

Urban World

Volume IV · Issue 04 · December 2011



Waiting for a solution

How the Gates Foundation is leading the campaign for better sanitation

- Singapore's model strategy for water conservation
- New report reveals UN sanitation target will not be reached
- One musician's quest to bring clean water to the slums



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FOR A BETTER URBAN FUTURE

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At international meetings throughout the year, UN-HABITAT joins its partners in the global water and sanitation arena to keep our planet's most precious of resources, our water, high on the agenda. The right to water is a human right. The right to sanitation is the right to dignity.

The recently published 2011 Millennium Development Goals Report of the Secretary-General of the United Nations says the world is on track to meet the water target, but far from meeting the sanitation target. Agreed by world leaders at the start of the new millennium, it stipulates that we should: "Halve by 2015 the proportion of the population without sustainable access to safe drinking water and sanitation."

World water week gatherings like the very successful World Water Day in Cape Town on 22 March, World Water Week in Stockholm in August, or the International Water Week in Amsterdam in November have been very successful in focusing efforts on achieving this target

The Secretary-General's report tells us that the world is likely to surpass the drinking water target, though more than 1 in 10 people may be without access in 2015. Coverage increased from 77 percent in 1990 to 87 percent in 2008. If this trend continues, the drinking water target of 89 percent coverage will be met — and likely surpassed — by 2015.

In 92 percent of developing countries (103 out of 112 countries), drinking water coverage increased between 1990 and 2008 or stayed the same, at a rate of 98 percent or higher. In only 13 countries did coverage decline.



ments of the population who are most exposed to the dangers of inadequate human waste disposal.

The International Year of Sanitation in 2008 gave much needed impetus to the debate on sanitation. And in various regions, yearly sanitation conferences are held to ensure that sanitation remains on the political agenda and receives the attention it deserves.

In this new urban era, time is not on our side, and in a modern world where we have the technology, the resources and the know-how to do better than the target set, we have no excuse for failure.

Water is life. Sanitation is dignity.

Dr. Joan Clos,
Under-Secretary-General of the United Nations,
Executive Director UN-HABITAT



Latin America and the Caribbean, East Asia and Southeast Asia have already met the drinking water target. East Asia registered the largest increase in drinking water coverage — from 69 percent in 1990, to 86 percent in 2008. Sub-Saharan Africa nearly doubled the number of people using an improved drinking water source — from 252 million in 1990 to 492 million in 2008. Coverage in that region increased from 49 percent in 1990 to 60 percent in 2008.

But it's shocking that despite the high profile meetings, and the alarm bells we sound on the international stage, that the world remains far from meeting the sanitation target. In fact, the report says it will take until 2049 to provide 77 percent of the global population with flush toilets and other forms of improved sanitation.

In 2008, an estimated 1.1 billion people did not use any facility at all and practiced open defecation, which poses enormous health risks, particularly for poorer segments

New report shows countries will not hit UN sanitation targets by 2015

More than a decade has passed since world leaders committed themselves to the Millennium Development Goals aimed at lifting people around the world out of extreme poverty, hunger, illiteracy and disease. In this reading of the Secretary-General's recently published Millennium Development Goals Report 2011, we learn that the world is on track to meet the water target by 2015, another 35 years will be needed to reach sanitation targets



In this unusual view of Ho Chi Minh City, Vietnam, water is not the problem. But what of sanitation for the poor?

Sha Zhukang, Under-Secretary-General of the United Nations for Economic Social Affairs, says in a preamble to the report that efforts to meet the goals have to be intensified, despite the progress so far.

"Although many countries have demonstrated that progress is possible, efforts need to be intensified" says Zhukang. They must also target the hardest to reach: the poorest of the poor and those disadvantaged because of their sex, age, ethnicity or disability. Disparities in progress between urban and rural areas remain daunting.

Drinking water

Progress to improve access to clean drinking water has been strong. Every region has made progress in improving access to clean drinking water. An estimated 1.1 billion people in urban areas and 723 million people in rural areas gained access to an improved drinking water source over the period 1990-2008.

Eastern Asia registered the largest gains in drinking water coverage — from 69 percent in 1990 to 86 percent in 2008. Sub-Saharan Africa nearly doubled the number of people using an improved drinking water source — from 252

million in 1990 to 492 million in 2008. Coverage in that region increased from 49 percent in 1990 to 60 percent in 2008.

Globally, coverage increased from 77 percent in 1990 to 87 percent in 2008. If this trend continues, the drinking water target of 89 percent coverage will be met — and likely surpassed — by 2015.

The new report says that in 92 percent of developing countries (103 out of 112 countries), drinking water coverage increased between 1990 and 2008 or stayed the same, at a rate of 98 percent or higher. In only 13 countries did coverage decline.

In all regions, coverage in rural areas lags behind that of cities and towns. In 2008, an es-

Latin America and the Caribbean, Eastern Asia and South-Eastern Asia have already met the Millennium Development Goals drinking water target

estimated 141 million urbanites and 743 million rural dwellers continued to rely on unimproved sources for their daily drinking water needs. In sub-Saharan Africa, an urban dweller is 1.8 times more likely to use an improved drinking water source than a person living in a rural area.

An analysis of survey data from sub-Saharan African countries shows that the poorest 20

percent of the population in urban areas are almost six times more likely to rely on an unimproved drinking water source than the richest 20 percent. In urban areas, the poorest households are 12 times less likely than the richest households to enjoy the convenience and associated health benefits of having a piped drinking water supply on premises.

Sanitation

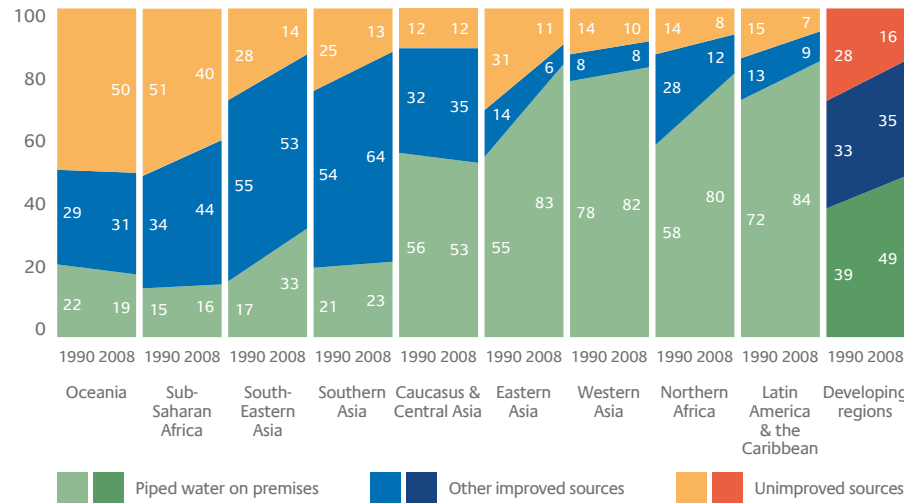
However, despite the significant progress made towards drinking water targets, the world is far from meeting the sanitation target. In fact, at the current rate of progress, the report says it will take until 2049 to provide 77 percent of the global population with flush toilets and other forms of improved sanitation. Almost half the population of developing regions and some 2.6 billion people globally were not using an improved form of sanitation in 2008.

That year, an estimated 1.1 billion people did not use any facility at all and practised open defecation, which poses enormous health risks, particularly for poorer segments of the population who are most exposed to the dangers of inadequate human waste disposal. Globally, open defecation rates have declined by one third, from 25 percent of the population in 1990 to 17 percent in 2008. Almost two thirds of the people who practise open defecation reside in Southern Asia. Northern Africa is the only region that has already surpassed the MDG sanitation target, increasing coverage from 72 percent in 1990 to 89 percent in 2008.

The International Year of Sanitation in 2008 gave much needed impetus to the debate on sanitation. And in various regions, yearly sanitation conferences are held to ensure that sanitation remains on the political agenda and receives the attention it deserves. Rural populations everywhere are disadvantaged when it comes to improved sanitation, though disparities with urban areas are decreasing in all regions.

Globally, an urban resident is 1.7 times more likely to use an improved sanitation facility than someone living in a rural area. Inequalities are most stark in Southern Asia, where an urban resident is 2.2 times more likely to use an improved facility than a rural resident. Still, this represents significant improvement since 1990, when an urban resident was 4.3 times more likely to use an improved sanitation facility than a person living in a rural area.

Proportion of population using different sources of water, 1990 and 2008 (Percentage)

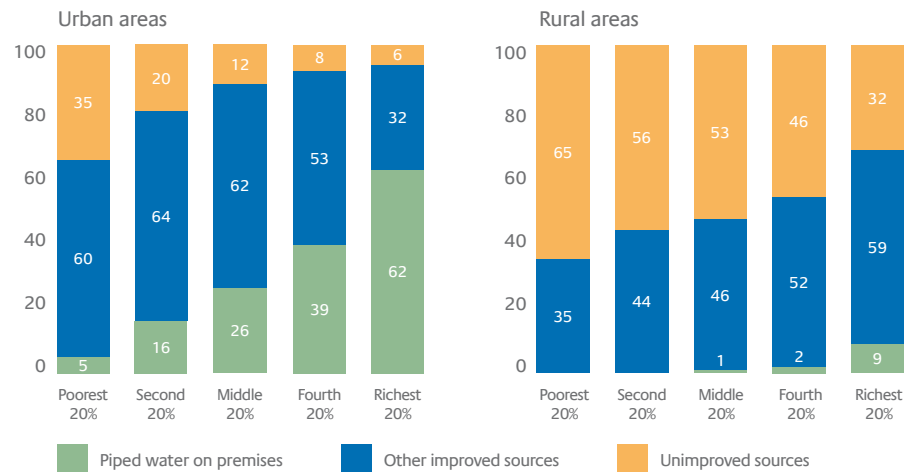


An examination of trends over the period 1995-2008 for three countries in Southern Asia shows that improvements in sanitation have disproportionately benefited the wealthy.

Sanitation coverage for the poorest 40 percent of households has hardly increased, and four out of five people in the bottom two quintiles continue to practise open defecation. The most progress was made by those in the fourth wealthiest quintile, while the richest 20 percent of the population has maintained its very high coverage level.

While significant progress has been made regarding potable water goals, with Latin America and the Caribbean, Eastern Asia and South-Eastern Asia already meeting the Millennium Development Goals drinking water target, sanitation remains a very pressing issue. Swift acceleration of progress is needed to bring improved sanitation to the people who are living without adequate facilities, with all its attendant consequences for the health of communities and the local environment. At the present rate of progress, the 2015 sanitation target will be missed.

