may read them and their sense of ownership will be triggered. Meanwhile, their sense of responsibility for the environment will also be stimulated. Fourth, organize the city-wide ecological education campaigns on a regular basis to form an atmosphere of ecological civilization.

4.3 Use the force of volunteers and encourage NGOs to participate in preservation of ecology and environment

In recent years, the government has taken upon itself the major responsibility for ecological and environmental preservation. At the same time, the government has become the punching bag of ecological contradictions, facing great pressure. The government has due responsibilities to supervise the ecological environment and cope with violations of ecological and environmental laws. However, the social organizations such as NGOs should also be involved in the work so that the government, NGOs and individuals will all become the major players in the campaign, rather than just the government alone. In this way, the strong points of these players will be fulfilled and their collective force will be exerted to promote the development of ecology.

While the government makes laws, rules and regulations, the NGOs can participate in or even dominate the other aspects of the environmental protection. For instance, the NGOs can play the role of monitoring and finding the environment-damaging people or institutions. The government can purchase the service and NGOs can organize or spearhead the ecological evaluation in a certain region, organize the ecological education campaigns, or evaluate the awareness of ecology. The government should respect the ideas and suggestions of the NGOs and ask them to help establish and improve the rules and regulations, etc.

A Bridge Connecting Government and Citizens

——Inspiration from Kaohsiung's "1999" system

In order to promote the service quality of government, Kaohsiung City Government implements the enterprise level of custom service into government customer service system. From 2007, a free call-in system called "1999" was initiated to ensure user satisfaction and a high degree of quality of life. It was designed to resolve people's needs, collect people's advice, tackle people's complaints and enhance the governmental social management and service. This entry applied for the first Guangzhou International Award for Urban Innovation (abbreviated as the Guangzhou Award) in 2012. Distinguishing itself from 255 entries from all over the world, it was awarded as nominated entry and was approved by the jury.



“1999” Public Advertisement

1. Introduction

1999 speed-dial line is widely used for citizen services in some regions of Taiwan at present, including Taipei, Kaohsiung, Taichung and Tainan. The system in Kaohsiung is the most effective, for it has new breakthroughs in operation. In 1999, the enterprise level of customer service was introduced into government customer service system, and it has improved the overall service quality of city government and service satisfaction. In the same time, with the concept that the city should be ruled and taken care by both public sector and the private sector, the system involves enterprises into the daily operation with the government purchasing their services.

The system 1999 was planned to construct in 2007 and started operation officially in 2008. Kaohsiung county and Kaohsiung city were merged in 2010, so the county was included in the service since then. In addition, on 1st of March 2011, the whole Kaohsiung area was covered. Now in the 1999 Call Center there are 8 managers, 36 staff members (including 16 disable people), and 29 seats. In 2013, the number of callings exceeded 800,000 in total with more than 2000 calls per day.

2. Background Information

2.1 Citizens' higher demand for governmental service

With the improvement of the government's service conscious and the resident's rights consciousness, the contact between citizens and the government is becoming more frequent, and the demands for the government service is becoming more extensive. Before the 1999 system was in operation,, citizens had to contact with the relevant bureaus directly for personal requests, which led to a series of problems. First, due to various bureaus, it is hard to find the exact one to deal with

personal issues effectively. The process is always complicated and time-consuming. Second, functionaries and officials are taken up for citizens' cases so that they could not carry out their own work. Third, government bureaus are only available during day time in workdays, which contradicts citizens' free time and results in much inconvenience. Therefore, citizens are expecting an anytime available platform for all kinds of service.

2.2 Concept of involving citizens in governance

The government of Kaohsiung city attaches great importance to an idea that ruling a city is a shared responsibility of the government and every citizen. It is contended that not only a good government is needed, but also a group of good citizens are needed. Citizens are encouraged to express their thoughts and suggestions for the city development and supervise the malignant phenomena, so as to inspire themselves to love and care the city as a master and enhance their

ability to rule the city to create a safer, happier city with joint efforts. Therefore, the government is in need of a mature mechanism to know about citizens' opinions and wishes.

2.3 Urban industries' demand for foreign exchange

Kaohsiung is an important port in Taiwan as well as a city in significance for aviation and tourism. There are a great number of people coming to visit and trade. Moreover, frequent big events and international communication activities have attracted even more foreign travelers. It is of great essentiality to serve the guests well and create an appropriate environment for trading, travelling and dwelling, which relates to the long-term development and the international image of Kaohsiung industries. Therefore, an access which can provide various conveniences for foreigners is of great necessity.

3. Methods Applied

3.1 A standardized system of instant response

"1999" is a free call-in system which deals with citizens' problems and suggestions within 24 hours with any issue during the whole year. By integrating computer phone system, customer service system, automatic phone distribution system, digital recording system and automatic fax and framing system, it has been able to unify the system and database. At the same time, 31 categories of each bureau are combined as a general database, and three responding mechanisms are adopted, that is instant responding, recording and delivering (recording citizens' opinions and suggestion towards the government and reflecting them to the related bureaus immediately), and dispatching directly (dispatching the issues to related bureaus based on their responsibilities) it provides an effective

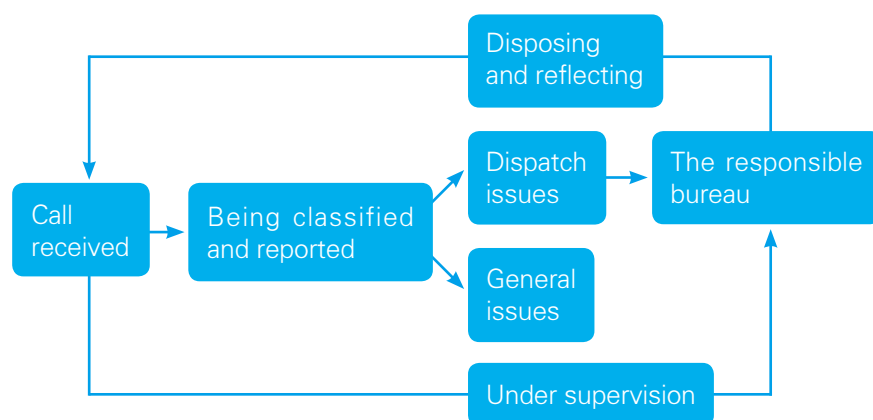


| "1999" Office Center

response to various issues. In addition, the standardized and automatic workflow, the back in-call analysis and the satisfaction questionnaire ensure the high quality of this social service. 52 kinds of services are available on “1999”, including public works, infrastructure maintenance, water resources, transportation, environmental protection, as well as emergency related to Police department and Fire department. Anyway, whatever issues concerning citizens’ life and the development of the city are welcomed on “1999” for an instant solution. It is promised that generally all the consultation brought up should be answered in 15 seconds and infrastructural fault should be settled in 4 hours.

3.2 A comprehensive supervision system

System 1999 is subordinate to the Commission of Research Development and Assessments of Kaohsiung City, which deals with formulation of development and reform plans, policy research, assessment of government departments, disciplinary inspection and pleads collection and analysis. After receiving a call from a certain



The Flow-Process of a Call to “1999”

citizen, the whole process will be under supervision and according to emergency and responsibility, it will be classified and reported to the related bureau. The responsible bureau has to arrive at the scene in time and report to “1999”, and “1999” will call back until the supervision is cleared. This is an effective responding system, which ensures that every issue has its response and solution. For instance, in December 2013, the amount of solved issues reached 72186 and the rate of solution is 97.18%.

3.3 Data-based decision making

“1999” is not only aiming at solving the detailed problems that citizens bring up, but also advocating citizens to purpose suggestions and strategies for city ruling and caring. After every call on “1999” is settled, the related information will be recorded into a database. By sorting out a large quantity of data, it reveals the heated problems, the amount of a certain department involved, and the different kinds of entries. These statistics are handed to the Kaohsiung City Government as references

The Popular Issues of Citizens’ Calling

December 2012	January 2013	February 2013	March 2013
Social aid	Administrative problems	The lantern show	The tsunami
Metro discount tickets and information signs of transfer	Tourist spots	Administrative problems	Bureaus’ phone number
Big events	Social aid	Traffic route	Administrative problems
Traffic route	Consumption dispute	Tourist spots	Law consultation
Administrative problems	Holidays and workdays	Bureaus’ phone number	Social aid

monthly, quarterly and yearly, which amounts to an objective and comprehensive questionnaire done while resolving citizens' issues. According to these data, the City Government can easily find out the key points of their work and formulate a series of policies. This action also arouses the citizens, enthusiasm to participate into the city management and strengthens the harmonious relation between the government and citizens.

3.4 People-oriented staff management

There are 44 employees working for “1999” and 16 of them are moderately and even severely disabled people (two are blind). In the office, wheelchair accessibility is installed and shift working is applied to meet the special needs of the disabled, which suggests the love and priority of disabled people that have been appealed to by the city administrators. “1999” has also set up a calling system to pass on love. Rather than receiving calls from citizens passively, they call citizens actively to provide them with guidance and help. For example, they combined Social Affairs Bureau and Department of Health to make out calls for new born caring, reminding the parents of the social welfare of infants and collecting information of the elderly who live alone. The purpose is to connect Love with Welfare of the society.

3.5 Advanced technologies

Since “1999” was constructed, it has been insisting on offering convenient services with advanced technologies. With the applications of smartphones being widely used, an APP named “1999” was launched in time. Based on the original calling service, now every user can log in the APP and obtain the same service. This APP was designed to be cozy with a friendly atmosphere, representing a concept of happy



|The Working Disabled Operator

city life. There are 6 kinds of service: Mayor's mailbox, maintenance, government news, traffic information, disaster relief and prevention. It is as convenient, friendly, and effective as the phone calling system, as it only takes a few moves of the finger.

4. Service Satisfactions

Since “1999” was initiated, it has attached great significance to the satisfaction of the citizens. On the wall of the office center, there is a sign instantly revealing the satisfaction of the current service which is to urge the staff to take every call seriously. The level of satisfaction



The Sign of Call Services Real Time Monitoring

is directly related to the performance of every working staff member. For example, if the average satisfaction level of a certain operator's service is under 85% that day, it will exert a bad influence on the operator's monthly performance. Additionally, "1999" has entrusted a research firm to conduct a survey on citizens' satisfaction of its service.

With the long-term efforts, "1999" has attained the widespread approval of the Kaohsiung citizens and it has become an important part of people's life. The yearly number of callings has increased from 160,000 of the first year (2007) to 800,000 in 2013. The Annual questionnaire shows that the level of satisfaction remains over 95%. The good deeds from "1999" are often reported in newspapers, which undoubtedly enhances the prestige of the government.

5. Revelations to the Municipal Service Line Construction

Providing government call services to service the local people has

been the trend of urban development in social services, as well as the specific manifestation of an increasingly mature civil society. "1999" reflects this concept of local government services, the breakthrough and innovation of services, improvement of the efficiency of the government and the strengthening of governmental supervision. Other cities can learn from the concept and practice of Kaohsiung and pay attention to the problems facing and solutions provided by that city. "Government Service Line" based upon long-term development, rational planning and step-by-step progress, serves as a bridge between the general public and the government to jointly promote the upgrading of urban management and service levels.

5.1 Establishing a special government service line based on the people-oriented concept

First of all, services should be intellectually oriented in operation. We can, based on call services, make it access to the Administrative Service Center, improve online government services forums, develop mobile and computer smart software and other new media platforms to provide government services and achieve an exchange of scientific information. So we can provide the public with more convenient channels for government services while lowering the cost of services. Secondly, in terms of services, the gradual improvement of services, in addition to the consulting and processing of government affairs, we should also involve such services including domestic water, electricity, gas, telecommunications, travel and so on. Finally, in terms of service targets, in addition to the public, we should also keep in mind migrant workers, tourists and so on in an effort to continually enhance the attractiveness of the city, achieving a comprehensive coverage of services.

5.2 Strengthening functions in decision-making and supervision of the Government Service Line

In order to be recognized internationally, “1999” has found it essential to enhance its ability for a strong implementation, supervising departments concerning taking initiative and responsibility. First, establish a scientific system of standardization services, with every part of the call services standardized and strictly enforced. Second, strengthen professional training for phone operators and make scientific and rational judgments on the call content to ensure that people's problems will get timely solutions. Third, improve the supervision of after service mechanisms, together with news media to conduct a comprehensive follow-up investigation. Establish specialized inspection teams capable of conducting specialized supervision with on-site inspections to ensure that contractors and departments can earnestly fulfill responsibilities. Fourth, strengthen accountability mechanisms. Government Special



A Panoramic View of Kaohsiung

Service Line makes regular public notifications on those who fail to qualify in providing services and holds accountable those fail to fulfill their duties.

5.3 Playing the role of decision-making by government service special line

What distinguishes “1999” from the traditional government services is that “1999” not only meets people's urgent needs but also helps develop the city as needed, providing advice to long-term development within the city. Any city, When a government service line is put into practice, the city government may find a substantial increase in needs from citizens for promoting issues through the line. We could consider developing the government service line into an important platform for a broad understanding of public opinions. The government is advised to establish scientific, statistical service systems and databases to record every reasonable comment or question in order to accurately grasp the idea of the people in the formulation and implementation of major policies. In this way they may be able to keep the government policy more in line with the citizens' needs and expectations.

Journalist Observation

Manhole Cover Missing? Solve a Mathematical Problem? Just Call 1999!

In Taiwan's Kaohsiung, when primary students are not able to solve a mathematics problem, tourists are unable to find a satisfying hotel, or local citizens find a manhole cover missing, they all do the same thing. Pick up the phone and dial 1999.

1999 is the hot-line number of Kaohsiung's Know-all system, which was



established in 2008. In the beginning, only 16,000 calls were received per year. At present, the annual calls have climbed to more than 790,000. The 1999 Know-all system of Kaohsiung has become an indispensable information center for the local citizens. How does this seemingly ordinary free number become so popular in Kaohsiung?

“Every issue has its response and solution” is this hot-line’s principle. The citizens enjoy its 24-hour response mechanism most. “To realize the desires of our citizens, we are moving forward with helmet on the head”, XIE Tingsong, the Director of the administration responsible for operating the 1999 Kaohsiung Know-all system, said. In its initial stage, a booklet introducing the service procedures of all its departments was compiled. All operators, 2 months before they begin their post, must recite the entire booklet. If citizens make phone calls and raise questions such as what materials they have to prepare to acquire a new ID, the operator must be able to give the correct answer immediately.

If they receive calls complaining about municipal facilities or services, for instance, a citizen calls to report a ground surface collapse somewhere which might endanger the lives of the people, the operator should report the complaint to relevant administration and urge them to make repairs as soon as possible. “In this case, we must ensure the workers are sent there within 24 hours and we will report the repair results directly to the calling citizen”, said XIE Tingsong. If the repair work is not able to be completed within 24 hours, the relevant administration should provide a detailed time of completion, which will be relayed by the hot-line to the calling citizen while making an on-site review.

XIE Tingsong also recognized that they faced many difficulties during the initial stage of operation. “Some administrations made promises but refused to act promptly, which meant we would lose the people’s trust. So we had to resort to contacting the senior officials in charge of these

administrations. Even if it was about an electric wire or a manhole cover, we could report it directly to the official. Gradually, we have established a strong and powerful mechanism for monitoring these administrations.”



Humanistic Concepts for Innovative Urban Development

——Inspirations from the "Medellin Digital" Initiative

In 2007, in order to improve its education level and keep pace with the times and the trend of urban development, Medellin began to build itself into a digital city through integrated ICT applications. By introducing the computers and making effective use of the Internet, a steady stream of knowledge has been made available to communities, which has improved people's living standards, enhanced social cohesion and created a good beginning for the technological modernization of



A panoramic view of Medellin

Medellin. In 2012, this project was nominated for the first Guangzhou International Award for Urban Innovation (or the Guangzhou Award) on a short-list of just 15 initiatives. The project embodies inspirational people-centric ideas and humanistic concepts.

I. Overview

Medellin Digital is a large-scale integrated digital project designed to provide the public with convenient urban public services in a variety of areas. Proposed by the Municipality of Medellin and implemented upon the approval of Medellin City Council, the project is both funded and technically supported by local public telecommunications companies. Medellin Digital is divided into two phases: from 2007 to 2012, the project focused on education, culture, entrepreneurship and governance; from 2013, the project began to extend to sustainable urban development, healthcare and urban innovation. It will gradually go deeper into all levels of urban public services and development up to its completion in 2020.

The project has involved 921 public schools, 8 local business development centres, 5 libraries, 45 government places, 21 public places and 48 community service centres in Medellin, and has provided free Internet services, electronic navigation facilities and both educational and entertainment equipment for more than 1.5 million people. Medellin's Internet user rate increased from about 55 percent in 2011 to as much as 71 percent in 2013.

2. Background Information

2.1 The fundamental need to improve the city's image and meet international standards
In the 1980s and 1990s, Medellin was a lair of international drug-



trafficking gangs and was known to the world as a "city of violence" in which the drug trade was rampant and the crime rate high. With the destruction of the Medellin cartels and other vicious criminal gangs, the city has significantly improved its social security and gradually lost its notoriety as a "drug capital". After nearly 20 years of reform and development, Medellin has fully embraced the power of knowledge and advanced science and technology. It hopes to promote the interconnection of knowledge and information through the application of computers and the Internet. Medellin encourages the public to improve themselves through their own efforts to raise living standards, thus laying a solid foundation for Medellin's development into Colombia's number-one city for education, improving the city's image by improving publicity and achieving its ultimate goal of meeting international standards.

2.2 The dual challenges posed by the city's geographical position and prominent social problems

Medellin is located in the Abra Valley at the western foot of the Cordillera Central, and it extends in a network pattern up the hillside from the centre of the valley. Given the mountainous topography, the latitude difference is significant and the density of urban buildings high. Such a geographical position has challenged urban planning and development, and the steep, narrow intertwining streets along with the abrupt division between the city and its suburbs have seriously impeded traditional information exchange and interconnection. In addition, the drug cartel era has left Medellin with historical issues such as racial discrimination, serious social differentiation and an extreme disparity between the rich and the poor that remain to be solved. With urban development and the improvement of social order, increased migration to Medellin caused by violent crime and the drug

trade elsewhere in Colombia, and migrants attracted to Medellin in search of employment opportunities have posed severe challenges in terms of population and employment. The application of electronic communication technology and social networks have enhanced the quality of urban public services and made communication and the exchange of information more convenient, bringing about an improvement in interpersonal relationships and the enhancement of social inclusiveness and cohesion.

2.3 A realistic plan to modernize and upgrade the social structure

Medellin has a long history, with manufacturing and agriculture as its main economic pillars. It has been the centre of Colombia's leather and textile industries since 1930, accounting for more than 80 percent of the country's textile production and almost 100 percent of its iron and steel smelting and sugar production. Furthermore, the city's peri-urban agriculture is highly developed, making it an important coffee producer and the largest coffee market in the country. Influenced by the tide of globalization and urbanization, Medellin is facing the same pressure to modernize and upgrade its social structure as many other cities in the world. As to its traditional manufacturing and agricultural advantages, the expansion of tourism, trade and other tertiary industries will be critical if Medellin is to enhance its urban competitiveness and promote its sustainable development. Information and communication technology has obvious advantages in the integration of social resources and the optimisation of resource allocation.

3. Main Practices

3.1 Convenient people-oriented community services

Medellin Digital starts at the grass-roots level to provide all citizens

with convenient urban public services. The Internet is available throughout the whole city via 48 community service centres, more than 71 community service centres now provide convenient one-stop community services, and four information service stations have been set up specifically for the elderly. Public community service centres are equipped with client terminals and computers placed at different heights to be used by the community's adults and children free of charge. Full-time employees of Medellin Digital are stationed at each centre to register the usage of electronic devices, collect feedback from users and assist people in the use of computers and other equipment according to their needs. Today, citizens can visit their nearest community service centre to pay tax, apply for identity cards and handle other daily affairs on the terminals or computers, whereas in the past they were required to queue in front of counters. Job vacancy information, real-time online communication, online education, entertainment and many more services are also available. In addition, the elderly information service stations provide aged citizens with IT training courses at a variety of levels.

3.2 Open computer classrooms

The innovative spirit of Medellin Digital is fully realised in its Open Classrooms project. Through collaboration with local schools, Medellin Digital is helping students to form ICT groups that hold regular, teacher-guided classes in the use of modern information technology, such as computer programming and video recording and editing. After classes, the computers and other equipment are made available to local residents free of charge. Open classrooms are organised on a regular basis, and students are encouraged to teach their newly acquired computer skills to other members of the community; an idea we call "little hands holding



Opening Classrooms

big hands". The venues and content of Open Classrooms classes are arranged and managed by each school according to its actual situation, and the technical equipment operators of Medellin Digital are responsible for maintaining and repairing the equipment. At present, a total of 921 schools in Medellin are offering Open Classrooms, benefiting more than 2,000 citizens from slums in the northern suburbs.

3.3 The co-operative sustainable development model

The municipal government acts as the decision-maker and collaborates with local public telecommunications operators in raising funds for Medellin Digital operations. The government has formed an alliance with city companies to fully exert administrative and market-operational advantages. They work together and complement each other in



supporting the project on the level of policy and technical equipment. To ensure such implementation achieves the desired results, Medellin City Council has set up a strategic development committee of government experts to comprehensively assess the project and review its development plan. In the past seven years since the inception of Medellin Digital, the goals of its first phase have been basically achieved. Starting this year, the project will gradually shift from 'coming in' to 'going out'. That is to say, besides the construction of urban infrastructure and public facilities and the passive provision of ICT and Internet services, the project will take the initiative to engage with citizens directly in order to understand and meet their needs. This is especially important in the case of vulnerable groups such as the elderly, the disabled and refugees that migrated to Medellin because of violent crime or the forced dispossession of land. In the next two years, the project plans to create three Internet stations with 200 public computers in order that information and communication technology can help promote interpersonal communication and social integration. In addition, the project will seek to involve more relevant governmental departments to expand the coverage of its services, and to involve non-governmental institutions in a consulting capacity to explore new development strategies. Medellin Digital aims to build an open and transparent government that will promote sustainable social development and public participation. Meanwhile, with the strong support of advanced information and communication technology and equipment, it hopes to build Medellin into an information centre of Latin America that will eventually develop into a 'smart city'.