Proportion of population using different sources of water by wealth quintile, rural and urban areas, sub-Saharan Africa, 2004/2009 (Percentage)



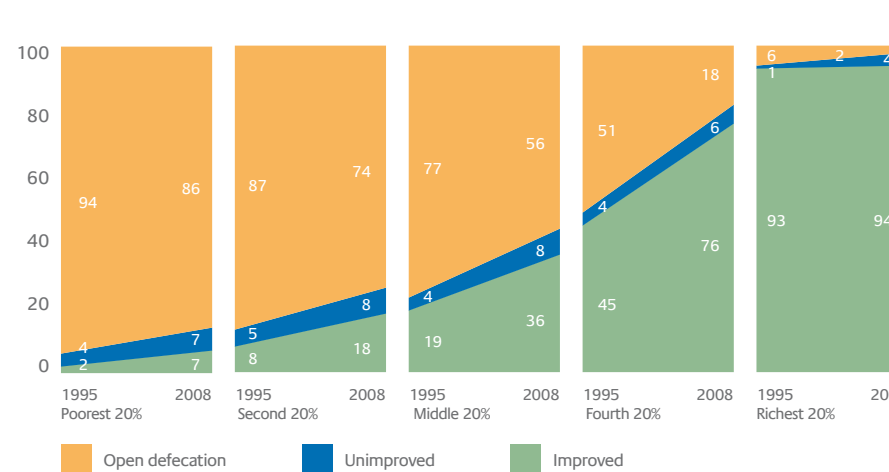
Ban Ki-moon, Secretary-General of the United Nations

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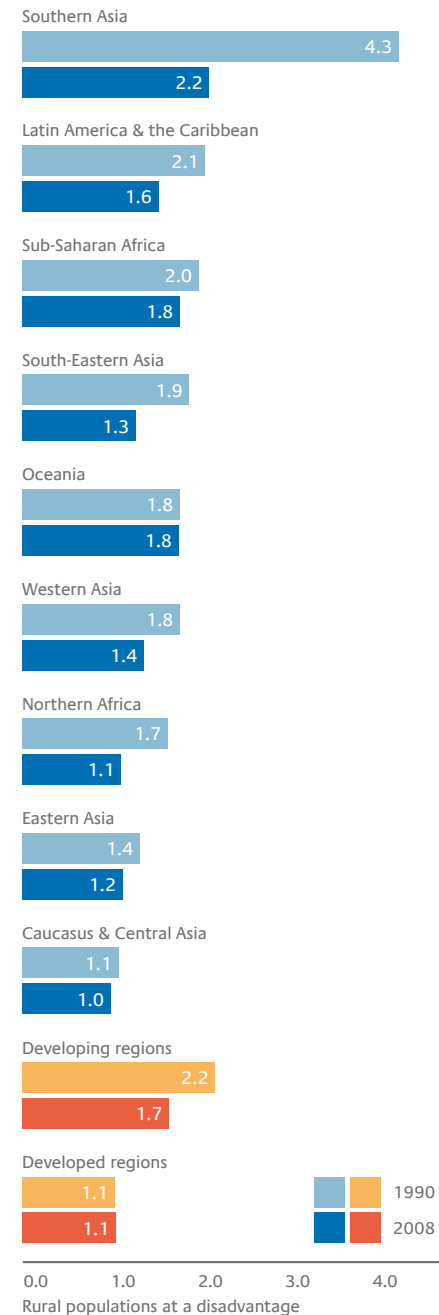
“Between now and 2015, we must make sure that promises made become promises kept. The people of the world are watching. Too many of them are anxious, angry and hurting. They fear for their jobs, their families, their futures. World leaders must show not only that they care, but that they have the courage and conviction to act.”

Ban Ki-moon
Secretary-General of the United Nations

Proportion of population by sanitation practices and wealth quintile, Southern Asia, 1995 and 2008 (Percentage)



Urban/rural ratio of the proportion of population using an improved sanitation facility, 1990 and 2008



Graphs source: United Nations

Waiting for a solution

Concerned that the world is nowhere near meeting the sanitation target of the Millennium Development Goals, the Bill and Melinda Gates Foundation is investing in the search for innovative, new toilet technology able to serve the 1.1 billion people who still do not have a latrine, writes **Frank Rijsberman**, the Foundation's Director for Water, Sanitation & Hygiene



Children use portable toilets provided by the Municipal Corporation of Delhi in an Indian slum colony

PHOTO © BILL & MELINDA GATES FOUNDATION

At the Bill & Melinda Gates Foundation, we focus on areas where we can have long-term impact, particularly those neglected by other funders. On July 19, in a keynote address at the 2011 AfricaSan Conference in Kigali, Rwanda, Sylvia Mathews Burwell, President of the foundation's Global Development Program, called on donors, governments, the private sector, and NGOs to address the urgent sanitation challenge that affects nearly 40 percent of the world's population.

She recalled that flush toilets are unavailable to the vast majority in the developing world, and that billions of people lack a safe, reliable toilet or latrine. More than 1 billion people defecate in the open.

"No innovation in the past 200 years has done more to save lives and improve health than the sanitation revolution triggered by the invention of the toilet," Burwell said. "But it did not go far enough. It only reached one-third of the world. What we need are new approaches. New ideas. In short, we need to reinvent the toilet."

At AfricaSan, the foundation launched a new strategy to help bring safe sanitation services to people in the developing world, and it announced USD 42 million in new grants to spur innovations in the capture and storage of waste, as well as its processing into energy, fertilizer, and fresh water.

The foundation will also support work with local communities to end open defecation and increase access to affordable, long-term sanitation solutions which people will want to use.

Why sanitation?

While problems related to sanitation and water are closely linked, today more than twice as many people lack safe sanitation versus those who lack safe water. Nonetheless, the problem of poor sanitation has not received the same level of attention and funding as water, and our new strategy will enable the foundation to play a potentially catalytic role in the field.

Improved sanitation can have a significant impact on the lives of millions of people worldwide. By one estimate, safe sanitation has increased the average lifespan in the world's richest nations by 20 years.

Access to safe sanitation can reduce child diarrhoea by 30 percent and significantly increase school attendance. Unsafe methods to capture and store waste produces serious health problems and death.

About 1.5 million children die each year from diarrheal disease, and most of these

deaths could be prevented with the introduction of proper sanitation, along with safe drinking water and improved hygiene.

The need for toilet innovation

Improved latrines that offer a good first step up the sanitation ladder in rural areas are not a viable option in dense, low-income urban areas. The premium on space means that urban toilets are shared

but not all, pathogens), and it takes a large amount of space. In short, there are few options for urban areas that are safe and affordable for low-income residents.

The flush toilet connected to a sewer remains sanitation's "gold standard" – the product everyone aspires to. But sewer systems are expensive, and coverage is not keeping pace with urban growth. Even for communities able to afford it, how much



Gates Foundation - Fundación In Terra in Ecuador will develop a pedal-operated, low-cost, easy-to-use, odorless urine-diverting dry toilet, in which faeces and urine disappear after each use, dry material is mixed in mechanically instead of polluting water, and it all becomes plant fertilizer

About 1.5 million children die each year from diarrheal disease and most of these deaths could be prevented with the introduction of proper sanitation, along with safe drinking water and improved hygiene

by many, which presents a challenge of keeping them clean and preventing them from filling up.

Manual emptying, which is widespread, is not a safe practice and usually leads to unsafe dumping along water courses and fields, where human waste becomes a health hazard. Vacuum trucks are expensive and relatively ineffective.

Treatment through drying and composting, the only viable option available today, is slow (more than six months to remove most,

sense does it make to spend money to clean scarce water to drinking-water standards, use a sizeable share of that water to flush waste down pipes to treatment plants, and then spend more money and energy to separate waste from water?

The cellphone of sanitation

Enter our vision of a reinvented toilet. A toilet that is clean and pleasant to use and directly recovers the resources found in waste: energy, ►

nutrients, and water. A toilet, which needs no water lines, sewer lines, or electrical connections. Above all, a toilet affordable to everybody and which everyone wants.

That toilet does not exist today, but given that the flush toilet has been around for more than 200 years, we think that modern science and engineering should be able to come up with new solutions to this age-old problem. That is why we are investing in a broad spectrum of new approaches.

At this stage, we do not know what the reinvented toilet will look like: whether it will be a composting toilet, or use a heat source to remove pathogens and turn waste into bio-char; or use waste to power microbial fuel cells; or use microwaves to zap waste into synthetic gas that can be used as fuel.

We are making more than 60 small, one-year grants to research teams that will explore new options. Many of these teams are aiming to produce prototypes of reinvented toilets by the summer of 2012. We then expect to identify promising concepts that can be developed further and hopefully taken to scale. Our vision is that reinvented toilets should be widely available in five to ten years.

Ultimately, our vision is for a reinvented toilet which treats waste and recovers resources at the household level. We expect, however, that the first generation of reinvented toilets may need to process waste at the community level – for reasons of affordability as well as to manage the energy required to dry and treat waste.

Servicing two billion latrines

While we will pursue the toilet of the future, there are some two billion latrines and septic tanks upon which billions of people depend today, and for which there are no safe and affordable emptying and processing services.

That is why we are investing in improved latrine and septic tank emptying technology, as well as improved waste processing. We are exploring technology to replace manual emptying with safe and affordable mechanical solutions that can process human waste, recover resources, and generate revenue for small entrepreneurs and municipalities.

Cutting-edge research enables some wastewater treatment plants to generate energy (e.g. bio-diesel) from sewage sludge. We are investing, for example, in a pilot plant in Ghana intended to produce bio-diesel from faecal sludge drawn directly from latrines and septic tanks.



A community toilet in a slum colony of India, used by local residents who often are required to pay

Human waste contains valuable nutrients, and in Durban, South Africa, for example, we are investing in a project which aims to recover urine nutrients for use in agriculture.

Cutting-edge research enables some wastewater treatment plants to generate energy (e.g. bio-diesel) from sewage sludge

Sanitation as a business

But technology alone will not solve the problem.

Though technology can be critical to creating breakthrough solutions, it will only reach users if it can be delivered as part of a sustainable sanitation business model.

Governments and businesses need to develop ways to offer sanitation services for which people will pay. These include affordable new toilets and sanitation tools, safe and

affordable latrine and septic tank emptying, affordable transport and processing of waste, and marketing of the resources recovered.

For some cities, faecal sludge could be collected by a municipal service. For others, it may make more sense to enable and regulate a market for companies, which can offer, for example, scheduled latrine desludging on a subscription basis. Currently, some cities have a combined water and sewer charge, which means that low-income residents who pay for water subsidize the sewer system for wealthier neighbours. Tariff systems could be designed that are appropriate for onsite sanitation and help create a market for sanitation services.

Community involvement and going to scale

While we think that technological and business innovation will be critical to achieving access to sanitation in urban areas, we are also supporting forms of community-led total sanitation focused on empowering communities to adopt sanitation solutions appropriate to them. Such

The sanitation crisis

The world is far from meeting the sanitation target. In fact, at the current rate of progress, it will take until 2049 to provide 77 percent of the global population with flush toilets and other forms of improved sanitation. Almost half the population of developing regions and some 2.6 billion people globally were not using an improved form of sanitation in 2008. That year – The International Year of Sanitation – an estimated 1.1 billion people did not use any facility at all, and practised open defecation, which poses enormous health risks, particularly for poorer segments of the population who are most exposed to the dangers of inadequate human waste disposal. Globally, open defecation rates have declined by one-third, from 25 percent of the population in 1990 to 17 percent in 2008. Almost two thirds of the people who practise open defecation reside in Southern Asia.

Excerpted from the Secretary-General's Millennium Development Goals Report 2011.

programmes have helped deliver improved sanitation to millions of people in rural areas.

Investing in community-led sanitation programmes and behaviour change communication is a critically important part of our strategy, and nearly half of our funding will continue to be devoted to these efforts.

Behaviour change plays a fundamental role in getting people to understand the value of improved sanitation. And we are working with a broad range of partners to test different delivery models at the community level.

Our vision

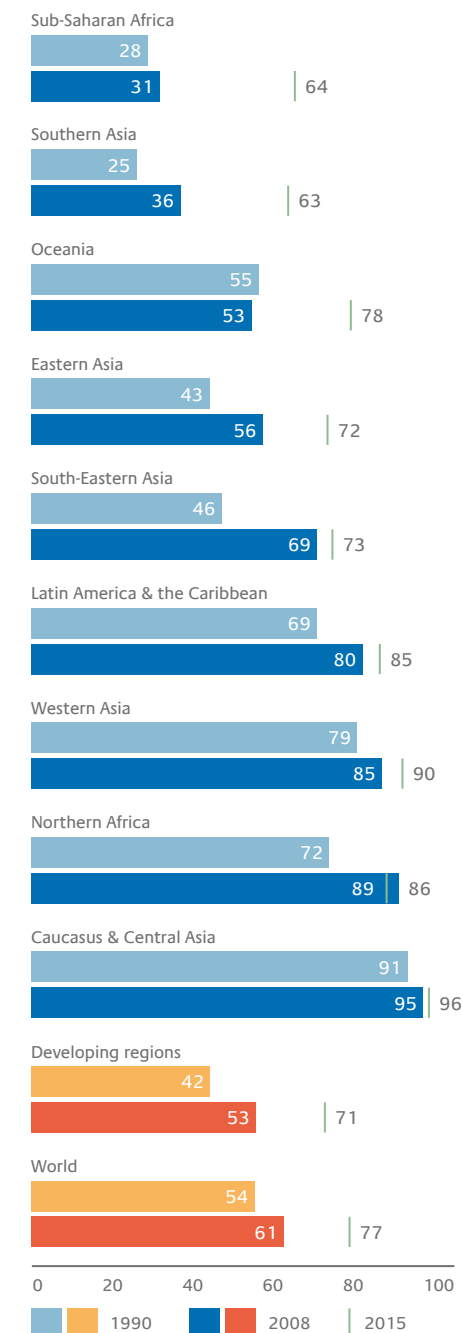
The foundation's vision is that our investments in the next five to ten years can help millions of low-income people in Africa and Asia gain access to sustainable sanitation services and live in communities free of open defecation.