4. Difficulties and Solutions

4.1 Temporary difficulties in the turnover of project funds

In 2013, when Medellin Digital was in transition from the first to the second phase, it suffered temporary financial difficulties. Since the beginning of the project, the annual development plans have included the budget. In the first half of 2013, project funds were abundant and new services were developed and explored as planned; in July, the project entered a new operation funds cycle and there was financial austerity. In order to achieve a smooth transition from one phase to the other, the project operation team took the emergency measure of 'dividing operation funds between the first and second half of the year' to relieve temporary turnover difficulties in the latter half if new funds fail to fall into place in a timely manner.

4.2 Challenges of technological innovation and the updating of equipment

While Medellin Digital aims to improve living standards and quality of life through information and communication technology, high quality urban public services depend on hardware as well as software. Rapid technological development and limited operation funds have posed dual challenges for the project, as its equipment needs to be updated and its coverage needs to be broadened. Medellin Digital mainly uses Microsoft software, the updating of which involves copyright fees that put pressure on project operations. However, the project has been running for seven years and some of its equipment has become out-dated or damaged. As it enters its second phase, more equipment and better technical support will be needed to expand the coverage of its services. The project operation team is trying to reduce the amount of scrapped equipment by improving and increasing routine maintenance, and hopes to gradually

introduce free open software to reduce financial pressure. In the future, software may be developed specially for the project.

5. Revelations

5.1 Urban public services should be people-centric

Medellin Digital excels not only in digital science and technology but also in ensuring that the digitalizing process is centred around improving living standards and creating happy lives for the people, and the key lies in innovative concepts. With Medellin Digital as a starting point, Medellin Municipal Government has turned information and communication technology into a catalyst for sustainable urban development. Now the city is no longer spatially compartmentalized but truly coherent and

connected. Beginning with education, culture, employment and other key areas of public concern, the project has met the spiritual needs of the people in a very real sense and made their daily lives more convenient.

When providing public services, other cities should also give priority to the actual needs of their citizens before planning and implementation, in order that public service expenses can be well utilised to solve practical problems.

5.2 Urban public services should emphasize social inclusiveness

From people-oriented facilities and the services of community centres, to the innovative concept of "little hands holding big hands", Medellin Digital always considers the needs of socially vulnerable groups, providing targeted digital training and services to the elderly, the disabled



Information Window of the Community Service Center



Humanized Equipment in the Community Service Center



Citizens in the one-stop Community Service Center to handle ID card business

and students from mountainous areas and low income populations, and striving to create further opportunities for the public to communicate and share information in different ways and through various channels. Open classrooms have truly achieved an intensive use of social resources, and now schools, the centres of education, are not just for children and youths but have been opened up to all community members who wish to study and learn new skills. Open classrooms are welcomed and supported by both students and local residents. They have reduced pressure on the construction of urban public facilities and promoted social integration, civic participation and the building of harmonious communities. When carrying out public services, other cities should also focus on inclusiveness and humane care, and take into account the special circumstances of vulnerable minority groups in the planning and

implementation of their projects to ensure the maximum coverage of services.

5.3 Social operations should be introduced in urban public services.

Medellin Digital emphasizes the introduction of social forces to support its projects. Under government leadership, local public telecommunications operators raise the operation funds, equipment operators give technical support and the government provides preferable policies, in order that the needs of both government and enterprise are united, and the pressures on the local government to secure funds and resources are greatly reduced. Urban public service projects usually involve huge expenses. If funds and resources are entirely provided by the government, it will increase long-term financial pressure on the government and have a detrimental effect on the sustainable operations of service projects. When conducting public services, the governments of other cities should also locate the meeting points of external social forces and related services, take full account of the needs and interests of different parties and secure the participation and support of social resources to ensure the healthy, long-term development of the project.

5.4 Urban development planning should be proactive

Although many aspects of its urban construction are being improved, Medellin remains a developing city, but the work of Medellin Digital places it ahead of many developed cities in terms of becoming a "smart city". This reflects Medellin's efforts to gear itself to international standards based on its own characteristics and to closely follow the world development trend.

In the process of construction planning, cities should not only meet short-term development needs but also view themselves in a global context in



order to develop systematic planning for ten years, twenty years or even further ahead. This applies without exception to all large, thriving cities such as New York and London. Only with a long-term, macroscopic view can we reduce setbacks, minimize development costs and achieve leapfrog urban development.

Journalist Observation

Humanity Development and Creative City

The survey of Medellin coincided with the World Urban Forum 7 held by the United Nations Human Settlements Programme. During the survey, we found the entire city to be filled with both humanity and culture. The citizens' passion for life was evident everywhere and innovation has become an integrated aspect of Medellin's existence. Upon learning that the survey team would be carrying out field research on the 'Medellin Digital' initiative, one guest burst with pride, "In addition to the digital program, Medellin also has many other impressive urban ones" recommending that we have a look at Medellin's urban development and other outstanding programs.

On our way to Aures Public School, Ms. Ana Isabel Palacios, Director of the 'Medellin Digital' initiative, told us, "Thanks to the successful implementation of our program, we have received domestic and foreign delegations almost every month. Owing to the Guangzhou International Award for Urban Innovation, which is an international platform, our program has gained more popularity." The program leader of the Aures Group, a student run corporation, was a 16- or 17-year-old teenager. He said frankly that 'Medellin Digital' has changed his life. He also hopes that he can major in a digital-related discipline at university in the future so as to continue the promotion and development of the program.

Imperceptibly, 'Medellin Digital' had formed a kind of inheritance of faith in the beneficiary group. The humanistic concepts which course through the whole range of Medellin's current urban developments will definitely continue to merge with the devotion necessary to continuously integrate Medellin's urban innovation.

“Sustainable Energy Now”

——Inspirations from the Italian Salerno Initiative

In order to promote urban sustainable development and constantly improve the quality of urban life, Italy's Salerno City began to implement “Sustainable Energy Now” in 2009. The project has effectively reduced various aspects of its energy consumption, improved energy use efficiency and optimizing energy structures. In 2012, this project stood out from the 255 initiatives for Guangzhou International Award for Urban Innovation and was included in the candidate cities for the first Guangzhou Award. Salerno became one of the ten candidate cities and won wonderful comments and praise from the jury.

1. History and Status Quo of the City

Salerno City is situated in the southwest of Campania, Italy, and is the provincial capital of Salerno Province. Salerno covers an area of 58.96 square kilometers, with a population of about 150,000 and a population density of about 2,200 people/km², making it one of the most densely populated regions in Europe.

Campania, where Salerno City is located, is densely populated, enjoying a significant geographical position. Campania is located in the southwest of Italy along the Mediterranean coast neighboring Salerno, Avellino, Benevento, Caserta and other provinces. Campania covers an area of 13,600 square kilometers with a population of nearly 6 million,



Salerno Port

marking it one of Italy's most densely populated areas. Campania enjoys superior geographical positioning and is a transport hub connecting Europe, Africa and the Middle East. The capital of Campania is located in Naples. The Naples metropolitan area, with a population of about 3.8 million, is the third largest metropolitan area in Italy and the 15th largest metropolitan area in Europe. Naples is the largest city in Campania and Salerno is the second largest city in Campania, the two cities mere 48 kilometers apart.

Salerno has a long history and is an important cultural center and famous tourist city in Italy. The world's first medical school - Salernitana Medical College, is located in Salerno, and Salerno is also the most important town on the Amalfi Coast. The whole city is basically divided into three parts: the medieval old area, the planning area of the 19th century and the most populated new district built after war. Salerno

tourism is well developed. In the south of Salerno lies the world cultural heritage Cilento and Vallo di Diano National Park. In the north of Salerno is the Amalfi Coast, to the northwest of Salerno, close to Naples, are the Pompeii ruins and the magnificent Mount Vesuvius. It takes only one hour by boat from the Port of Salerno to reach the resort Capri Island.

Salerno enjoys superior geographical positioning and well developed traffic. Salerno railway station is located on the Italian railway trunk. The railways lead directly to the major cities of Italy and high-speed rail networks can be accessed through the Milan-Salerno corridor. Salerno port is Italy's main port and is also one of the most active ports along the Tyrrhenian sea coast. The port's cargo throughput averages 10 million tons each year, of which 60% belongs to container transport. A3 and A30 expressways in Italy both pass through Salerno City and the highway traffic is quite developed. Salerno Airport is located in Pontecagnano Faiano and the nearby Bellizzi Town, so the air travel is very convenient.

Salerno is faced with threats and challenges in aspects of economy and society. Salerno has obtained remarkable achievements in contemporary architecture, travel, music and art as well as in other fields. But in recent years, Salerno has been faced with some serious threats and challenges in many aspects. For example, global issues such as fossil fuel depletion, fuel price increase, droughts, floods, storms and other natural disasters caused by the greenhouse effect, all pose a serious threat to Salerno. As the most densely populated area in Italy, Campania, where Salerno is located, has a sluggish economy. The unemployment rate among young people remains high, the local government is heavily in debt, the environmental problems are becoming more and more serious and all these issues bring great pressure to Salerno. Atmospheric pollution from neighboring Naples, garbage crisis, wastewater discharge and other issues also seriously threaten Salerno's ecological environment.

2. Origin

In Salerno, energy is very scarce, with its oil, gas and other energies depending heavily on import. Air pollution in the area is very serious. As the environmental problems become increasingly outstanding, these factors have forced Salerno to constantly reduce its energy consumption, optimize its energy structures, and take the path of sustainable energy development. These factors are an important reason for promoting the "Sustainable Energy Now" in Salerno City.

2.1 Environmental problems are increasingly serious, especially air pollution

According to the 2010 Version of Report on Deterioration of Urban Air Quality released in 2009 by an Italian environmental protection organization called Environment Federation, many Italian cities have poor air quality. The concentration of inhalable particles contained in the



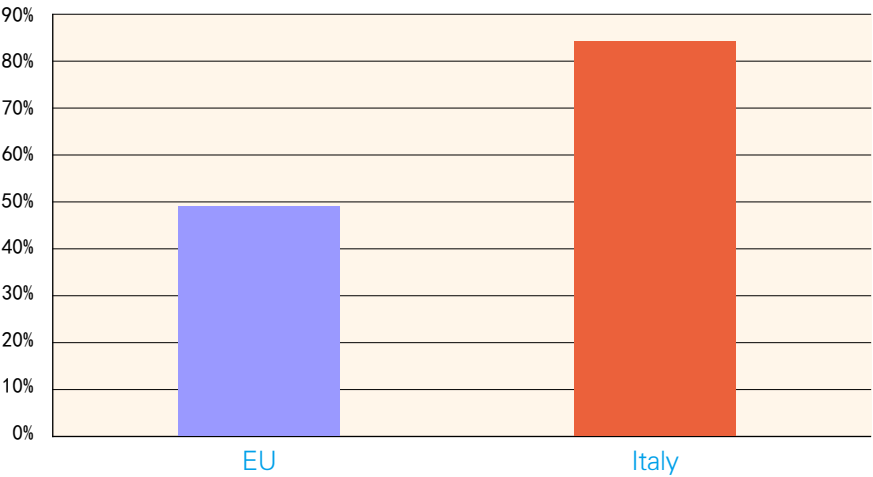
| Garbage Composting Plant in Salerno

air seriously exceeded acceptable standards. In 50 cities monitored by the Environment Federation, Naples suffers the most serious air pollution and in 2009 inhalable particle concentration exceeded standards for a total of 156 days.

In recent years, the garbage crisis has occurred repeatedly in Naples with the whole city being surrounded by tens of thousands of tons of household garbage. This led to multiple civilian protests and conflicts between the police and residents. Over ten years, the garbage problem has long perplexed Naples and has long existed in Campania where Naples resides.

With Salerno and Naples being located only 48 kilometers apart, atmospheric pollution and garbage crisis in Naples has brought with it huge threats and challenges to the ecological environment of Salerno.

2.2 Fossil energy is seriously in short supply, with high foreign-trade dependence
Italy is seriously in short of energy sources with little domestic coal reserves and production. Its oil and gas resources are seriously



Energy foreign-trade dependence contrast between European Union and Italy

List of proportion of Italian imported energy in 2009

Name of Energy	Percentage of Total Import (%)
Solid energy	94%
Natural gas	88.6%
Petroleum products	93.1%
Total energy amount	82.4%

insufficient and energy mainly relies upon import. According to EU statistics, Italy's energy foreign-trade dependence far exceeds EU's average levels. For example, in 2009, Italy's energy depended heavily on import and various kinds of imported energy sources occupy very high proportion.

Salerno's energy situation is basically consistent with the reality of Italian energy. Fossil energy is in very short supply making the energy foreign-trade dependence very high. Oil is especially heavily dependent on import. The fluctuation of international oil prices exerts a huge impact on the economy and society of Salerno, and their energy problem has been one of the core issues affecting Salerno's economic and social development.

2.3 Due to hindrance in the development of nuclear power, development of renewable energy becomes an inevitable choice

Italy was one of the first countries to establish nuclear power plants. It has long ranked among the top countries of the world in terms of nuclear energy development and utilization. But, affected by the Chernobyl power plant accident in the former Soviet Union and Fukushima nuclear accident in Japan, most Italians are averse to using nuclear power. They think that because Italy is frequently hit by earthquakes, the nuclear power is simply not safe. Public voting twice forced the Italian government to fully give up on nuclear power. For Italy,



Events related to hindrance of nuclear power development in Italy

Year	Related Events
1987	Affected by the accident at the Chernobyl power plant in the Soviet Union in 1986, 80% of Italian people proposed in 1987, through referendum, to close down nuclear power plants. The Italian government compulsorily closed down all nuclear power plants, meanwhile not allowing the construction of new nuclear power plant projects.
2008	After general election was made in 2008, new round of government intended to develop policy on reutilization of nuclear energy and planned to construct about ten nuclear power plants in the territory of Italy.
2011	In March, 2011, after Japan's Fukushima nuclear accident, the pressure from domestic politics and the public forced the Italian government to rethink their nuclear power development plans. In June 2011, the Italian government's nuclear energy plan was rejected in a referendum, and this referendum forced Italy to completely give up nuclear power.

there is hindrance in the development of nuclear power, making the development of renewable energy an inevitable choice. For Salerno, naturally, nuclear power cannot be developed and so the development of renewable energy will become the inevitable choice.

2.4 With rich natural resources, renewable energy technology grows increasingly mature

In Italy, fossil resources are very short, but, solar energy, wind energy, hydroenergy, geothermal energy, ocean energy and other natural resources are very abundant, giving the development and utilization of renewable energy great potential. Italy is located in sunny Apennines and Mediterranean region in southern Europe. It enjoys a reputation as the Kingdom of the Sun because its solar energy resource is so abundant. When compared with other European countries, the cost of solar energy photovoltaic power generation is relatively low. Italy is also very rich in geothermal resources and has the most geothermal resource per capita in the world.

The Italian government now attaches great importance to renewable

energy source technology research and development. Under the push of the government, the Italian renewable energy technologies emerge endlessly and with rapid progress. Great development has been achieved in terms of solar energy, hydroenergy, biomass energy, wind energy, geothermal energy and other fields, and the technologies are maturing gradually.

The natural energy situation of Salerno is consistent with the overall situation of Italy. Natural energy sources such as solar energy, wind energy, are plentiful, and renewable energy sources have huge development and utilization potential as the technologies become more and more mature.

2.5 With the central government giveslarge support, policy advantages are very obvious

In recent years the Italian government has attached great importance to the development and utilization of renewable energy and has formulated a series of supporting policies:

2.5.1 Implementing correct guidance. Since 1996, the European Union has developed and improved renewable energy development goals. The Italian government is strictly in accordance with the aim set by the European Union and actively promotes its implementation.

2.5.2 Establishing and improving incentive measures. In order to ensure

Renewable Energy Development Goals in European Union

Year	Proportion of renewable energy in primary energy consumption (%)	Proportion of renewable energy power generation in gross power generation (%)
1996	6%	14%
2010	12%	22%
2020	20%	30%



the smooth realization of renewable energy development goals, the Italian government intensifies policy support, for example, adopting preferential fixed electricity prices for renewable energy generation, implementing a renewable energy compulsory market quota policy, implementing investment subsidies and tax preferences for renewable energy, etc.

2.5.3 Strengthening financial fund support. In order to speed up the development of renewable energy, Italy has provided a strong financial support to renewable energy development, mainly offering subsidies to technical research and development, project construction, product sales and end users. For example, 2005 Energy Act clearly stipulated an annual financial budget fund for technology R&D of renewable energy and its industrialization development. The users who install solar water heaters are provided with 40% of subsidy. Italy has also offered product subsidies and user subsidies to expand the renewable energy market and lead social capital toward renewable energy. This effectively promotes the scale development of renewable energy.

The Italian government attaches great importance to renewable energy development and has introduced corresponding support policies and measures which offer a good external environment and important policy support to the development of the Salerno "Sustainable Energy Now" project.

3. Concept and Implementation

3.1 Concept and goals

The concept of Salerno's "Sustainable Energy Now" are: to form a team; devise a plan for urban energy; through a series of measures, reduce energy consumption; improve energy use efficiency; optimize energy structures; continuously improve the quality of urban life; and realize the

sustainable development of cities.

The project has three main goals:

3.1.1 Analyze the current situation of energy discharge and greenhouse gases while seeking suggestions and solutions aimed at the reduction of consumption and pollutant, all while regularly updating status analysis.

3.1.2 Work out an urban plan which aims to reduce carbon dioxide emissions, reduce energy loss and encourage the development of renewable energy, in order to achieve or exceed CO₂ emission reduction plan developed by the EU.

3.1.3 Start an energy audit, establish advanced and improved energy monitoring systems, determine a specific plan of action and establish new legal regulations, incentive mechanisms and a regulating framework.

3.2 Implementation measures and methods

3.2.1 Establish a project team.

In order to promote "Sustainable Energy Now", Salerno has established an expert team consisting of various institutions including Salerno municipal energy office, many researchers and colleges at the University of Salerno, University of Naples' "Federico II" and private enterprises, etc.. There are a large number of stakeholders who participate in the sustainable energy project.

3.2.2 Develop an urban energy plan. The project team has jointly developed an urban energy plan, its main contents can be summarized as:

3.2.2.1 Street lighting and electrical equipment: use high-efficiency and energy-saving lamps, give material rewards to the homes using home appliances which save energy and are environment friendly.

3.2.2.2 Building energy conservation: by improving designs, reduce energy loss caused by doors and windows as well as poor heat

insulation devices.

3.2.2.3 Improve indoor space heating, ventilation and air conditioning with design improvements in order to reduce energy consumption.

3.2.2.4 Save water: make better use of ditches to recycle and make good use of rainwater.

3.2.2.5 Vigorously develop solar energy, biomass energy, hydro-energy, wind energy and other renewable energy sources.

3.2.2.6 Sustainable mobility: use energy-saving intelligent traffic lights; give material rewards for using bicycles, reduce use of private cars and encourage transferring to public transportation, carpooling, etc.

3.2.2.7 Improve waste recycling rates.

3.2.2.8 Help owners to build photovoltaic pavilions on their roofs; help the owners to purchase and install windows and house framework which is more energy-saving and environment friendly.

3.2.3 Implement a series of specific measures.

In order to turn the urban energy plan into reality, Salerno has implemented a series of concrete measures.

3.2.4 Cooperate with universities to conduct theoretical research and innovation experiments.

University of Salerno, as an important participant in the project, has provided important intellectual support for the project. University of Salerno has conducted the following theoretical research and innovation experiments:

3.2.4.1 Use the toolbox developed by University of Salerno (whose patent is applied), refit traditional cars into mixed solar vehicles. The fleet in Salerno City will use such tools to enact these refittings.

3.2.4.2 Develop and test solar thermal power plants with seasonal storage function and provide central heating for schools.

3.2.4.3 In light of existing constraints, use a method based on

The Salerno "Sustainable Energy Now" Project Measures and Progress

Measures	Construction Quality	Unit	Costs (Euro)	CO ₂ Emission Reduction Ratio	Progress
Seasonal heat-storable solar energy	2,000	Square meters	180	0.11%	Approved
Photovoltaic power generation in municipal buildings	80	kWp	9.6	0.01%	Approved
Photovoltaic power generation in schools and office buildings	5000	kWp	600	0.51%	Approved
Public lighting optimization	22,500	set	240	0.19%	Approved
Cogeneration in swimming pool	145	kWe	21.8	0.03%	Approved
LED traffic lights	800	set	14.2	0.01%	Approved
Wind energy turbine power generation on streets	400	set	400	0.03%	Approved
Energy recovery of water supply equipment	2,200	Megawatt hour/year	49	0.18%	Approved
Electric car photovoltaic charging stations	50	Vehicle	236.4	0.12%	Approved
Photovoltaic charging for electric bus	30	Vehicle	2165.8	0.99%	Approved
Public building energy optimization	9,734	Megawatt hour/year	869.3	0.46%	Approved
Monti di Eboli photovoltaic power plant	24,000	kWp	0	2.44%	Finished



mathematical programming to evaluate the priorities of proposed actions.

4. Performance Evaluation and Existing Problems of the Projects

4.1 Achievements

4.1.1 The efficiency of energy utilization has been effectively improved. Since its beginning in 2009, along with the advancement of the “Sustainable Energy Now” project, Salerno has effectively improved the efficiency of energy utilization in various aspects. For example, innovation has been made in terms of street light management systems, urban construction, water conservation and water drainage systems. Intelligent traffic lights are used to solve congestion problems, encouragement of carpooling, bike-riding and public transportation are encouraged, etc. These actions have effectively reduced energy consumption and improved the efficiency of energy use.

4.1.2 The recycling rate of waste has been increased. Current solid waste recovery rate in Salerno reaches 70%, which ranks Salerno first among peer cities in Italy.

4.1.3 A 24-MW photovoltaic power station has been built. The most representative project is Monti di Eboli 24-MW photovoltaic power station which is the third largest photovoltaic power station in Italy.

4.1.4 Purchasing schemes are optimized with all orders pooled together. The owners' order for energy-saving devices and photovoltaic panels are treated together, and economic and reasonable purchasing plans are made.

4.1.5 Energy conservation and environmental protection becomes a model for other cities. The Urban energy plan developed by Salerno obtained the urban planning innovation award granted by the Italian

government. In terms of energy conservation and environmental protection consciousness, Salerno has become a model for other Italian and European cities.