In the long-term, we believe that sustainable sanitation services will need to include safe and affordable processing of waste and that a reinvented toilet – a toilet everyone will want to own -- will be a key element of that solution.



A small child in India stands at a water pump near her family's makeshift toilet

Proportion of population using an improved sanitation facility, 1990 and 2008 (Percentage)



Graph source: United Nations

Singapore – collecting every drop of water

Singapore has always regarded water as a critical resource for its survival and growth. As a small city-state, it was driven by land scarcity to lay down careful plans for long-term land use, the protection of water bodies and the environment. Here, **Hon. Tharman Shanmugaratnam**, the Deputy Prime Minister and Minister for Finance & Manpower, explains a model strategy



The Punggol-Serangoon Reservoir Scheme in July 2011 increased the water catchment to two-thirds of Singapore's area

PHOTO © JXCASI

The journey towards water security will always be a 'work-in-progress' for Singapore, as new challenges emerge in the urban environment.

We made major investments in a used water system that is separate from the storm water collection system. It kept our waterways clean, and has allowed us to collect, treat and reclaim used water on a large-scale to produce NEWater for re-use.

With clean water bodies, it was possible to construct the Marina Barrage and create a reservoir in the city. The commissioning of the Punggol-Serangoon Reservoir Scheme in July 2011 increased our water catchment to two-thirds of Singapore's area. What these have demonstrated is that safe harvesting of urban run-off is both possible and valuable – collecting every drop of rainwater in densely populated areas and conveying them to reservoirs for storage, and then extracting and treating for potable use.

These challenges are not unique to Singapore. Cities around the world will have to contend with issues such as weather extremities in the context of urbanization, increasing water demand and higher public expectations. I believe that collectively, the water community can surmount these challenges.

Seeking opportunities in change

First, cities have to look at the challenges as opportunities to rejuvenate urban living.

An example is the Delta Programme set up in the Netherlands to combat a changing climate. They are acquiring land at strategic locations along the Rhine and Meuse rivers for the temporary storage of excess river discharge. However, the land that has been set aside serves a dual purpose: it not only acts as temporary floodplains, but doubles up as parkland for recreational and communal activities for most of the time, when it is dry.

In Singapore, we have likewise sought to convert previously utilitarian drains and canals into beautiful and vibrant rivers and streams. These transformed waterways are also enhanced with features and technology to help clean the water and alleviate floods. Through this Active, Beautiful, Clean Waters Programme (ABC), the function and form of waterways have been integrated. Besides the drainage function, these waterways now beautify their urban surroundings.



Singapore continues to invest in sustainable water solutions

PHOTO © MERLION444

Sustain investments in technology

A second imperative is to continue investing in technology and research and development aimed at developing sustainable water solutions – even if this means taking a long-term view, as the gestation periods can be long before the pay-offs to new technologies are realized. A growing number of cities around the world have recognized this and have begun incorporating R&D elements in their new urban developments. For example, Abu Dhabi has invested in the Masdar Institute of Science and Technology to find new energy and water solutions applicable globally and in particular, to Masdar City.

In Singapore, the National Research Foundation (NRF) has committed some USD 330 million in 2006 to promote R&D in the water sector. To spearhead this growth, the Environment and Water Industry Programme Office was set up to translate breakthrough research ideas into sustainable water solutions.

I am pleased to announce that the NRF will now allocate a further USD 140 million to top up this budget, raising it to a total of USD 470 million. We are hopeful that with these investments, we will achieve our goal of

growing the value-added contribution from this sector from USD 0.5 billion in 2003 to USD 1.7 billion by 2015, and doubling jobs in the sector to 11,000 by then.

So far, the projects funded under this initiative include those looking into domains like advanced membrane processes, bio-mimicry and low-energy seawater desalination.

Working across boundaries

Urban sustainability is a major challenge facing the world today. Yet, it presents an opportunity to revitalize city living when a long-term, integrated approach is adopted to address this challenge.

By working across boundaries – of geography between cities, of technologies across sciences, and of knowledge across academia, the public sector and industry – we can potentially fast-track the development of solutions at a lower total cost, and make the challenge less daunting for everyone.

Work across boundaries

The third imperative is closer collaboration between the public sector, academia and industry, aimed at developing pragmatic solutions and a thriving urban eco-system.

An example of such partnerships is the Singapore-Delft Water Alliance established in 2007 by the National University of Singapore, Deltares (a consultancy company) and the PUB, Singapore's national water agency. With the objective of developing sustainable solutions for the urban water cycle, the institute integrates the expertise and perspectives of the public sector, industry and academia to carry out impactful research.

To date, there are 23 water research centres in Singapore set up by top industry players, such as Siemens Water Technologies, GE Water, Nitto Denko, Toray, Keppel Corporation and Hyflux. A substantial part of the research is done in close collaboration with our universities and public sector agencies. We continue to welcome companies to collaborate with us to develop, test-bed and bring new urban solutions to market. ■



Marina Barrage green roof

PHOTO © YUUMIN

To date, there are 23 water research centres in Singapore set up by top industry players, such as Siemens Water Technologies, GE Water, Nitto Denko, Toray, Keppel Corporation and Hyflux

Water pressures

More than 100 industry leaders from over 20 countries attended a high-level Water Pressures workshop in Singapore organized in partnership with the firm Black & Veatch. Twelve internationally renowned chairpersons led delegates through a set of discussions the water sector is facing today - policy pressures, innovation pressures and public pressures. The workshop titled Water Pressures – How to adapt and lead in a changing urban environment recommended a series of resolutions aimed at promoting investment in technologies to reduce costs, improving efficiency and drive new revenue streams. Key among these was the idea of creating a political environment, which facilitates the implementation of difficult but necessary water policies. Another was on the importance of communicating how water is a critical resource, especially when it comes to educating the public, particularly youth, about the close links between water and health and the impact of water on energy and food. – Dan McCarthy, President and CEO of Black & Veatch's Global Water Business.

Governance and leadership – highlights from Singapore

Good governance and leadership have long been considered prerequisites for ensuring that people have access to safe water and sanitation. At the Water Leaders Summit in July 2011, a flagship event of the Singapore International Water Week, more than 350 water leaders forming the who's who of the global water industry met to discuss water matters that impact communities worldwide.

The Water Conversation, a newly introduced segment at the summit brought Singapore's Prime Minister Lee Hsien Loong with delegates to answer questions about water and its close linkages with security, governance, finance and technology. The Prime Minister underlined the role of water as a strategic necessity and the need for governments to provide the enabling framework to allow water issues to be addressed. He emphasized the need for governments to look at the entire water cycle from source to tap, and therefore the need to give as much importance to the management of used water as to freshwater.

At the Water Ministers' Plenary, a large number of water ministers from Asia and beyond gathered to take stock of their achievements in the water sector and discuss the challenges that lay ahead. The synergy between the public and private sector was recognized by many water ministers as also the need to have a more responsible pricing regime – a reflection of the changing times. New programmes to combat non-revenue water were highlighted in the speeches of many ministers, indicating that this critical problem was finally getting the much-needed attention.

At the Water Leaders Roundtable, panellists from around the world discussed the water-energy nexus. The advantages of integrating water and energy were highlighted as well as the opportunities that would arise from doing so. Dry cooling systems instead of wet cooling systems in process industries, energy-neutral instead of energy-negative treatment systems for used water and increasingly energy-efficient desalination were cited as virtuous examples of the energy-water nexus.



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Why indigenous knowledge can help climate change adaptation

Thailand experienced its worst floods in over 50 years in October and November 2011. But locally-evolved, traditional practices of designing, planning and building human settlements proved their resilience. Here **Bharat Dahiya**, Human Settlements Officer with UN-HABITAT's Bangkok office, and **Danai Thaitakoo**, Director of the Master of Landscape Architecture Programme at Chulalongkorn University, Bangkok, explain how Thailand's cities and villages live within a waterscape and are well adapted to climate change



The human settlements designed and built in adaptation to waterscape proved their resilience by withstanding the disastrous floods

PHOTO © WPP/LOT

In flood plains and deltas, human settlements are characterized by their construction on stilts, primarily as a protection against seasonal flooding. Some notable examples include the palafitos in Chile and Venezuela, chang houses in northeast India, kelongs in Indonesia and Malaysia, and stilt houses in Cambodia, Myanmar, the Philippines, Thailand and Vietnam.

In Thailand, settlements in the flood plains of Chao Phraya River have been traditionally built on the natural levees of the river, its tributaries and along khlongs (canals). In this part of tropical Southeast Asia, the seasonal cycle is determined by the monsoon rainy season.

Historically, people settled in the flood plains to exploit the fertile soils and abundant waters for rice paddy cultivation. Thanks to this, Thailand is the largest exporter of rice in the world today.

Over time, the local populace has learnt to read and live with the waterscape – as opposed to landscape, in the Chao Phraya River valley where water levels during annual flood season rise up to two metres above the dry season levels in rivers and khlongs. The waterscape has influenced the evolution of architecture so that homes face the khlongs, with their front entrance stairs serving as access points to the waterway. Many homes have waterfront sheds where people relax and enjoy a meal, often bought from the boats of vendors at floating markets.

Thus, people's lives, livelihoods and settlements have evolved as an integral part of an ecologically symbiotic relationship with what is increasingly known as the natural and cultural waterscape.

The long tradition of living with water is a contributing factor to building resilience and climate change adaptation. In towns and villages in Ayutthya and Suphan Buri Provinces, even police stations and schools are built on stilts, with water supply lines and walkways along khlongs.

This indigenous knowledge is being documented, consolidated and taught at Thailand's premier institution, Chulalongkorn University. Moreover, scientific studies have been conducted on the merits of living in a waterscape (namely, joint research by Danai Thaitakoo and Brian McGrath), which helps in managing seasonal floods and supporting environmentally-friendly livelihoods.

Beyond doubt, the art of living with water everywhere in Thailand is a valuable contribution of indigenous knowledge to the science of climate change adaptation vis-a-vis cities, towns and vil-



PHOTO © AHOERSTEMEIER

Settlements have been traditionally built on the natural levees of the river, its tributaries and along canals

lages within specific hydro-ecological systems. With the estimated long-term increase in rainfall due to climate change, flood levels and their duration are expected to increase in the river valleys of Thailand, as elsewhere. Evidently, the human settlements designed and built in adaptation to waterscape proved their resilience by withstanding the disastrous floods that inundated large areas of Thailand in October-November 2011.

The challenge now is to integrate the locally-evolved traditional knowledge of "cultural waterscape" to revise building byelaws and improve modern urban-regional planning and development practice, including the design and construction of flood management systems. This will not only prevent the prolonged periods of in-

undation and related decline in food production – as caused by the worst floods in over 50 years in Thailand in 2011, but will also help in the conservation of the "cultural waterscape".

The added benefit will be an improved climate change adaptation science and practice which integrates both indigenous and modern knowledge, and which will benefit the local populace by avoiding environmentally unsustainable development.

The other challenge is to build popular awareness and appreciation of the traditional waterscape culture of local communities, which since time immemorial has supported lives, livelihoods and habitat along rivers and khlongs in Thailand. ■

Bhutan adopts innovative approach to development

For the last three decades, the Kingdom of Bhutan has followed the guiding principle enunciated by His Majesty the fourth King Jigme Singye Wangchuck, who stated: "Gross National Happiness is more important than Gross National Product." Here **Rinchen Dorji**, Director, Department of Urban Development and Engineering Services, in Bhutan's Ministry of Works and Human Settlements, explains how the east Himalayan country sees its development and water needs as a continuous process towards a balance between material and non-material needs of individuals and society



The concept of Gross National Happiness has helped Bhutan enhance its progress towards the Millennium Development Goals

PHOTO © STEVE EVANS

Nearly every valley in Bhutan has a swiftly flowing river or stream, fed either by the perennial snows, the summer monsoon or both.