4.2 Existing problems

4.2.1 The economy in the area is sluggish, which brings pressure to project implementation. Salerno is located in Campania. In recent years, Campania's economy has been very depressed, youth unemployment rate ranks high in Italy and local governments face heavy debts, all of which has brought about great pressure on the implementation of this project.

4.2.2 The pollution in the surrounding environment is serious which increases the difficulty of project implementation. Salerno is only 48km away from Naples. Naples is the city with the most serious air pollution in Italy. Garbage crisis repeatedly occurred in this city and sewage discharge problems are also very serious. These issues are serious threats to Salerno's ecological environment, increasing the difficulty of the implementation of the project.

4.2.3 Salerno is faced with many challenges. In recent years, the increase of international oil prices has had obvious economic and social effects on Salerno. Natural disasters such as droughts, floods, storms caused by the greenhouse effect have also brought serious threats to Salerno, these bring a certain resistance to the implementation of the project.

5. Lessons and Revelations

The Salerno “Sustainable Energy Now” project started in 2009. By the time it applied for the Guangzhou Award in 2012, the overall design had put 20 specific projects into motion. Many projects have achieved



good economic and social benefits. Through the analysis of the Salerno innovation project, we think cities would do well to refer to the following aspects.

5.1 Prioritize energy saving and scientific use of energy and promote energy conservation and emission reduction in a comprehensive way

In Salerno, energy is in very short supply; most of its energy sources depend on imports. In order to reduce energy foreign-trade dependency, in the process of implementing “Sustainable Energy Now” project, Salerno has prioritized energy saving and scientific use of energy within the energy strategy.

Energy shortage also restricts the development of many cities in the world, while environmental pollution is caused in the process of energy use. In order to achieve continuous production increase and gradually reduce pollution, it is imperative to extensively change the mode of industrial growth, and stick to energy saving and scientific use of energy. Improvements of efficient energy utilization and reduction of energy consumption are key. Achieving greater economic growth with less energy input, to a large extent, depends on the mining of energy-saving potential. Therefore, we must constantly promote energy conservation and emission reduction in an all-round way and realize the sustainable development of energy.

5.2 Enhance the people’s awareness of resources preservation and vigorously create good social atmosphere of saving energy

During the process of implementing “Sustainable Energy Now” project, Salerno has attached great importance to promoting the concept of environmental protection among its citizens, emphasizing public participation. In light of the actual situation of energy shortage, it is

necessary to strengthen all citizens’ awareness of concern for limited resources while vigorously creating a good social atmosphere of saving energy. Urban relevant functional departments should use a variety of media forms to publicize the importance of energy saving. They should popularize knowledge of energy conservation, mobilize participation in circles of the society, advocate a culture of energy conservation, establish a long-term mechanism for energy saving throughout the entire society, and make efforts to form healthy, civilized and energy-saving patterns. It is imperative to incorporate energy saving into basic education, vocational education, higher education and technical training systems, making every enterprise, every family and every citizen consciously save oil and electricity from now on. “Energy conservation and environmental protection” must become the common value and self-conscious action of all citizens.

5.3 The government should attach great importance to the development of “sustainable energy now” project, and increase financial support

Government’s great support is the key to smooth implementation of the sustainable energy project of Salerno. For both developed countries and developing countries alike, the development of sustainable energy project is inseparable from the support of government. During planning for sustainable development, cities should take into full account energy efficient building patterns, industrial energy conservation, renewable energy, electric power, transportation, environmental management, sustainable city, low carbon development and other considerations to promote the development of “Sustainable Energy Now” project.

Local government can set up a special fund for the “Sustainable Energy Now” project and can also support the development of sustainable energy projects through tax preferences, government purchase, financial



subsidies, low-interest loans, accelerated depreciation, helping to expand the market by all possible means. In addition to displaying their own initiatives, governments should also encourage commercial banks and other financial institutions to become involved in the construction of sustainable energy projects and guide both private and international capital toward involvement in the project, thereby promoting the commercial development of the urban sustainable energy project.

5.4 Continuously optimize energy structures and vigorously develop renewable energy

Salerno is short of fossil energy, but it is rich in natural resources. Salerno fully realizes its own weaknesses and actively develops its advantages. Under the premise of ensuring the safety of their energy supply, Salerno is vigorously developing and utilizing wind energy, hydroenergy, geothermal energy and other renewable energy sources, especially solar energy.

Cities in various regions can make full use of their local unique advantages and conditions. They need integrate the successful development experience of energy-saving technologies and establish complete energy - industry systems which integrate R&D, design, production, trade, use, and conform to the actual situation of their local regions.

5.5 Build innovation systems combining enterprises (as the main body), government (as the leader), research institutes, financial support, and intermediary services

In order to promote the “Sustainable Energy Now” project, Salerno has established a highly efficient professional team and integrates the forces of government, universities, research institutions, enterprises, social

organizations and so on. Effectively integrating social resources while widely listening to the opinions and suggestions of various stakeholders, a joint system has been established combining “enterprises (as the main body), government(as the leader), research institutes, financial support, and intermediary services”. This is worthy of our attention.

Cities should make full use of local talents, technologies, capital and other advantages when actively building the joint system. Deepening the industry-university-research cooperation changes the situation of relatively low level industry-university-research cooperation. Focus can be laid on vigorously developing the “Sustainable Energy Now” project, cultivating a new energy industry and developing a low carbon economy in order to achieve economic and socially sustainable development.

Combining Environmental Protection with Diversified Education

——Inspirations from the Initiative of Sakhnin, Israel

Towns Association for Environmental Quality (TAEQ) is a municipal collaborative organization that was formed in 1993 and was the first Arab-Israeli environmental organization in Israel. It is located in an Arab sector of Israel. Governed by six Arab municipalities in Israel's Galilee region, TAEQ provides services for over 80,000 people over an area of 1,500 acres. It focuses on raising environmental awareness, the development of the green economy, and the protection and preservation of traditional



A Bird's Eye View of Sakhnin



Landscape of the TAEQ Center

culture. It promotes ideas and practices for sustainable development and environmental protection through research and development of energy-saving and emission - reducing technologies, architecture based on local knowledge and modern technology, and a diversified cross-culture publicity and education system. After almost 20 years, its initiative has proved to be surprisingly innovative and has had a huge impact on the development of the surrounding ecology and social undertakings. In 2012, the initiative was chosen from a list of 255 from around the globe, winning it one of the candidate cities for the Guangzhou International Award for Urban Innovation (the Guangzhou Award) .

1. Background Information

1.1 Addressing the environmental issues facing the arab sector of israel

Israel is a developed country, but Sakhnin in the Arab sector is still

in the developing stage. Due to the area's fast social and economic development, a number of high pollution, high energy-consuming industries such as oil processing, papermaking, fine chemical engineering, and mining, developed at a rapid speed. These did have a positive effect on the area's economic strength and industrialization, but it's impossible to ignore the destructive effects they had on the natural and living environments. Because of this, it became even more important to tackle the ecological and environmental issues facing the area.

1.2 Strengthening the locals' environmental awareness

The area is mainly made up of Jewish and Arab Israelis as well as several other minorities. The Jewish Israelis generally have a higher level of education and thus a stronger environmental awareness. The Arabs and other minorities on the other hand have a relatively low level of education due to their low incomes and poor living conditions. Only a few have attended higher education, with most only receiving primary school education. This results in a poor understanding of the importance of the environment. This called for a systematic and complete environmental education program to improve their awareness and ability to achieve sustainable development.

1.3 Conserving energy and increasing energy efficiency in the galilee region

With the ever-increasing population of Galilee, in particular of the region's Arab population, urban and residential sprawl was not showing signs of slowing down, and the area's economy was seeing steady growth from the continued development of the area's industry. But this type of development faced the problem of a reduction in available land, ever-scarce fresh water resources, the increasing difficulty of extracting mineral resources, and the need to import a large portion of the energy

being used. Therefore there was a crying need to increase energy efficiency and urban energy conservation in the region.

1.4 Improving collaboration between the multicultural groups within Israel, specifically Jewish and Arab Israelis

Wars and conflicts between the Jews and Arabs in the area have led to segregation between the two groups for a long time. There is a large difference in their religious beliefs, customs, living styles, values and identity, work modes and ethics, and development needs etc., and a severe lack of communication between them. Faced with the problems brought about by urbanization and modernization, in particular environmental issues, the two groups need to set aside their differences, learn to respect one another, strengthen their identities, and work together to improve environmental management and improve awareness.

2. Concept and Implementation

2.1 Concept and goals

The aims of the initiative are to influence the policy and practice of energy conservation in the region's public sector by demonstrating a real-life case study of a green building. It focuses on strengthening environmental and social participation awareness. Its main objectives cover: environmental protection, sustainable economic growth, organic farming, independent education, research and development, harmony between man and nature, the formation of environmental laws, environmental protection education and training, and the education and guidance of various social groups. Its long term goal is to achieve peace between different groups of people and between man and nature.

2.2 Implementation

2.2.1 Participants and Necessary Resources

Leaders: Mayors of Sakhnin, ie. Dier Hanna, Arrabe, Kaukab, Eilaboun, and Bouwene Nugedat.

These leaders are responsible for determining the project's goal orientation, overall plan, and the provision and allocation of necessary resources.

Executors: Municipal staff of Sakhnin, including urban planners, city engineers (public) etc.

The executors of the initiative are responsible for the green building planning and construction, making use of the green building's functions, and the operation of supporting facilities.

Technical personnel: Architects (private).

The technical staff provide the technical support and supervision for the construction of the green building.

Financial support: Beracha Foundation (NGO) and the European Union's MED ENEC program as well as the Israeli Ministries of Education and Environmental Protection provide the financial support. In addition, the Center's educational and research activities housed within the green building are also funded domestically and internationally through grants. The majority of the financial support goes towards the green building's operation, environmental protection training, environmental protection project development, and the application of water treatment technology.

Service staff: Volunteers and interns.

The service staff are responsible for solving any issue that arises during operation and provide the essential manpower needed for the initiative.

2.2.2 Implementation

The initiative includes four main areas of operation: the design and construction of the green building, increasing environmental awareness



Waste Water Collecting Tank

through education, planning and developing social activities, and utilizing water treatment and recycling technology. The construction of the green building forms the core of the project while the other three serve as supporting functions for the building.

2.2.2.1 The design and construction of the green building. The green building is at the center of the initiative. It was designed by a team of famous local architects based on the principles of combining local Arabic architectural styles (strong angles and archways) with Jewish styles (courtyards) to give it a comprehensive hybrid feel easily acceptable by the diverse local community, whilst also utilizing modern environmentally friendly technology (wind and solar power devices) to ensure to make best use of the building. During construction, the project utilized local labor resources, especially local Arabs, which not only helped with the unemployment problem, but also ensure the project was

completed on schedule.

2.2.2.2 Increasing environmental awareness through education. This is mainly aimed at providing various environmental protection facilities and teaching to various groups such as teachers, children, experts and scholars, farmers, the elderly, local government workers, and tourists etc. This side of the project includes: creating suitable environmental protection teaching environments for children, getting higher education students to take part in environmental protection pilot projects, hosting summer camps with the purpose of training new environmental protection leaders, holding various types of conferences and forums, and providing environmental protection training for teachers to use in the classroom etc. TAEQ organized a group of experts to visit and provide consultation services for 70,000 citizens, teaching them about how to protect the environment and better safeguard their lives.