The north-south rivers are the larger rivers running from the highest mountains of the country down to the lowlands near the Indian border. The second main category of rivers, designated as the east-west tributaries, include all the minor streams that flow as tributaries into the north-south rivers. These minor streams are mainly rain-fed.

In terms of water supplies to both the rural and urban areas, the east-west tributaries are of greater importance. The major rivers provide water for hydropower, while the tributaries and streams provide for all other uses with emphasis on water supply and irrigation. Sub-surface sources, in the form of springs and aquifers, provide water for domestic water supply and small scale irrigation.

There are also 2,674 glacial lakes in Bhutan, but they are mostly small and are mainly located in the remote high altitude alpine areas.

Water for Gross National Happiness

Gross National Happiness (GNH) is the developmental philosophy for social and economic revisions toward implementation and institutionalization of the belief that development should promote happiness as its primary value.

Equal importance must be placed on socio-economic development, spiritual, cultural and emotional needs of the people. GNH has become the philosophical foundation for the policy making process and implementation in Bhutan. Two of the four pillars of GNH are:

- Sustainable and equitable socio-economic development; and
- Conservation of the environment.

Various hydropower plants in Bhutan generate a total of around 1,490 megawatts of electricity thus boosting the socio-economic status of the people of Bhutan through revenue generation and creating employment.

With more than 60 percent of the Bhutanese populace engaged in agriculture, environmental conservation is valued widely. It is commonly believed that irresponsible activities in nature will lead to negative and therefore unhappy outcomes.

Most Bhutanese accept the fact that the environment should be maintained for future



Wetlands in Bhutan are under increasing pressure from unplanned development

PHOTO © AHINSA JAIN

The proportion of people without access to safe drinking water declined from 55 percent in 1990 to less than 12 percent in 2008

generations, thus limiting severe environmental degradation. Catchment areas are well conserved with 72 percent forest coverage minimizing the risk of losing natural water sources.

The proportion of people without access to safe drinking water declined from 55 percent in 1990 to less than 12 percent in 2008. The Millennium Development Goal of reducing those without access to safe drinking water by half by 2015 has, thus, already been achieved in Bhutan where 88 percent of the rural population and 98 percent of urban people in the country now have piped drinking water.

Keeping an eye on climate disruption and development demands

Bhutan abundant water resources face pressure from the new, complex and invasive dynamics caused by population growth and socio-economic development.

Wetlands in Bhutan are under increasing pressure from unplanned development, disturbances and lack of awareness among the general public leading to the loss of integrity of the wetland ecosystem.

Even though there are no aggregated data to make an unambiguous demonstration, there is a strong perception, backed by a number of informal reports that Bhutan is experiencing a drying up of some streams and creeks with the disappearance of their associated marshes and swamps.

This change, to be further confirmed, could already be an impact of climate change. Erratic rainfall patterns and the associated hydrological flows will have a huge impact on the overall water resource system in the country.

Although more than 90 percent of the Bhutanese population have access to safe drinking water, the sustainability of the urban water supply system and functionality of existing rural water supply schemes is one of the main challenges.

Analysis of the comprehensive rural water supply scheme in 2009 revealed that 31 percent of the rural schemes are non-functional due to various factors.

The outburst of some of the glacial lakes from time to time has resulted in enormous flash floods and damages downstream.



Forrestry officials meet with local citizens. Bhutan's constitution stipulates a minimum 60 percent forest cover in the country at all times

PHOTO © AHINSA JAIN

Conservation strategies

The Royal Government of Bhutan has maintained a holistic view of the continuity between climate change adaptation, environmentally sustainable development and enhanced resilience as development themes that enhance our progress toward the Millennium Development Goals.

And in doing so, it is critical to enable closer cooperation among policy-makers, scientists, engineers, economists, water managers, decision-makers, local communities and other stakeholders. Climate change is a profound challenge, but it also presents us with opportunities to invent strategies and action plans to address the pertinent issues for the well-being of our societies.

The strategies and action plans in Bhutan are developed through a series of multi-stakeholder consultative meetings with all the key stakeholder agencies in Bhutan, and also with separate meetings with representatives from regional and international organizations.

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These challenges will have to be effectively addressed through appropriate policies, acts and regulations. Further public education and awareness, stakeholder participation and well designed development programmes with efficient and coordinated management institutions are important.

These are all envisaged and carried out under the Integrated Water Resources Management (IWRM), a systematic process for sustainable development, allocation and monitoring of water resources.

In Bhutan Water Vision, IWRM has been defined as a process: "Promoting coordinated de-

velopment and management of water resources to maximize the economic and social welfare in an equitable manner without compromising the sustainability of the vital ecosystems".

The Royal Government of Bhutan is also promoting a Water Safety Plan as a tool to consistently ensure the adequacy and safety of drinking water supply through comprehensive risk assessment and management approach from catchment to consumers.

The Constitution of Bhutan stipulates that the country must maintain a minimum of 60 percent forest cover at all times. ■

The voice of a water messenger

Can music help bring water and sanitation to the urban poor? **Karun Koernig**, Head of Operations, Water is Right Foundation, talks to the German star **Rolf Stahlhofen**, a dedicated UN-HABITAT Messenger of Truth



Mr. Stahlhofen performing live at World Water Day in Cape Town, South Africa

PHOTO © K. KOERNIG

A young mother wakes up early to trudge to the nearest community water source. Carrying her precious and heavy cargo home on head, she is among the world's 1.2 billion people without access to piped drinking water.

Once home she'll use the water for cooking, bathing, washing, and of course drinking. And although she cannot be certain that it won't infect her children with typhoid, polio, hepatitis, or diarrhea, she doesn't have a choice but to take the risk. And then she will simply throw the used water into the contaminated, stinking rivulet of effluent flowing past her door and that of all the neighbours.

It is the situation of this young mother, and the many millions on our planet who lack ac-

cess to water, which has motivated German pop-soul singer Rolf Stahlhofen to tackle this crisis head on.

For Stahlhofen, "humanity has progressed to the stage where something as basic as water must be seen as a human right, with the same burning urgency as food, shelter and or security."

Rolf Stahlhofen rose to fame in the 1990s through his co-leadership of the double platinum German band Söhne Mannheims (Sons of Mannheim). But for Rolf the fame and fortune soon lost their shine, and he became impatient with the artistic strictures, searching for creative outlets with a greater depth of meaning.

Time for a change

By 2003 this impulse had yielded a new solo album *Zeit was zu Ändern (Time for a Change)*, the title track of which criticizes our self-perception of powerlessness to make positive change in the world.

"I was tired of people talking the talk but not walking the walk, and with *Time for a Change* I wanted to challenge people to get motivated to act on the things they saw needed changing," says Stahlhofen. "But what really happened is that I ended up motivating myself."

What came next was an unlikely twist of events, which combined disparate strands of the singer's life story into a new career path as a UN-HABITAT Messenger of Truth for Water. ▶

Concerts raised millions of dollars to provide water treatment facilities for the victims of the 2004 tsunami in Thailand and Sri Lanka, and later those of the 2010 Haiti Earthquake

Rolf grew up in Saudi Arabia, Algeria and Nigeria, travelling with his father, a civil engineer, who worked on road construction. Living in the water poor regions of the world, Rolf's father would slap his wrist whenever he wasted water. "It was a lesson I will never forget, says Stahlhofen. He reminded me that the people in the countries we lived didn't have that easy access to water, and that water is not something you play with."

It is this well of experience which Rolf would draw on when, following his solo album, he had developed the experience and connections to embark on his humanitarian career.

Stay human

In the ensuing years, Rolf organized a major benefit concert to fund the construction of solar powered water wells in Rwanda, Ethiopia, and Eritrea. This project benefitted 40,000 people, which meant that each person attending the concert provided one person across the world with access to water.

Other concerts would raise millions of dollars to provide water treatment facilities for the victims of the 2004 tsunami in Thailand and Sri Lanka, and later those of the 2010 Haiti Earthquake. It was on the record of his humanitarian work that UN-HABITAT recognized Rolf Stahlhofen as a Messenger of Truth.

Back home in Germany, Rolf had become a highly sought after gala act, performing for many of the large-scale industrialists in Germany and throughout Europe.

"My message to them was always that there is nothing wrong with making a profit, but you must give something back," says Stahlhofen. "The strength of music is that it reaches people on an emotional level, on a human level. I always say whatever your position in life, stay human, and by that I mean don't forget your humanity."

One story that Rolf likes to recall is the impromptu donation of EUR 50,000 by a



Stahlhofen visiting a Cape Town slum with safe water in hand

PHOTO © K. KOERNIG

thrilled executive of software giant SAP on stage during one of his benefit concerts.

It was such positive feedback that emboldened Rolf to create the Water is Right Foundation to channel his efforts and to enter into active partnership with UN-HABITAT's Water and Sanitation Programme.

"We agreed that Rolf would write a water themed song for UN-HABITAT, and that he would launch it at World Water Week in Cape Town," says Andre Dzikus, Chief of Section in UN-HABITAT's water programme. "This is an example of the kind of cooperation UN-HABITAT needs, to bring attention to the urgent state of water and sanitation for the urban poor."

Water is a right

Arriving in Cape Town with an entourage of 22 band members, technicians, and media, Rolf took World Water Week by storm, with multiple performances of his newly minted water hymn, *Water is Life*. The result of his efforts was the donation of 50 water treatment plants, which would be the kick-off project for his newly established Water is Right Foundation.

"I really wanted to work through UN-HABITAT on getting the water treatment plants to where they are needed," he says. "I need partners on the ground who I can trust to be 100 percent transparent, so that I can feel comfortable in asking my fellow musicians, and more importantly, prominent clients to donate time and money."



Rolf Stahlhofen in India representing UN-HABITAT as a Goodwill Ambassador for Water as a Human Right

Basic urban services such as disease and pollutant free water, along with the piping to bring it to us and to drain the waste, is something that many of us take for granted

The initial donation is more than enough to meet the drinking water demands of the 100,000 people in Asia identified by UN-HABITAT as recipients of the plants. Dzikus of UN-HABITAT says: "We will integrate these small scale plants into existing projects where they are most suitable and the need is the greatest, for example in post-disaster environments, or communities cut off from piped water supply."

Sanitation is dignity

Through his partnership with UN-HABITAT, Rolf has also learned a lot more about the topic, expanding his understanding of the role of wastewater as a vector of disease for many of the world's urban poor.

"I now realize my idea of water as a human right must also encompass sanitation," says Stahlhofen. "This word is a bit bureaucratic, but it basically means making sure human waste doesn't turn into human disease. While I was recording *Water is Life* in Kenya, I visited some of UN-HABITAT's water and sanitation projects in the slums of Nairobi. I now see how important sanitation is for promoting human health and dignity."

Basic urban services such as disease and pollutant-free water, along with the piping to bring it to us and to drain the waste, is something that many of us take for granted. However, billions of the urban poor have no such services. This fact is often put down to the high cost of infrastructure relative to the income level of their communities.

With most average daily incomes being under USD 2 a day, it is clear that traditional municipal financing of piped water and sewerage will remain a steep challenge.

More partners, more solutions

That is why Rolf's Water is Right Foundation is actively looking for partners with solutions that can be sustainably financed by serving the urban poor. The initial deployment of the donated water treatment plants will be the first among many technologies and techniques tested by the foundation.

However, both Stahlhofen and Dzikus of UN-HABITAT are agreed that a focus on technology is not enough. For them it is also important to create a new ethic in a society whereby the dignity and humanity of each person is guaranteed by the right to water and sanitation.

If all goes well, Rolf Stahlhofen plans to launch a global Water is Life concert tour in which he will invite famous national musicians to perform in benefit of improving water and sanitation conditions in their country.

He has also received commitments from internationally renowned bands such as UB40, Gentleman, Simple Minds, Mike and the Mechanics, and Joe Cocker to perform on the tour. Given his record of past achievements, he has every chance of making this one a success as well.

Let's hope so for the sake of the millions of urban poor who aren't yet safe from the diseases that access to clean water and sanitation can so easily prevent.

The song, *Water is Life*

You know there would be nothing without water
And no kids would play in the summer rain
Well you know there would be no love without water
No tears to cry to wash away the pain

I know no one would be talking to each other
Cause there wouldn't be a reason to talk about
Talk about life and love and laughing at each other
So put hands up high, confess and sing out loud

Water ... is Life
And Life ... is Water
Water ... is Love
Love ... is Like Water

Water is a Human Right
You Say Water is a Human Right

If you wanna think Global you gotta act Local
Water for everyone!

The threat to Senegal from climate change

In this interview, the mayor of the northern Senegalese coastal city of Saint Louis, **Cheikh Bamba Dièye**, says climate disruption and frequent extreme weather events are among the major concerns of his community who have lived at the estuary of the Senegal River in harmony with nature for centuries



The Saint Louis community have lived at the estuary of the Senegal River in harmony with nature for centuries

PHOTO © UN-HABITAT

How is climate change threatening your city?

Climate change is the major threat to our future – rising sea levels, coastal erosion and more frequent extreme weather events such as floods. The major risk is that the sand strip off the estuary, known as Langue de Barbarie, might disappear altogether. This is very worrying because it protects the city against tidal waves, which could add to coastal erosion and contaminate our freshwater resources. The strip is also the heart of our fishing activities, tourism, and the home of a natural park. All contribute significantly to our economy. Many livelihoods are at stake.

What are you doing about it?

We are taking environmental management measures thanks to the help of UN-HABITAT's Cities and Climate Change Initiative. The climate initiative launched in April 2010, is built on four pillars: (1) advocacy, political dialogue and changes in public policies; (2) development and deployment of methodologies; (3) implementing climate change mitigation and adaptation schemes; and (4) the management and dissemination of knowledge, including through academic institutions. Our urban development strategy is inspired by a wide range of international expertise, and UN-HABITAT helps with technical and institutional capacity building. This involves training and awareness raising as well as sharing of experiences and best practices through national, regional and global networks. The initiative also assists political dialogue between local and national government.

How did it start?

UN-HABITAT procured a mission by the Dutch engineering company, ARCADIS in mid-September 2010 to assess the sand strip problem. The purpose was to survey the natural dynamics at work and the risks associated with ongoing changes, and then develop medium-to long-term scenarios mapping out the constraints and any opportunities for the city. Cooperation links with UN-HABITAT are only going to become closer with the schemes scheduled for 2011 and 2012. Further to recommendations made at a December 2010 international forum on climate change and local governance, UN-HABITAT has also procured a grant from the Government of Japan to build social housing away from the shoreline for a total 150 households as part of adaptation and resilience efforts in the face of climate change.



Cheikh Bamba Dièye, Mayor of Saint Louis

PHOTO © EDDY GRAEFF

“We are looking to bring the central government in to assert political will and reconfirm the natural environment as a matter of national priority. This means we must deploy an appropriate institutional framework for environmental management.”

Cheikh Bamba Dièye
Mayor of Saint Louis

How are you working with the central government?

We are looking to bring the central government in to assert political will and reconfirm the natural environment as a matter of national priority. This means we must deploy an appropriate institutional framework for environmental management. Based on international climate change pacts, we can derive a number of straightforward practical rules that can encourage individual behaviour changes. We want to incorporate environmental concerns into sector-based policies and more generally into the development process. We are introducing climate matters into the school curriculum, developing an Environmental Code in coordination with the communities.

We are seeking funding for climate change-related schemes and projects in the national budget, and also seeking to ensure climate risk forms part of strategic development policy and programme implementation.

And your key partners?

They include the Parliament (l'Assemblée Nationale), the Food and Agriculture Organization, UN-HABITAT, the United Nations Development Programme, United Cities and Local Governments Africa (UCLGA), the French and British embassies, the French Development Agency, Luxembourg's cooperation agency, the Association des Maires du Sénégal, the Municipal Development Agency, ►

Dakar City, our universities, the European Union, ARCADIS, and the cities of Lille, France and Leoben, Austria, among others. The list includes many local groups, like churches, professional bodies and others.

What about local residents?

Since 1995, the municipality has instituted a neighbourhood-based community development policy. Consultation with residents results in a comprehensive, consistent approach, whether a community makes itself heard through grassroots groups or as individual contributors to local development. Neighbourhood committees serve as intermediaries or facilitators for development, contributing to both legitimacy and grassroots mobilization. Thanks to USAID funding in 2009 a flood management scheme was implemented

“Since 1995, the municipality has instituted a neighbourhood-based community development policy. Consultation with residents results in a comprehensive, consistent approach, whether a community makes itself heard through grassroots groups or as individual contributors to local development.”

Cheikh Bamba Dièye
Mayor of Saint Louis

by Plan Sénégal, a non-governmental organization. As part of the project, embankments are built in ten exposed neighbourhoods, and a number of motorized pumps have been provided. Younger members of neighbourhood committees have also been trained in awareness raising and communication in connection with risk management.

What else?

We have developed a policy document known as *Saint-Louis 2030, a new African metropolis*. It incorporates climate matters into our city's socio-economic framework.

The 2010 forum and the resulting Saint-Louis Appeal put our city in a better position to publicize our case to an international audience and to promote networking at all levels with regard to local climate disruption management. ■



The Langue de Barbarie sand strip protects the city against tidal waves

PHOTO © EDDY GRAEFF

How Chengdu is building a bridge to the urban-rural divide

Chengdu in China has introduced a novel solution for feeding its urban population using land on the outskirts of the city ▶

By Nicholas You and Mark Takefman*



Anlong village has set aside land for city dwellers to grow their own organic produce

PHOTO © CDWAER

In Chengdu, Sichuan province (home of the Giant Panda) urbanites have found the good earth at the outskirts of the city. Anlong village, a community of about one thousand households located on the periphery of Chengdu, has set aside land for city dwellers to grow their own organic produce.

This represents an important transformation in China where historically farmers and city dwellers have had little contact with one another and the latter rarely concerned themselves with where their food came from. Learning and experiencing the connection to the land and the hard work it takes to grow crops are important lessons for China's rapidly urbanizing population.

The idea for this venture started back in 2005. The city had, at the time, recently completed the Fu & Nan River Rehabilitation project. The project cleaned up the city's mother river, setting the stage for rapid growth and modernization.

The tangible outcomes of the project, including the re-housing of 30,000 slum dwellers, were to be recognized internationally with Chengdu having been awarded the Habitat Scroll of Honour in 1998, the Dubai International Award for Best Practices in 2000, and the ICLEI Sustainable Communities Award, also in 2000.

Despite the success of the project in vastly reducing industrial and domestic emissions, an ex-post evaluation revealed a persistent level of pollution in the river. This compelled the Secretary General of the Chengdu Urban Rivers Association (CURA), Tian Jun, to pinpoint the source of river pollution coming into the city.

Looking upstream where many small to medium-scale farmers still worked the fields, she found that farm run-off contained substantial amounts of phosphorus and nitrogen, bacteria, viruses and heavy metals. She realized that a new way had to be developed to deal with this challenge as it was not feasible to build water treatment plants in such conditions. This led CURA to embark on an initiative to change the farmers' production methods from petro-chemical based farming to traditional farming methods, some of which date back thousands of years.

Starting in 2005, CURA engaged the farmers to experiment with organic farming. This was a challenge as the return to traditional and organic farming methods typically produces fewer crops during the initial first two years. However, with typical Chinese tenacity, the Anlong farmers kept to their commitment and eventually attained crop yields that matched previous output. In the interim, consumer demand for 'green produce'



Story of Gao Qing Rong

Like millions of other rural migrants all over China, Gao Qing Rong left her young child with her parents in Anlong village to go work in a factory in Jiangsu Province and send money home. During her annual visit home in 2006 she saw what CURA was trying to do with the introduction of organic farming to the area. She immediately understood the economic potential and the benefits of this kind of production both for the people and for the environment. She stayed on at Anlong and today with her family operates a thriving organic farm. Her passion is essential oils extracted from organically grown herbs and spices.

The project cleaned up the city's mother river, setting the stage for rapid growth and modernization

grew rapidly, and continues to grow rapidly, providing higher earnings and profit margins.

Organic farming, however, addressed only part of the challenge. There was still the problem of what to do with the other waste, such as grey water, methane and animal and human waste. This led CURA to work with the farmers to create wetland facilities to recycle and reuse grey water, and to build 160 bio-digesters, together with 160 composting toilets to capture

and use methane. The gas produced by the bio-digesters now covers most of the domestic energy needs in the village.

Together all these practices are reducing pollution in the river and, perhaps more importantly, they are improving the health, well-being and prosperity of the farmers. A key indicator of this new found prosperity has been the return of several children from their city jobs to Anlong to take part in the new economic opportunities and healthy lifestyle.

With the success of this pilot project, CURA now plans to expand the initiative by building an environmental advocacy and education centre to be called the Chengdu International Centre for Sustainable Living. The centre will train other farmers and help communities such as Anlong to benchmark their activities to better inform policy and decision makers. ■

**The authors: Nicholas You is Chairman of the Steering Committee of the UN-HABITAT World Urban Campaign. He is also Chairman of, amongst others, the Cities and Climate Change Commission of the World Future Council, and the Assurance Group of the Urban Infrastructure Initiative of the World Business Council for Sustainable Development. After running UN-HABITAT's Best Practices and Local Leadership Programme for over a decade, he was appointed as the senior policy and strategic planning adviser of the agency. From 2007 to 2009 he led the development and roll out of UN-HABITAT's strategic and institutional management plan. As part of that plan, he was asked in January 2009 to spearhead UN-HABITAT's World Urban Campaign. Upon his retirement from the UN in July 2010, some 50 partners representing public, private and civil society institutions worldwide elected him as chairman of the Campaign's Steering Committee. Mark Takefman is a Developmental Organizational Consultant for the Citizen Sector (i.e. non-profits, NGOs.). He works and has worked with the New World Foundation, New York, and VSO International, UK; VSO India, and VSO China. A former Executive Director for The Milkweed Foundation, a division of the TWB Center for Economic Justice, Clinton, New York, he has been involved in many volunteer activities in the US and Canada, sitting on various Community Service committees and boards.*

Climate Change

Green Development: Sustainable Buildings and Infrastructure

2-3 February 2012, Vancouver, Canada

Energy

2012 International Conference on Clean and Green Energy (ICCGE 2012)

5-7 January 2012, Hong Kong, China

Retrofitting for Energy Efficiency

31 January – 3 February 2012, Brisbane, Australia

Power & Electricity World Africa 2012

26-29 March 2012, Johannesburg, South Africa

Environment

International Conference on Environmentally Sustainable Urban Ecosystems (ENSURE 12)

24-26 February 2012, Guwahati, Assam, India

Gender

2nd Annual Women in Leadership Forum Asia 2012

20-21 February 2012, Kuala Lumpur, Malaysia

Healthcare

Healthcare India 2012

20-23 February 2012, New Delhi, India

Women's Health for the Primary Care Provider

12-14 March 2012, Paradise Island, Bahamas

Healthcare in the Middle East

27-28 March 2012, Dubai, UAE

Transport

Africa Roads 2012

28 February – 2 March 2012, Johannesburg, South Africa

To feature your events in the Calendar section, please send details to editorial@pfdmedia.com

Urban planning

Nationalism and the City

10-11 February 2012, Cambridge, United Kingdom

Driving Policy and Planning through Community Engagement

14-15 February 2012, Melbourne, Australia

International Conference on Sustainable Architecture and Urban Design 2012

3-5 March 2012, Penang, Malaysia

Water

Second Asia-Pacific Water Summit

5-6 February 2012, Bangkok, Thailand

The 27th International Conference on Solid Waste Technology and Management

11-14 March 2012, Philadelphia, USA

Water and Environment 2012: CIWEM's Annual Conference

20-21 March 2012, London, United Kingdom

Youth

23rd International Youth Leadership Conference

8-13 January 2012, Prague, Czech Republic

World Economic Forum Annual Meeting 2012

Date: 25-29 January 2012

Destination: Davos-Klosters, Switzerland

Website: www.weforum.org

Description: The population of the world not only passes 7 billion in 2013 but will be also interconnected through information technology on a historic scale. It is hubris to frame this transition as a global 'management' problem of integrating people, systems and technologies. It is an indisputable leadership challenge that ultimately requires new models, bold ideas and personal courage to ensure that this century improves the human condition. Thus, the Annual Meeting 2012 will convene under the theme, The Great Transformation: Shaping New Models, whereby leaders return to their core purpose of defining what the future should look like, aligning stakeholders around that vision and inspiring their institutions to realize that vision.