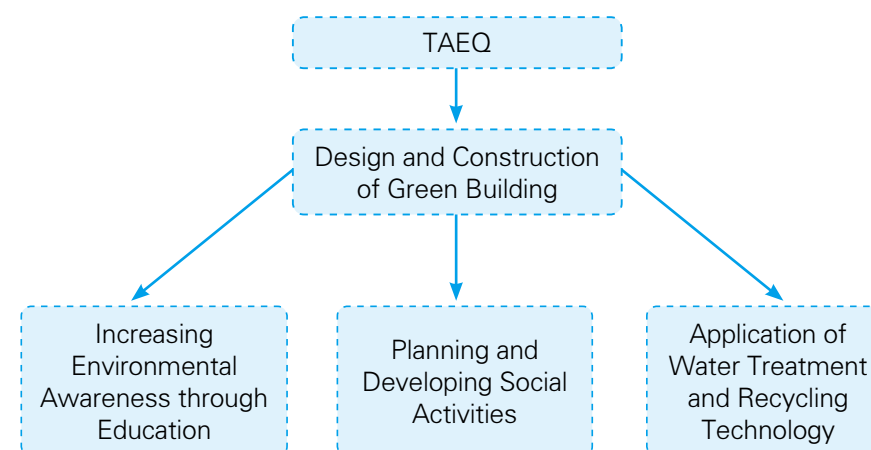
2.2.2.3 Planning and developing social activities. This area is focused on creating constructive dialogue between Israeli Jews and Arabs to promote the sharing of sustainable development ideas and the responsibility for environmental protection. The core idea behind it is developing what they call “environmental peace”. In an EU-sponsored program called “Partnership for Peace”, TAEQ brought together Arabs and Jews to work on environmental problems. In 2007, TAEQ provided consultation regarding water treatment to Egypt and Palestine, and utilized the bilateral negotiations to promote the “environmental peace” ideology.

2.2.2.4 Application of water treatment and recycling technology. This mainly focuses on utilizing experts’ knowledge in environmental protection; in particular for the use of low cost, easy to operate technology to improve the rational development and utilization of earth and water resources. It’s common knowledge that water is a major

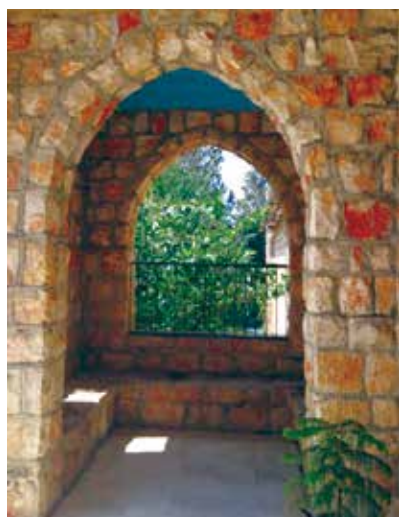
concern in Israel. The water source that supplies 30% of the country’s supply is threatened by uncontrolled dumping of both solid waste and untreated wastewater. With support from the MERC foundation and the EU LIFE-Third Countries Project, TAEQ brought together experts from Jordan, Egypt, Palestine, Israel and the USA etc. to research and develop water treatment technology, and then put this new technology to use in the region. It has been utilized in areas such as irrigation, organic farming, and water recycling, and has brought financial benefits to the local population.

2.2.3 Innovation

2.2.3.1 Technological innovation. “Green building” is relatively new to Israel, and especially to its Arab sector. Although already having been renowned for water conservation for decades, Israel only released its green building rating system in 2010. This project on the other hand, began much earlier than those in other areas of country both in terms of proposal and final operation. The green building that houses the Center for Environmental Research and Education has a number of energy-



TAEQ Operation Diagram



Building's Archways



Wind Power Conversion Equipment



Solar Panel Units

saving and alternative energy technologies, such as solar photovoltaic panels and a wind turbine. The former takes advantage of the areas sunlight to provide power for the various activities held inside the building. The later utilizes mechanics to convert wind power and stores it to be used for cooling and heating. These technologies are new to the region and scarcely found in other parts of the country. The building was designed to be a “near-zero energy” structure.

2.2.3.2 Architectural Style. The building itself is constantly developing. Its architecture includes a large number of Arabic (ancient Byzantine) elements such as multi-angular windows, the archways, and the small apertures dotted around. These not only provide cool air and natural daylight, but also help promote the use of these currently missing local cultural elements in modern architecture. The project is an innovative mixture of modern energy-saving technology and traditional Arab architecture.

2.2.3.3 Innovative work methods. The success the project has had with green building has been promoted in other cities in the Arab sector. These cities have developed organizations such as steering committees to better implement green building practices in their areas. In addition, the project gives a small budget from the Environmental Protection Ministry to help schools, including middle and high schools as well as universities, green their buildings and improve their environmental education capabilities, by providing consultancy services, educational training, holding conferences and forums, and welcoming tour groups etc.

2.2.3.4 Innovation in water treatment and recycling. TAEQ took local conditions, in particular the scarcity of water and available land, to promote the use of the three - stage water treatment and recycling system it developed in areas such as irrigation, domestic water, and organic farming. The project has been huge success in this area, most notably in increasing the employment rate and incomes of Arab Israelis in the area through the use of this new technology.

3. Performance and Existing Problems

3.1 Existing problems

3.1.1 Lack of funding. While the project received funding from the Israeli government and relevant organizations, the annual 700,000 US dollars that was given was not enough to cover the increasing costs. Things such as the development of new technologies, holding conferences and forums, providing teaching and training to teachers and students, paying the salaries of the staff, and the promotion of the project's work required much more support. This is why private organizations, enterprises, and commercial organizations became a necessary channel for project

funding.

3.1.2 Cultural clashes. For historical and religious reasons, the Arabs and Jews in the region are lacking mutual trust and there has been a huge barrier between the two groups for a long time now. There are huge differences between the two in terms of environmental protection awareness, customs, how they deal with matters, lifestyles, work methods, and technical measures used. This caused the project to encounter heavy resistance and misunderstandings. For example, the Arabs were skeptical about treated water, believing it went against the will of god. After the workers patiently explained the process, a portion of them began to change their thinking and started using the treated water. The eradication of such cultural clashes and misunderstandings is an important step in promoting TEAQ.

3.2 Performance

The project has had the following successes:

3.2.1 Scientific success of the core Concept. The core Concept of the initiative is that green buildings which combine traditional elements and modern technology can save energy resources. Relevant departments conducted a survey of the green building and found that it used 75% less energy than traditional buildings which reduces the greenhouse gases associated with energy production and consumption, as well as reducing energy costs.

3.2.2 Positive effects of the environmental protection education, community services, and water treatment and recycling. All urban planners that work in the 6 municipalities receive professional training, increasing their abilities and consciousness of their responsibilities. All of the city's K-12 schools, both new construction projects and existing buildings, are gradually becoming green. 6000 visitors annually

participate in the Center's educational programs and activities, including a large number of students and teachers. Arab and Jewish architects, engineers, urban planners, and middle and lower class citizens are beginning to tear down the walls that separate them in order to cooperate and solve the issues in the area. With the support of the government, TAEQ now reviews all plans for public buildings in the region, developing green technology for them.

4. Lessons and Revelations to All Cities in the World

TAEQ's success can serve as an example to others. The project's versatility means it can be replicated in many places around the world, reducing energy consumption and intellectual costs. Its inclusiveness, the combination of traditional Arabic architecture with modern



The Executive Director of TAEQ Presenting the Biological Water Purification System

technology, shows how a region's various multicultural elements can work together. The use of wind power and water treatment and recycling technology has had positive effects on the local economy and society, as well as helps stabilize the ecological environment. This has provided the basis for sustainable development. These elements can serve as an example to other cities on how to promote environmental protection technologies and system reforms, increase publicity in order to heighten the public's environmental awareness, and strengthen collaboration in terms of environmental protection.

4.1 Strengthening innovations in environmental protection technologies and mechanism while taking local conditions into consideration and utilizing one's own resources

One of the most innovative parts of the TAEQ project is its use of local resources such as the abundance of sunlight and wind. The solar photovoltaic panels and the wind turbine provide the power supply for the building and showcase the benefits of selecting self-developed energy-saving and emission-reducing technology based on local natural resources. This helped solve the problem of having to rely on imported energy, and can serve as an example for how to promote green economic growth in an area. Using this project as an example, city governments should provide support in the form of policies (specific encouraging provisions), funding (establishing special funds), human resource allocation (forming talent teams), and services (providing platforms) to various organizations working on energy-saving and emission-reducing technology, to help secure their independence, creativity, and flexibility. City governments should also manage various aspects of work with the goal of creating an eco-civilized city with strong local characteristics. In particular, they should utilize their own combined

strengths and work together with domestic and international higher education and research institutes, to speed up the development of major energy-saving and emission-reducing technologies so as to put them into application and allow them to benefit the public sooner. Finally, governments should actively take part in the design of environmental protection technologies and look for ways to establish a long-term trans-regional and transnational technology exhibition and cooperation mechanism, for example international technology cooperation forums, technology roadshows, and special project trade fairs, to improve the sustainability of technological innovations.

4.2 Raising the public's environmental awareness and formulating a complete publicity and education framework

One of the main ideas and goals of TAEQ is to improve the public's sense of responsibility for the environment in order to solve the problems facing the local ecology and create an environment with orderly development where man and nature live together in harmony. In order to achieve this, it made full use of the project's functions to develop diversified publicity events, such as regular seminars and forums, inviting experts and scholars to discuss the future development of environmental protection. It also provided training for and promoted green thinking amongst primary and middle school teachers and students. It launched environmental protection development and research projects with domestic and international research institutes and foundations etc. And in addition, it utilized media network resources to publish research and cooperation results to further increase their publicity. These moves not only provide the thinking and space necessary for it to achieve its goals, but also increase social participation in sustainable regional ecological development, greatly increasing the public's awareness and sense of responsibility.

4.3 Strengthening intercity cooperation in neighboring areas and sharing and utilizing innovative environmental protection and sustainable development experience

In the years of operation, TAEQ's project has had a huge influence on the environment, cultural exchanges, education and training, and sustainable economic development both locally and in neighboring countries. Its ability to do so lies in the fact that it relies on bringing together resources, including financial, personnel, and project guidance and design support from domestic parties such as city alliances, the Israeli Ministries of Education and Environmental Protection and Galilee regional alliance etc., as well as attracting neighboring regions and other countries and regions such as Syria, Egypt, the US, the EU, and Turkey, to cooperate in research projects, project inspections, personnel exchanges, technology R&D and application, and publicity and education. TAEQ manages to increase its publicity and influence by utilizing various elements, in particular mobilizing various organizations to actively participate in its projects.

Journalist Observation

Synergy through Environmental Protection - A Cooperative Process to Promote Ethnic Integration

It is difficult to persuade farmers to adopt environmentally friendly means of irrigation, but it is far more difficult to create partnerships between farmers of different ethnic groups.

The Mayor of Sarknin, Dr Hussein, is also the Chairman of the Arabic Cities Union in the territory of Israel. Talking about this initiative, he said, more or less humorously, "In the past, it would probably have taught

people to kill each other, but now it will teach us to live in harmony with others and with the environment." Although the Mayor had been joking, six people died in 1976 in a land dispute between different ethnic groups. On the map on his wall, there are red lines between Jewish and Arabic settlements, a constant reminder of the extent of estrangement between the two races. Dr. Hussein spoke about how the initiative would often receive external interference when pushing for racial cooperation; for example, the Palestine-Israel conflict has had a recent impact on cooperation between local Arabic and Jewish farmers.