YOUTH**Youth caravan makes trip from Nairobi to Durban**

About 200 youth from Kenya and Norway travelled for two weeks as a caravan from Nairobi, Kenya to the United Nations Framework Convention on Climate Change's conference (COP-17) in Durban, South Africa. The goals of the youth caravan were to educate communities along the caravan route through music, dance and drama, and assure that world governments reach a just, ambitious and legally binding treaty to curb climate change.

WATER**UN-HABITAT extends support of water provision to 15 new cities in Eastern Africa**

UN-HABITAT has announced that it will be expanding its successful Lake Victoria Water and Sanitation Initiative to 15 more cities in Kenya, Uganda, Tanzania, Rwanda and Burundi, with the support of USD 4.2 million from the African Development Bank. The announcement came during a visit to the sites by key international government representatives to see first-hand the work in Kenya's Kisumu, Bondo and Homa Bay municipalities in the west of the country.

SLUM UPGRADING**Regional exchange forum in Senegal**

Thirty-five participants drawn from various countries from Africa recently gathered in Dakar, Senegal to discuss slum upgrading issues. Participants from DRC Congo, Cameroon, Burkina Faso, Senegal and Niger gathered for the meeting. The regional exchange forums enable participating countries to share ideas, practices and experiences that reinforce the slum improvement process. Participants attending the forum also benefited from each other's critical input as they refined country specific approaches, strategies and national action plans.

EDUCATION**Universities must play a role in sustainable development**

UN-HABITAT Executive Director Dr Joan Clos told students at the University of Nairobi that he considers universities as strategic partners in the quest for sustainable urban development. In a speech on the challenges of urbanization in sub-Saharan Africa and the role of universities, he spoke of the need to rethink our cities and to elaborate a new urban paradigm. "Universities are strategic partners for UN-HABITAT and we will cooperate with them to face the growth of urban areas and to focus on urban planning and design as a solution to improve our cities."



Ms Aisa Kirabo Kacyira, UN-HABITAT's new Deputy Executive Director

PHOTO © UN-HABITAT

UN-HABITAT appoints a new Deputy Executive Director

United Nations Secretary-General Ban Ki-moon has appointed Aisa Kirabo Kacyira of the Republic of Rwanda as Deputy Executive Director and Assistant Secretary-General for UN-HABITAT. She succeeds Ambassador Inga Björk-Klevby of Sweden.

Kirabo previously served as Governor of Eastern Province, the largest province in Rwanda with a population of 2.5 million, and as Mayor of Kigali City (2006 - 2011). It was under her leadership that the Rwandan capital Kigali won the UN-HABITAT Scroll of Honour Award in 2008.

Prior to her position as Mayor, Kirabo was a Member of Parliament on the standing committee responsible for land use and management, settlements and the environment. She actively participated in the legislative and oversight functions of parliament in addition to community mobilization.

Kirabo brings to this position a broad knowledge and experience of over 15 years in senior management and strategic leadership in government and non-governmental institutions.

In her new role, Kirabo will assist Executive Director Dr Joan Clos, in the overall management of UN-HABITAT to achieve its mandate. She will support Dr Clos in advancing the key reviews currently underway at UN-HABITAT, including the review of the agency's strategic priorities in the run-up to the Habitat III conference in 2016.

After earning a bachelor in Veterinary Medicine, Kirabo, studied at James Cook University, Australia, where she gained her Masters in Veterinary Science in Animal Production and Economics. She is currently pursuing an MBA in the School of Finance and Banking, Rwanda/Maastricht School of Management, Netherlands. She is 46 years old, married and has four children.

"Ms. Kirabo brings to UN-HABITAT the experience of someone who knows the daily urban challenges which citizens and governments are facing," said Dr Clos

HUMAN RIGHTS**UN-HABITAT hosts international meeting on forced evictions**

More than 50 participants converged in Nairobi to exchange views, knowledge and ideas on the future role of UN-HABITAT with respect to preventing, monitoring and assessing the impact of forced evictions globally. Drawn from across the world, the participants included experts, observers, representatives of governments, and representatives of Permanent and Observer Missions to UN-HABITAT.

Organized in close collaboration with the Office of the High Commissioner for Human Rights, the meeting sought to shape and adopt common strategies to address the problem of global evictions and ways to promote the full and progressive realization of the right to adequate housing. The experts of the global housing and human rights community who had gathered at the UN-HABITAT headquarters were asked to elaborate on the future role of UN-HABITAT in the area of housing rights, including the right not to be forcibly evicted.

Experts at the meeting affirmed their readiness to provide UN-HABITAT with recommendations on the issue of organization's role in this field in the context of the Global Housing Strategy to the year 2025 and within the framework of UN-HABITAT's Adequate Housing for All Programme and the UN Housing Rights Programme. These recommendations are based on information and experience that experts and their organizations attending the meeting have accumulated over many years, in many capacities, and with many varied constituencies from Asia, Latin America, Africa, Europe and North America.

A number of formal and consensus-based observations and recommendations to UN-HABITAT were presented at the end of the meeting. The experts recognized UN-HABITAT's progressive engagement on and commitment to socially inclusive and sustainable urban development and slum prevention and upgrading. It was suggested that UN-HABITAT has a unique role to play in its engagement with governments at both national and local levels and with other state actors, development actors, and multinational actors.

While reaffirming that the practice of forced evictions, and the lack of respect for the right to adequate housing, is a gross violation of human rights, the experts called upon UN-HABITAT to articulate its human rights mandate as a UN organization, especially the right to adequate housing and the right not to be forcibly evicted.



Participants at the International Expert Group Meeting on Forced Evictions

PHOTO © UN-HABITAT

URBAN DEVELOPMENT**Malawi holds its second National Urban Forum**

Malawi's Deputy Minister of Lands, Housing and Urban Development, Christopher Ngwira, officially opened the National Urban Forum in the capital Lilongwe to mark the start of a two-day meeting on city development in the country. The meeting, hosted by the Government of Malawi and UN-HABITAT, drew some 200 representatives from government, the private sector, NGOs, informal settlements, civil society and academia. Participants travelled from as far away as Australia and Sweden to take part.

EMPLOYMENT**Livelihoods project begins for vulnerable groups in Mogadishu**

The European Community and UN-HABITAT have signed a grant agreement for the implementation of a new three-year project entitled Sustainable Employment Creation and Improved Livelihoods for Vulnerable Urban Communities in Mogadishu, Somalia. Local communities in Mogadishu, particularly youth, women, internally displaced people, ex-combatants, and other marginalized groups, generally do not have the chance to participate in decision-making processes related to the provision of basic services and public infrastructure.

WATER**UN-HABITAT provides water for Kenya slum residents**

UN-HABITAT and the Embassy of Malta opened a new water supply and treatment plant to provide clean, affordable drinking water for some 4,000 people living in an informal settlement not far from the agency's global headquarters in Nairobi. Until the plant was opened, the Huruma community had drawn their water supplies from a pipeline running through a forest adjacent to the UN Africa headquarters.

OBITUARY**The passing of a colleague**

UN-HABITAT announced the sudden passing of its Habitat Programme Manager in the Eritrea, Eyob Kahsai, who has served since 2004. He died on Saturday 1 October 2011. Dr. Clos said in a statement: "It is with deep sorrow that we learn of Eyob's passing. An excellent and dedicated staff member, he will be greatly missed by the United Nations family in Eritrea, and by his colleagues at UN-HABITAT. Our thoughts and prayers go out to his family." Born in 1958, Eyob is survived by his wife Tiebe and their three children.

URBANIZATION**India to step up funding to UN-HABITAT**

The Government of India has said it will increase its funding to UN-HABITAT. The announcement was made after Executive Director Dr. Joan Clos held talks with Kumari Selja, India's Minister of Housing and Urban Poverty Alleviation and Culture. As part of this new priority partnership, UN-HABITAT will strengthen its presence in India through enhanced collaboration with the Government of India.

URBAN DEVELOPMENT**Booyoung group commits USD 3 million to UN-HABITAT**

UN-HABITAT has signed an agreement with the Booyoung Group of the Republic of Korea, with the construction-centred corporation providing the agency with USD 3 million over the next 10 years to promote urban development and habitat improvement in Africa. The agreement was signed in Seoul by UN-HABITAT Executive Director Dr. Joan Clos, and Dr. Joong-keun Lee, Chairman of Booyoung Co. Ltd. Dr. Clos expressed his gratitude for the generous contribution, saying the funding would be used to improve the situation of rapid and unplanned urbanization in Africa, as well as promote comprehensive sustainable urban development.

DISASTER RISK REDUCTION**Myanmar shows strong commitment to disaster risk reduction**

Myanmar, a country prone to natural hazards, has shown positive progress in the areas of early warning, emergency preparedness and responses in recent years. Now, the government is stepping up cooperation with global and regional partners to reach its long-term target of becoming a disaster resilient country. This was a key message from the commemorative event on the occasion of the International Day for Disaster Risk Reduction held in Myanmar's capital Nay Pyi Taw.

HOUSING**Australian government and UN-HABITAT project benefits 3,785 IDPs in Sri Lanka**

The Australian Government, in partnership with UN-HABITAT, has assisted 3,785 returnee families in reconstructing or repairing their damaged houses in the districts of Vavuniya, Mullaitivu and Killinochchi under the 'Shelter Support to conflict Affected IDPs in Northern Sri Lanka' Project. To mark the completion of the 18 month, USD 9.6 million project, the Australian High Commissioner to Sri Lanka, Kathy Klugman, visited Kallaru village in Killinochchi District, to officially hand over 100 houses constructed under the project.

CLIMATE CHANGE**Nordic funding to enhance resilience to climate change in coastal Sri Lankan cities**

In a bid to enhance resilience to climate change in coastal cities in Sri Lanka, the Norwegian Institute for Water Research (NIVA) together with its national partners, the University of Moratuwa, UN-HABITAT, Batticaloa Municipal Council (BMC) and Negombo Municipal Council (NMC), have initiated a new project entitled 'Climate Resilient Action Plans for Coastal Urban Areas, Sri Lanka'.

Funded by the Nordic Climate Facility, the project prepared in partnership with the Ministry of Environment will be implemented in the municipal council areas of Batticaloa and Negombo.

"The knowledge and lessons learnt from this project will benefit Sri Lanka's other coastal cities in developing Climate Resilient Action Plans," said Laxman Perera, UN-HABITAT Programme Manager for Sri Lanka.

To mark its inception, an inauguration workshop was held on climate change adaptation in Sri Lanka, with Anura Priyadarshana Yapa, the Minister of Environment, attending. Practitioners on climate change, environment and urban development from stakeholder agencies and civil society participated at the workshop to discuss climate resilience initiatives, strategies and action plans.

Professor Harsha Ratnaweera, Director of International Projects of NIVA stated that, as many coastal cities in Sri Lanka had experienced devastating climate related impacts during the recent years, this initiative will focus on the most urgent needs of the coastal cities in adapting to climate change and mitigating risks, and the severity of impacts through disaster risk management.

About 70 percent of Sri Lanka's urban population and 80 percent of its economic infrastructure networks are concentrated in coastal cities, which are highly vulnerable to climate change impacts such as sea-level rise, flooding, salinization of water resources, storm surges, cyclones and droughts. These impacts disproportionately affect urban poor communities, who are forced to live in the most vulnerable areas.