Because of these differences between ethnic groups, farmers face further difficulties on top of estrangement and barriers against trust and cooperation. Sometimes, a viable practice among Jewish farmers may not be acceptable to Arabic farmers, and vice-versa. Differences in worldview lead to differences in approaches to farming.

"Many farmers not only lack confidence in cooperating with people from another ethnic group," Dr. Hussein said regretfully, "But worse, they don't trust the local government, even if it consists of people from their own race. Likewise, local government officials lack the determination to push this initiative forward."

Racial cooperation has long been stuck in a repeating cycle of 'trust and mistrust', making it difficult to promote the philosophy of environmental protection. "Sometimes I find myself in despair," Dr. Hussein said, appearing helpless and perhaps a touch hopeless. However, as this initiative brings benefits to the people and improves their standards of living, hope remains that the red lines on the map between the farms of Arabs and Jews will begin to disappear.

NGOs and Disaster Management

—Inspirations Drawn from Sylhet's Initiative

Since Implementation in 2007, Bangladesh's Sylhet initiative “A Disaster Resilient Future: Mobilizing Communities and Institutions for Effective Risk Reduction”(abbreviated as “Effective Risk Reduction”) has shown remarkable progress in improving residents' awareness of disaster preparation and mitigation, as well as in terms of institutionalized management. It has provided a new management model aimed at disaster preparation and response. In 2012, the initiative stood out amongst the 255 initiatives for the Guangzhou International Award for Urban Innovation, and has been chosen as one of the final 10 candidate cities for the 1st Guangzhou Award.

1. Origin

1.1 Sylhet is regularly hit by disasters but its residents has poor disaster awareness

Bangladesh is a country most prone to disasters in the world, with frequent typhoons and floods every year. These often have major adverse effects on the population and national economy. Bangladesh is situated in a seismic zone with two thirds of its territory being affected by large faults. Over the last few decades, the frequency of earthquakes in Bangladesh has increased, with the intervals becoming ever shorter, greatly increasing the probability of an earthquake hitting.

Due to its geographical location, Sylhet City, comprised of 27 administrative regions, is one of the countries in the would most prone

Major Natural Disasters in Bangladesh

Type	Date	Scale	Effects
Earthquake	July 18, 1918	7.6	Mainly affected areas outside of Dhaka, including Sylhet
	July 2, 1930	7.1	Mainly affected the Rangpur area
	November 22, 1997	6.0	Minor damage to Chittagong
	July 22, 1999	5.2	Occurred at the coastline. Many houses destroyed.
	July 27, 2003	5.1	Occurred in the Rangamati area
	February 4, 2011	6.4	Felt in most parts of the country
Typhoon	November 12, 1970		Affected the whole country. 300,000 people died, and damages exceeded 1 billion US dollars
	April 29, 1991		Coastal regions badly hit, 140,000 people died, and damages exceeded 2 billion US dollars
Flood	Aug-Sept 1988		52 regions hit by the flood covering an area of 89,900 square kilometers, ¾ of the country's total land. 1,517 people died.
	July-Sept, 1998		Worst and longest flood on record. 100,000 square kilometers of land flooded, destroying 10,000 kilometers of road, 4,000 kilometers of embankments, and over 2,000 bridges. Over 1 million homes damaged, 31 million people directly or indirectly affected. The entire country's economy was practically in ruins.

to natural disasters. Over the past 150 years, Sylhet has been hit with 3 earthquakes registering over 7.5 on the Richter scale; the most recent being in 1918.

However, the residents' disaster awareness was pretty poor and they had no idea how to prepare. Statistics show that the city's literacy rate is under 70% and the schooling rate is less than 60%. Many people were unable to learn about disaster preparation due to their illiteracy. Besides, under the influence of the social atmosphere that prioritizes



business and profits, people are more focused on personal interest rather than on cooperating and sticking together. This further weakened the city's awareness of the importance of a united strength in disaster mitigation and preparation. On top of this, the citizens lacked disaster drills, facilities, and education. As soon as disaster struck, panic was all that followed. It's easy to see how important it was to improve the local's awareness and preparedness.

1.2 Rapid urbanization but poor public resources

Over the past few years, Sylhet's economy has experienced rapid development, with the city's population continually increasing. This rapid development, however, has not been seen in public facilities, and the city's water, electricity, gas, road, and telecommunications facilities are relatively weak. In poorer areas, such facilities are practically non-existent. Power shortage forces many to rely heavily on home generators. There are regular water cuts and a lack of clean water. The natural gas from the gas pipes is not pure, and it does not have sufficient pressure. Transport is disordered and crowded. There is also a lack of fire-fighting equipment, and the list goes on. This lack of facilities greatly affects the population's ability to deal with disasters. Sylhet is often hit by floods, but this is not because it has a higher rainfall than other areas, but rather due to the poor drainage system. A lack of public health infrastructure in the city means epidemics are also a regular occurrence.

1.3 The government has limited governing abilities and lacks disaster countermeasures

There are two reasons why the Sylhet government has limited governance ability.

The first is related to its system. Bangladesh has a parliamentary

republic system where each government is selected through democratic elections. Although this has been in effect for several years, Bangladesh has not grown into a mature democratic state; on the contrary, it has failed in many areas. The multi-party system has given birth to opportunism, a lack of governance, a sluggish decision making system, and political and social unrest. According to statistics from relevant authorities, in the 11 years from 1990 to 2001, there were 2,423 cases of political conflict between the main parties in Bangladesh. An impoverished country, whose government is regularly dealing with political struggles, has no time to even consider social governance. Sylhet has a municipal cooperative system, and its city government is managed by a council made up of 1 chair and 20 members. But it too suffers from the same political struggles and there are often demonstrations and strikes. Trying to merely copy the democratic model in an underdeveloped country does not help solve people's problems nor bring them freedom; here it has slowed down economic development and the construction of infrastructure.

The second reason is related to its economic foundation. Because the government is restricted by its regime, it has a limited ability to utilize economic resources. In addition to this, the already poor economic foundation makes it impossible to pool resources in order to deal with social issues.

Although the government has established disaster preparation organizations at all levels from the nation to the village, its lack of governance means it is still failing in terms of managing preparation and response. For example, the country still lacks a formulated quake-proof standard for buildings. According to statistics from an NGO, of the 52,000 buildings in Sylhet, 24,000 do not meet quake-proof standards and are classified as dangerous.

2. Initiator

The initiator of the "Effective Risk Reduction" was the Bangladeshi NGO Islamic Relief Worldwide (IRW). The government provides no financial aid or guidance; their only cooperation with the project is acting as an advisory source or aiding in activities (e.g. providing a site and equipment for fire drills) when asked, or by accepting policy suggestions from the NGO. Everything from the project selection to implementation is managed by IRW.

That for an NGO governs this program is largely related to the change in the government's attitude towards NGOs. At the end of last century, the Bangladeshi government abolished its limitations on NGOs and began to support them. For instance, they simplified the registration process, allowed international NGOs to work in the country, and allowed NGOs in the country to accept foreign donations. These policies brought about a rapid development of NGOs in the country. Just by looking at employment figures, we can see how quickly they grew. Bangladesh is an agricultural country, where only 8% of the population works in industry. However, almost 20% work for NGOs. Many of them have received a good education and have promising futures which has increased NGOs ability to influence the government. They have become a strong force in social governance.

IRW is an internationally influential charity organization. Originally formed in the UK, it soon formed a branch in Bangladesh due to the shared religion with the country as well as the special relationship between Bangladesh and the UK. It has worked in promoting disaster preparedness and mitigation in Bangladesh for several years now, and it plays a role in assisting and monitoring other NGO projects.

3. Concept and Implementation

3.1 Concept

Bangladesh's IRW began work in Sylhet in 2007 and was funded by EU humanitarian aid and Sylhet's Citizen Protection Committee. The Sixth DIPECHO Action Plan formulated by the organization provided an 18-month financial support for disaster reduction projects in South Asia. IRW used this money to launch Sylhet's "Effective Risk Reduction". The goal of the project was to raise the residents' awareness and strengthen their ability to deal with disasters so as to reduce the danger they pose on their lives. Their work was split into two main principles:

3.1.1 Enhance residents' disaster awareness is the key to reducing the effects of disasters. As earthquakes, floods, and fires aren't a daily occurrence, it's hard for people to accumulate experience. But through training, educating, and drills, it's possible to strengthen the population's ability to deal with disasters.

3.1.2 Promote the institutionalized development of disaster management. To improve the sustainability of the project, IRW focused on establishing and educating a local volunteer force.

3.2 Implementation

The project was executed by IRW in Bangladesh and was split into three stages.

The first stage involved IRW establishing project workstations in various communities, explaining the work of the project to the residents and community groups. This helped community groups to gain a better understanding of the project's goals and related issues, as well as motivate and train them to take on leading roles in the project.

The second stage was the solidification stage. IRW formed the



First-Aid Drill in School

following community-based groups, Ward Disaster Management Committees (WDMC) and Community Volunteers Groups (CVG) in every administrative district, and School Disaster Management Committees (SDMC) in every school. IRW formed a coordinated mechanism using methods such as regular meetings, disaster evaluations, disaster risk reduction action plans, spontaneous community action, and project intervention with these community-based groups. By training the leaders of these groups, IRW was able to allocate tasks to them. The groups guided disaster preparation work, assessed disaster and risk reduction capability, prepared contingency plans, and further developed the project in the local area. During this stage, disaster knowledge and skills were imparted to relevant figures in the community bodies. The training given included basic disaster training, city disaster evaluating, first aid training, search and rescue

training, school safety, fire safety, training given to religious leaders, and the use of safety equipment. Safety and firefighting equipment was also handed out to the groups.

The third stage was the closing stage. through the training activities offered to organizations and the public in the first two stages, the organization had already formed a strong long-term relationship with people from the community-based groups and social bodies as well as service providers, even though the project ended, these people would continue to work together. This ensured the project's goals would be promoted throughout the rest of the city. Thanks to the training given, the future of the project was now completely in the hands of these people and groups; their safety was now in their own hands. This not only ensured the project could be further promoted, but cemented its sustainability.

3.3 Function of and relationship between volunteer groups

The various groups formed by the project form a complete organization covering all needs. These groups all play various roles and take on various responsibilities, but each group has formed a strong cooperative relationship with each other.

3.3.1 Ward Disaster Management Committees (WDMC)

The WDMCs were formed based on the framework of the municipal disaster management committees. The municipal disaster management committees are the lowest level of the National Disaster Management Council, and IRW established similar organizations at the next level under them. At present they form relationships between relevant government departments and keep an eye on the needs of the top level disaster management committee. WDMCs provide volunteer services and have considerable influence in the organizational structure. They are

made up of people of strong relations with other organizations, including officials, teachers, dissidents, engineers, doctors, service providers, local volunteer group leaders, and religious leaders etc. In the overall project, WDMCs serve as the leaders; they formulate policies, serve as a bridge between relevant government departments and service providers, and use their own resources to support activities hosted by volunteers and other organizations.