Professor P.K.S.Mahanama, Dean of the Faculty of Architecture of the University of Moratuwa, said that the coastal cities of Batticaloa and Negombo have been particularly vulnerable to climate related natural disasters. Batticaloa experienced the largest flood recorded in 100 years in December 2009 to January 2010 causing loss of life and property while significantly damaging the emerging tourism industry.



H.E. Ms. Hilde Haraldstad, Norwegian Ambassador to Sri Lanka speaks at the launch PHOTO © UN-HABITAT



With rapid urbanization urban planning is important in a city like New Delhi

PHOTO © UN-HABITAT

URBAN PLANNING**New Delhi mayor welcomes new planning guide**

Delegates gathered in New Delhi to discuss the preparation of a globally relevant guide on urban planning for mayors and elected local government officials. Over two days, a group of mayors, city planners and urban academics met to agree on ways in which local government elected officials can use urban planning as a means of reducing poverty, enhancing local economic development and making cities more sustainable and liveable.

"Today New Delhi has overtaken Mumbai as the largest city in India with a population of just over 21 million people," said Mayor Rajni Abbi to inaugurate the meeting. "Daily, I am confronted with the reality of lopsided planning which ignores the poor living in rapidly growing neighbourhoods at the margins of the city. While it led to prosperity and better living conditions for city residents living nearer to the core, outlying neighbourhoods were simply ignored. Unfortunately, this has led to growing levels of urban poverty."

The meeting was organized after the mission of UN-HABITAT's Executive Director, Dr. Joan Clos, to India, during which commitments to increase collaboration between the agency and the Government of India were made.

"The sad reality is that the vast majority of the world's urban growth is happening in cities of the developing world in which there is little or no planning happening," said Dr. Vinay Lall, Director of the Society for Development Studies. "By not planning for tomorrow, we are condemning ourselves to increasing congestion, deteriorating health conditions and growing slums."

The 'Quick Guide on Urban Planning for Mayors' is being developed as part of a series which will be expanded to target other key groups such as urban planners, community groups, and the private sector. The series has been designed to support better approaches to urban planning made relevant to the needs of the world's rapidly growing cities, both today and in the long-term. As part of its development, it will be tested in several countries and it is envisaged that it will be prominently used to raise awareness and serve as a learning resource for city managers and stakeholders.

CLIMATE CHANGE**Urban Climate Change Adaptation Course concludes in South Korea**

Urban planners and decision-makers from 10 Asian countries concluded a course on cities and climate change adaptation. The course, which focused on vulnerability assessment and climate change action plans helped cities improve their planning and response to climate change. Tools developed by UN-HABITAT's 'Cities and Climate Change Initiative' such as Developing Local Climate Change Plans, and by the Institute for Housing and Urban Development Studies such as Climate PRO, formed the basis for the course.

URBAN MANAGEMENT**UN-HABITAT and Gangwon Province sign partnership agreement**

Building on its existing collaboration with the International Urban Training Centre (IUTC) in the Korean Gangwon Province, UN-HABITAT's Executive Director, Dr. Joan Clos signed a new five year agreement with the Governor of Gangwon Province, Moon-soon Choi, to continue the agency's support to the centre. UN-HABITAT has been supporting IUTC since the centre's inauguration in 2007. During this period, almost 20 regional training courses, ranging from 3 - 20 days, have been jointly organized for participants drawn from the Asia region.

WORLD HABITAT DAY**Thailand celebrates World Habitat Day with slum dwellers' march**

World Habitat Day was marked by a march to the United Nations building in Bangkok, Thailand by some 2,000 slum dwellers supported by the Four Regions Slum Network (FRSN) and Leaders and Organizers of Community Organizations (LOCO) in Asia. They submitted a petition to the Secretary-General of the United Nations on the problem of homelessness as well as the impact on urban poor communities stemming from climate change.

SECURITY**UN-HABITAT signs new safer cities agreement with Myanmar**

UN-HABITAT has signed a new safer cities agreement with the Union Government of Myanmar designed to provide disaster resilient and safer settlements in the southeast Asian nation. Director General, U Aung Win of the Department of Human Settlements and Housing Development (DHSHD), Ministry of Construction, represented the government. He signed a MOU on the Myanmar Programme for Safer Settlements and Urban Issues with Toshiyasu Noda, Director of the UN-HABITAT Regional Office for Asia and the Pacific.



Historic Bridgetown and its Garrison



A Barbadian Gem

On Saturday, June 25, 2011 the people of Barbados awoke to the news that their capital city, Bridgetown had been inscribed on the UNESCO World Heritage List. Barbadians celebrated by journeying along the same serpentine streets into 'town' as their ancestors had done since the historic town's establishment - a Saturday morning tradition for almost four centuries.



Located on Barbados' sheltered southwestern coast, Historic Bridgetown and its Garrison, established in 1628 as one of the earliest fortified port towns in the Caribbean network of military and maritime-mercantile outposts in the British Atlantic, quickly became an entrepôt for the export of sugar, as well as for goods and enslaved persons sold in the trans-Atlantic slave trade.

With its distinctive 17th century organic street layout, unlike any other Caribbean territory or the English Americas, Historic Bridgetown remains inextricably linked by the Bay Street corridor to St. Ann's Garrison, circling around Carlisle Bay, where many ships which made Bridgetown their first port of call found safe harbour after the grueling trans-Atlantic journey.

Historic Bridgetown and its Garrison fulfills World Heritage criteria (ii), (iii) and (iv), through its retention and evolution of administrative, commercial, cultural and residential functions within the colonial and post-colonial urban space. Its cosmopolitan culture drawn largely from Africa and Europe, produced outstanding ensembles exemplified by St. Ann's Garrison, colonial warehouses and dock facilities, including the Bridgetown "Screw" Dock, the only such facility remaining in the world.

As only the second cultural heritage property inscribed in the English-speaking Caribbean, the Government is especially proud that its first nomination addresses several of the geographic, historic and thematic imbalances within UNESCO's World Heritage List while speaking to Barbados' multifaceted contribution to the heritage of humanity.



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YOUTH**UN-HABITAT assist urban youth at risk in the region**

UN-HABITAT joined the Government of Catalonia in Spain at a landmark conference aimed at helping create safer cities in Latin America by assisting urban youth at risk. In an inaugural address, Felip Puig, Interior Councillor of the Government of Catalonia, said he was delighted that “the Catalan police participate in a UN-HABITAT project with countries in Latin America which enables us to exchange experiences, to capture knowledge, strengthen relationships and consolidate our position as a police referral.”

POVERTY**Poor households in the Dominican Republic to benefit from increased accountability in social sectors**

The World Bank has approved two loans totalling USD 90 million for the Dominican Republic to enhance performance results in the social sector, which will benefit 600,000 low-income households, as well as improve the response capacity of key institutions in the management of future disasters. These are a part of a series of loans that seek to enhance human capital, mainly in education and health, and to improve transparency and quality of public expenditure through a performance-based system.

WATER**IDB supports Jamaica's water supply and energy efficiency**

The Inter-American Development Bank has approved two loans totalling USD 153 million for Jamaica, including USD 133 million to improve water supply in the Kingston metropolitan area and USD 20 million for energy efficiency and conservation. “The IDB is a strong partner of Jamaica, working in close cooperation with the country's priorities,” said Gerard Johnson, IDB Regional Caribbean Group Department Manager.

HOUSING**Housing, shelter and climate change tops region's agenda**

Ministers and senior officials from Latin America and the Caribbean MINURVI group brought climate change and housing issues to the top of their agenda in preparation for a series of major international and regional meetings. The group of ministers in charge of housing and urban development known by its Spanish acronym, MINURVI, flagged the issues at their 20th General Assembly in Asuncion, Paraguay.

FLOOD RELIEF**World Bank disburses USD 50 million to El Salvador**

The World Bank has disbursed USD 50 million to help El Salvador deal with the emergency caused by the tropical depression that battered the country, displacing thousands of people from their homes and causing USD 840 million in damages.

Tropical Depression 12-E is one of the most damaging natural disasters to have hit El Salvador in decades, flooding 10 percent of the country and forcing more than 50,000 people out of their homes. According to Salvadoran President, Mauricio Funes, preliminary estimates indicate that the total damages represent 4 points of GDP.

The USD 50 million, which were disbursed immediately following the declaration of a State Emergency, are part of the Disaster Risk Management Policy Development Loan Catastrophe Deferred Drawdown Option (Cat DDO), approved by the World Bank's Board of Directors on February 2nd, 2011, and ratified by El Salvador's Legislative Assembly on April 10th, 2011. The amount represents an immediate source of liquidity for the Salvadoran Government and complements their efforts to cover the most urgent needs of thousands of victims and maintain the provision of public services.

The Disaster Risk Management Development Policy Loan is one of the operations established in the World Bank's 2010-2012 Country Partnership Strategy to help the country address its vulnerability to natural disasters. In addition, support to El Salvador's Disaster Risk Management Program has been provided through other investment and technical assistance projects.

The USD 80 million ‘Strengthening Local Government Project,’ which seeks to improve the capacity of municipalities to expand public service provision and improve disaster risk management, and The ‘Seismic Risk Probabilistic Modeling Project for San Salvador's Metropolitan Area’ which aims to increase the country's institutional capacity to assess seismic risks, are designed to implement measures to reduce vulnerability.



The flooding forced more than 50,000 people out of their homes in El Salvador

PHOTO © XTREMESV



The programme includes a series of pilot projects in Pereira and other vulnerable municipalities PHOTO © YUSSEF90

DISASTER RISK REDUCTION**Colombia tackles its vulnerability to natural disasters**

Colombia will reduce its vulnerability to natural hazards and climate change with the help of a USD 120 million loan from the Inter-American Development Bank (IDB).

“The programme will help the Colombian government protect the country's most vulnerable populations,” said Sergio Lacambra, IDB project team leader. “Incorporating risk management and adaptation to climate change in the national development plan will be an important contribution to sustainable development in Colombia.”

Colombia is one of the most vulnerable countries to natural disasters in Latin America, with more than eight out of ten Colombians located in disaster-prone areas and 87 percent of the country's GDP at risk from such events. More than 150 natural disasters have struck Colombia over the past 40 years, claiming more than 32,000 lives and affecting more than 12 million people.

The project will advance reforms in the areas of risk identification, risk reduction, and disaster management. The reform process will also improve coordination among key government institutions during the emergency, rehabilitation, and reconstruction phases.

The programme also includes a series of pilot projects in Pereira and other vulnerable municipalities to strengthen their ability to assess natural disaster risks. Furthermore, it will ensure the physical integrity of buildings such as hospitals, schools, and government offices by changing Colombia's regulations for earthquake-resistant construction.

This is the first operation in a policy-based loan programme. Under these loans, which provide governments with the flexibility to fund priority programmes, disbursements are made after achieving certain goals agreed upon between the IDB and the borrowing country.

CLIMATE CHANGE**Farmers in Uruguay to confront the effects of climate change**

The World Bank is to provide a loan of USD 49 million to support Uruguayan farmers in adopting environmentally sustainable practices to improve the resilience of their production systems in response to the effects of climate variability. The Sustainable Management of Natural Resources and Climate Change Project will benefit 16,000 Uruguayan farmers through co-financing of land projects to improve their production systems, the creation of a National Agricultural Information System and institutional strengthening and training.

SUSTAINABLE ENERGY**Barbados to promote sustainable energy sources**

The Inter-American Development Bank is providing a USD 70 million loan to help Barbados reduce its dependence on fossil fuels by diversifying its energy matrix, promoting sustainable energy sources, and supporting power saving efforts. The operation, the second in a series of two programmatic loans for the sector, will support policy and legislation moves aimed at promoting renewable energies as well as the rational and efficient use of fossil fuels. As a result, Barbados is expected to reduce its electricity consumption by 19 percent by 2029.

HEALTH**Chronic diseases weaken health systems in Caribbean**

Heart disease, cancer, strokes, obesity, diabetes, and other non-communicable diseases are the leading causes of death in the Caribbean and represent a rapidly increasing share of total health expenditure for countries in the region, according to two reports by the World Bank. Much of the rise in chronic diseases in the Caribbean can be traced to individual risk factors such as poor diet, physical inactivity, tobacco use, and alcohol abuse.