3.3.2 Community Volunteer Groups (CVGs)

CVGs assist and support WDMCs. Their members are in direct contact with members of the community. Each group includes fit and healthy members who go from door to door or to businesses teaching disaster reduction skills, improving disaster preparation awareness, and organizing meetings to talk about relevant activities and plans etc. Therefore CVGs form the core of the entire project. They also recommend volunteers and other members to WDMCs.



|Keane Bridge and Ali Amjad Clock Tower



|IRW's Project Pamphlets and Other Material

3.3.3 Cluster/Mohallah Groups

Cluster or Mohallah Groups are made up of people directly affected by disasters. At first they had no disaster knowledge or skills, but this was improved thanks to the drills, flipcharts, documentary films, display boards, family checklists, comic strips, and pamphlets etc. from CVGs. Thanks to this training, they are able to put theory into practical use and find solutions.

3.3.4 School Disaster Management Committees (SDMCs)

IRW placed great emphasis on schools in the project as children are the most vulnerable when an disaster strikes. Meanwhile, children learn things much more quickly, and with their help, knowledge and skills could be spread to homes and communities more easily. In addition to this, they would also be training the next generation of disaster preparation workers. SDMCs are mainly made up of school teachers and students as well as some guardians. They embed disaster knowledge into the curriculum, and educate and train through drills, making



Rescue Skills Training of Community Volunteers

pictures, and holding contests etc.

In addition to its own organizations, IRW also worked closely with outside bodies such as hospitals, markets, building committees, and religious organizations. For example, IRW worked with government departments to provide training to hospitals and nurses to improve their reaction times and rescue abilities.

In addition to this, IRW also cooperated with and gave training to construction worker associations and engineers to help them build safer buildings. IRW also trained local religious leaders as these figures already hold a high authority and can help in spreading knowledge.

3.3.5 Relationship between Each Group

Each group formed a strong relationship with one another in order to complete the project. The first type of relationship is interpersonal

cooperation. Each volunteer group ensures each volunteer in the area takes part and that those who are active and show leadership qualities enter into a WDMC to become a project leader. Second, project cooperation. WDMCs serve as the link between each group. They train and guide volunteer group leaders, and collate information from each group and hand it to the Municipal Disaster Management Committee, as well as supervise the actions taken by the committee in response.

In addition, IRW also formed strong relationships with the government. These channels were formed partly thanks to the organization's international influence, but also thanks to the influence NGOs have in Bangladesh. NGOs in Bangladesh have a high reputation; they pay handsome salaries, provide plenty of room for promotion, and so attract a large number of talents. These people often have a strong influence and voice in the country. Another influencing factor is that Bangladesh is a democracy. The government places great emphasis on public representation. NGOs are influential and have a strong public base and so their ideas are more likely to be heard. Therefore IRW was able to form a professional yet convenient relationship with the government.

IRW's relationship with the government involves: a) sending its members for national disaster training, b) inviting members of the disaster management committee to serve in leading positions in WDMCs, c) providing the disaster management committee with information on disaster risk reduction plans and potential risks given by various social groups and collated by the WDMC, and d) forming cooperative relationship with governments in other cities. For example, they invite relevant departments to events such as fire drills while they form relations with and train local fire departments and hospitals etc., and invite officials

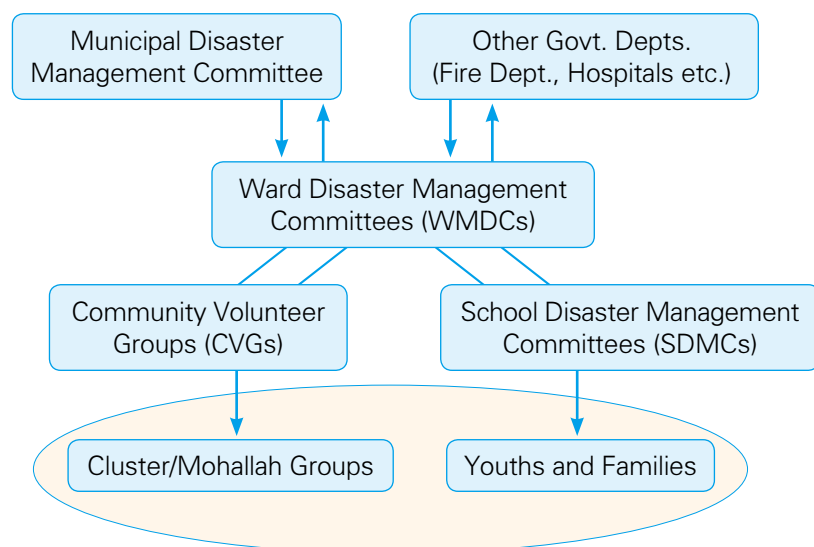


Diagram of the Interconnecting Mechanism in the IRW Project

and experts to give lectures and take part in the training etc.

IRW has formed a strong contact and cooperation network both internally between various groups, and with the government. This network has helped IRW improve the influence and abilities of the project, thus helping it gain support and participants from all sectors of society.

4. Performance Evaluation and Existing Problems

4.1 Achievements

Since 2007 when the project started, IRW has promoted the project in 20 out of the 27 administrative districts in Sylhet, producing results.

First of all, through training, residents' awareness and disaster response capabilities have seen a huge improvement. Residents now have an understanding of the dangers of disasters and the hidden dangers in their area. They have a grasp of disaster preparation and of how to use

relevant equipment, as well as of relevant measures being enforced.

At the family level, residents are able to take basic family measures such as removing heavy objects from high shelves, writing down emergency contact numbers, ensuring they have a first aid kit, and marking out a safe zone in their homes etc.

At the school level, children have known to take the drop-cover-hold position when an earthquake strikes and to head to safe zones etc. They also pass on their knowledge to other children and their family members. Thanks to the training, schools all have first aid and search and rescue equipment and capabilities.

At the community level, community groups like WDMCs and CVGs have become more independent and can conduct disaster risk reduction projects on their own. They help increase public awareness and capabilities through door to door visits, medical camps, seminar groups, and simulation training etc. Sylhet's residents are gradually doing away with the idea that one has to resign to fate once disaster strikes. Sylhet has also been included in the UN's International Strategy for Disaster Risk Reduction project "Making Cities Resilient". It is one of the best prepared cities in the country when it comes to natural disasters.

In addition, the project has become more institutionalized. Since Bangladesh IRW formulated the DIPECHO Action Plan it has continually stressed the importance of institutionalization. It used local funds to form an organizational structure based on the local community to ensure the sustainability of the program. The various groups formed by the project form a complete organization covering all needs, ensuring its sustainability and propagation. IRW formed WDMCs at the administrative district level, with around 40 members per committee. It also formed volunteer groups made up of around 40 people. Each district has already completed their city danger evaluation. Each school has compiled a risk



Disaster Relief Class in High School

reduction education program with classes held twice a month and drills held. The institutionalization of these groups is continually improving. For instance, an earthquake-proof construction forum is held every 6 months to train workers and improve building standards. Communities hold drills once or twice a year, and the communication and cooperation between groups and emergency departments is continually improving.

Thanks to its achievements, the local government has approved of the project's methods and the municipal government has acknowledged the work of the WDMCs and CVGs, providing them with supporting policies.

The institutionalization of the project has also been praised by other NGOs and the methods are copied in other projects. For example, Oxfam copied the model and institutionalization methods, and is promoting projects through cooperation with VARD.

4.2 Existing problems

Sylhet's "Effective Risk Reduction" still faces some difficulties, the largest being general public awareness is still poor and hard to improve. There are three reasons this is still an issue. Firstly, many locals rarely or have never encountered any earthquake and don't realize the danger. It has been over 100 years since Sylhet was hit by an earthquake which resulted in large deaths and destruction, and this has caused many to see it as something not worth worrying about or learning.

In addition, as Sylhet is still underdeveloped, many people put their basic welfare and needs first. Disasters are not seen as an immediate problem. Finally, the local population is very religious and believes Sylhet to be a holy land. It is seen as a holy land by several religious sects and is thought to be protected and not under the threat of natural disasters.

It is a difficult task to change these beliefs and increase the population's disaster awareness.

5. Lessons and Revelations

Disaster prevention and risk reduction is a challenge facing all cities. The project in Sylhet was promoted entirely by an NGO. The project gained large influence and this was largely related to IRW's international influence, support from the local government, and the localization of the project. This project provides great insight into increasing municipal social governance and soft power.

5.1 Disaster prevention and risk reduction can be undertaken by NGOs rather than the government

The most innovative part of this project is its complete undertaking by an NGO. In recent years, people from all circles including academics and



politics have realized the advantage of having NGOs take part in social governance. In the traditional dual structure of government and society, there is a high level of integration, where the government has the power and the full responsibility for social and individuals' development. With a relatively mature NGO in place, the dual structure can be done away with, and the NGO can serve as a social self-governing body which helps deal with certain challenges and issues, thus alleviating pressure on the government. NGOs serve as a bridge and link between the government and society which can help ease and prevent problems between the two, as well as help save the government money on social governance. By taking on all aspects of social governance alone, the government bears a heavy burden which often hinders the efficient management of the government. With the help from NGOs, this responsibility is lightened, the cost is reduced, social strength is consolidated, and managing efficiency is increased.

All cities should encourage NGOs to take part in disaster prevention and risk reduction. NGOs can help improve awareness on a basic level, mobilize the public, reduce the government's burden, and improve the capabilities of disaster management.

5.2 The government should reinforce its the supervision of and services to NGOs, and safeguard their healthy development

Bangladesh has played a groundbreaking role in the transnational dialogue and cooperation between NGOs and the government. Bangladesh has established a systematized management model for the management and evaluation of NGOs. The management part can be divided into three areas: a) The government has a special institution which accepts financial statements from NGOs and conducts audits. In the event they are found to be conducting anything illegal, the NGO is

shut down. b) It has developed a series of indicators for complete risk management, which assesses NGOs' management level and takes into account transparency, accountability, and social participation, to see whether their skills and abilities are up to standards. c) The government conducts supervision via data from a trustworthy third party. In addition, the government has established an NGO coordination committee which is held by government and NGO representatives twice or three times a year.

The government's supervision and support of NGOs is critical. Bangladesh serves as an example of how to go about this with financial, legal, and technical supervision, along with providing professional technical expertise and a channel for easy communication. With this all in place, NGOs can develop much more easily.

Journalist Observation

The Government Duties Can Be Apportioned

When visiting Sylhet, the city sample in Bangladesh, the journalist came to the following conclusion: When it comes to public security, the government should take all major responsibility. But this responsibility can be divided, apportioned and community-based.

For instance, the pollution check in Sylhet is done on a community basis. Sylhet has 27 communities, each of which has established a community commissioner team, who works free of charge as volunteers. In some communities, those who apply can become commissioners. But in others, commissioners must be elected as there are so many who want to become commissioners. The community's commissioner team works in conjunction with the social organization it serves, sharing



the duty. To help the community commissioners to better serve their communities, they also train dedicated volunteer teams. When a community commissioner begins to perform his duty, he has to work with community residents to make a map of the problems facing that community in such areas as fire prevention, water use and security, etc. Then they will work out the solutions based on that map.

To some degree, the government's dominance and major role can be fulfilled only after the responsibility has been divided, apportioned and community-based. In this way, government programs can be better executed and the government's image becomes more established.