RENEWABLE ENERGY**IMPSA gets IDB loan to finance Latin America wind energy investment plan**

IMPSA, one of the world's leading renewable energy companies, will get a USD 150 million loan from the Inter-American Development Bank to help finance its plans to expand wind energy generation in Latin America. The IDB loan will go to IMPSA's Brazilian subsidiary Wind Power Energia S.A. to support the construction of an estimated four wind farms, three in Brazil and one in Uruguay, which will add 546 megawatts of wind energy capacity in the region by 2014.

PLANNING**Kosovo learns key sustainable development principles**

A group of 19 representatives from Kosovo Municipalities, the Ministry of Environment and Spatial Planning, the Association of Kosovo Municipalities and Municipal Spatial Planning Support Programme (MuSPP) of UN-HABITAT visited Swedish municipalities during September. The main purpose of the study tour was to become familiar with the Swedish planning system, and practical implementation of sustainable development principles.

TRANSPORT**Sarajevo invests USD 22 million in urban road infrastructure**

The EBRD is lending Bosnia and Herzegovina USD 22 million which will finance the widening of two key road sections running through Sarajevo city. The loan will help finance the works on sections of the 12th Transversal Road (0.9 kilometres) and Southern Longitudinal Road (2.4 kilometres). The road development project will help relieve traffic congestion, reduce emissions and noise thus improving the living conditions in the area as well as improving the accessibility of Sarajevo.

INTERNAL DISPLACEMENT**Azerbaijan to assist a further 185,000 internally displaced people**

About 185,000 internally displaced persons (IDPs) in Azerbaijan will have better access to infrastructure, services, housing conditions and livelihood opportunities with help of a new project to provide better living conditions and more employment opportunities. A World Bank loan of USD 50 million will finance the majority of the Azerbaijan IDP Living Conditions and Livelihoods Project with the goal of improving living conditions and increasing the economic self-reliance of the beneficiary IDPs.

MINORITY PROTECTION**Council of Europe minorities monitoring body publishes report on Slovenia**

The Council of Europe has released its findings after a visit to Slovenia in November 2010 and makes recommendations to the government on how to improve protection for persons belonging to national minorities. The Advisory Committee commends several initiatives to tackle the root cause of some of the main problems facing Roma, particularly in education and housing. It welcomes the adoption in 2007 of the Act on the Roma Community as providing a more solid legal basis for improvements, but says that many Roma continue to live in substandard conditions. Opportunities for Roma to take part effectively in public affairs remain insufficient both at local and at central level.



The ruins of the ancient castle in Novobërdë/Novobrdó provided a stunning starting point for the tour

PHOTO © SARAH WORKMAN

CULTURE**Culture meets sport in Kosovo**

The synergies of sports and culture met during a yearly cycling tour in central Kosovo, at the end of September. Over 500 cyclists participated in a promotion of cultural and natural heritage combined with a healthy way of getting around. Cyclists pedalled their way from the foot of the ruins of an ancient castle in Novobërdë/Novobrdó and continued through Graçanicë/Gračanica's Monastery reaching the final point in front of Prishtina's newest landmark, the New Born.

The idea behind the Tour de Culture has three aspects: first of all, the promotion of natural and cultural heritage, secondly - the promotion of non-motorized transport for more efficient mobility for all, and lastly, in addressing climate change concerns, which was directly linked to this year's World Habitat Day theme, 'Cities and Climate Change'. The cyclists were welcomed and hosted by the leaders of these three themes with traditional local foods. Organized for the fourth time, the Tour de Culture has become a popular activity among Kosovo's culture and sport community.

As an initiative of UN-HABITAT's Municipal Spatial Planning Support Programme (MuSPP) and Cultural Heritage without Borders, it was first organized in 2008 and started with a modest number of cyclists. The Tour de Culture has grown every year, and has now reached close to 550 participants, with many more becoming interested in pursuing cycling further. On their way, the participants of this year's event paid tribute to Arben Arapi, a committed cyclist and enthusiast of the Tour de Culture, who supported the Tour since its inception. He died in a road accident last December, after his bike was hit by a speeding car. His tragic death brought to the participants' attention the issues of road and traffic safety.

Over its four years the event has been supported by hosting municipalities, different organizations and many other local and international partners like the European Council through the project, Support to the Promotion of Cultural Diversity (PCDK), now a regular supporter of the Tour de Culture, The Cyclist Federation and the Cyclist Clubs from the six secondary cities of Kosovo. For the first time this year the Group of Organizations for Cleaner Energy also supported the event, as the promoters of a better climate future.

WATER**Tajikistan cities to get water infrastructure overhaul**

After the successful refurbishment of the water supply system in the north and south of the country, the Central Tajik Water Project now aims to invest further in new clean water projects in four more cities at the request of the central government. Most financing will come from a USD 7 million loan from the European Bank for Reconstruction and Development (EBRD).

Tajikistan is a country rich in water resources yet the quality of the water supplied to citizens is often dangerously low with intermittent supply, especially in the summer, leading to outbreaks of water-borne disease, and many citizens refusing to pay their water bills. Clean water is one of the EBRD's priorities in the country, according to the new country strategy.

The new EBRD loan with a sovereign guarantee to the State Unitary Enterprise 'Khojagii Manziliyu Kommunal' will be used for on-lending to water companies in the cities of Gissar, Shachrinav, Somoniyon and Tursunzoda.

The project cost will be supplemented by grants. The EBRD Shareholder Special Fund has approved a grant of USD 2.6 million for the project. The EU Investment Facility for Central Asia is considering a grant of USD 8.1 million for the same project.

Significant technical cooperation, funded by the EBRD and international donors, will help the water companies improve their performance.



The programme will support sustainable and long-lasting change in the country's municipal water sector

PHOTO © BRYAN WHITFORD/EBRD

"We want to bring innovation to Tajikistan in terms of financing, including financing municipalities together with other big international financial institutions and donors," says Lin O'Grady, EBRD's Deputy Director for Municipal and Environmental Infrastructure. "Improved quality and supply of water will stimulate the payment of water bills, helping the water companies to become self-reliant."

"EBRD is the strongest cooperation partner for the State Unitary Enterprise, Khojagii Manziliyu Kommunal, in the implementation of water supply improvement projects in the cities and rayons of the Republic of Tajikistan," said Alimurod Tagoimurodov, General Director of Khojagii Manziliyu Kommunal. "We hope that the Central Tajikistan Water Rehabilitation Project will be implemented successfully and in due course positive results will be achieved. We also hope that the EBRD will continue its close cooperation with Khojagii Manziliyu Kommunal in similar projects in order to improve water supply and wastewater systems in other cities and rayons of the Republic of Tajikistan."

The existing EBRD-financed projects in the municipal infrastructure in Tajikistan concentrate on improving water supply and wastewater services, as well as improving solid waste management and public transport services.

WATER**Seven Russian cities to receive upgrade on water networks**

Rosvodokanal (RVK), Russia's leading private sector water operator, will upgrade the services it provides to five million clients spread over seven Russian cities and to fund further regional development projects. The funding will be provided by a RUB 1.5 billion (USD 48.3 million) loan from Russia's Bank for Development and Foreign Economic Affairs, Vnesheconombank (VEB) and a matching amount from the European Bank for Reconstruction and Development. RVK's programme focuses on the upgrade and construction of water extraction facilities, modernizing and extending water networks, energy efficiency improvements, installing automated control systems, as well as improving sewage collection networks and treatment facilities.

TRANSPORT**Tbilisi railway bypass project restructured**

Following extensive discussions between both parties, Georgian Railway LLC will pursue the construction of a new bypass to re-route rail traffic outside the centre of Tbilisi. The company has chosen to restructure the implementation of the project, which is designed to improve the efficiency and safety of rail operations and free more than 70 hectares of land in the Georgian capital for urban renewal projects. The EBRD had agreed last year to provide a EUR 100 million (USD 135 million) loan to help fund new track and develop the key east-west freight corridor, used for the transport of oil and other products from Azerbaijan and central Asia to Georgia's Black Sea ports, and will now consider supporting other priority projects with the railways.

TRANSPORT**Skopje to modernize traffic control and rehabilitate key roads**

The Macedonian capital Skopje will introduce a modern traffic management system and upgrade one of the key arteries in the city. With the support of EUR 5.6 million (USD 7.5 million) in EBRD funds, a modern IT-based traffic management system will be introduced. This is the first time that a Macedonian municipality has been able to attract financing directly from an International Financial Institution, without sovereign guarantee. Rehabilitation of Skopje roads infrastructure is one of the main priorities of the city which generates almost half of FYR Macedonia's GDP and is home to 700,000 residents. It involves the installation of new traffic signals and traffic signal controllers that will be linked through a dedicated fibre-optic network to the automated traffic control centre, as well as new traffic surveillance cameras and electronic traffic message signs at key junctions.

TRANSPORT

Utrecht recognized as CIVITAS 'City of the Year'

In a European competition created to promote clean and sustainable urban transport solutions, Utrecht, The Netherlands, dominated two of the three categories for its impressive efforts to implement transport policies and engage the public.

Utrecht was named City of the Year, and also took honours in the Technical Innovation category. Ghent, Belgium, was the winner in the third category Public Participation.

Now in its 8th edition, the CIVITAS Awards are given to cities that demonstrate ambitious urban transport activities, programmes or policies supporting cleaner and better city transport. The ceremony took place in Funchal, on the opening day of the CIVITAS Forum Conference. Since 2002 the CIVITAS (City-VITALity-Sustainability) EU initiative has actively facilitated the sharing of best practice among more than 209 European cities.

The wide range of measures combined with its a progressive programme for freight delivery earned Utrecht recognition as CIVITAS City of the Year. According to Sonja Van Renssen, jury member, "Utrecht has a wide-ranging approach...stretching from targeting behavioural change to investment in public transport. It's promoting everything from car sharing and cleaner trams to efficient freight transport and Park & Ride."

The active involvement of Utrecht's citizens in the city's public transport projects was another factor singled out by the CIVITAS Award panel of judges.

In the Technical Innovation category, Utrecht's sustainable freight transport solutions helped make it the winner. Among other clever solutions, Utrecht has put in place a comprehensive system that relies on its inland waterways through the use of an electric 'beer boat', and is using centrally co-ordinated solar-powered electric vehicles called 'Cargohoppers' for city-centre freight deliveries.

In the Public Participation category, Ghent was the winner for the "sheer breadth of its actions to engage stakeholders on sustainable urban transport policy," said Sonja Van Renssen.

Burgos, Spain, and Brighton & Hove, UK, were the two runners-up in the Public Participation category, decided for their interesting approaches to involve citizens and stakeholders in mobility actions and decisions.



Utrecht's wide-ranging approach including targeting behavioural change to investment in public transport led to its win
PHOTO © MIRIAM LOGONDER/CIVITAS

ENVIRONMENT

German cities among Europe's best in environmental protection



Awarded European Green Capital 2011, Hamburg also scores high marks for promoting alternative means of transport and the development of new green areas
PHOTO © SIEMENS

Compared to other European cities, Germany's urban centres are better than average and are among the best when it comes to protecting the climate and the environment. This is the finding of the German Green City Index, an urban study commissioned by Siemens from the Economist Intelligence Unit (EIU), an independent research institute. A total of eight environmental categories were examined in the study. In 10 of the 12, German cities came in 'above average,' and show particularly strong performances in the areas of environmental strategies, water, recycling and energy-efficient buildings. However, the reports says there is still room for improvement in the area of CO₂ emissions.

Compared to the rest of Europe, German cities rank close together and are very similar in performance. This is partly due to legislation: the directing and implementing of sustainable urban development policies has a long history in Germany. In addition, Germans have a high degree of environmental awareness. "The study also shows that environmental protection is not a luxury," said Emily Jackson, project manager at the EIU. "Despite sometimes considerable differences among the cities in terms of income, population, geographical location and amount of industry – none of these factors have a measurable effect on a city's ranking in the Index."

In the German cities analyzed (Berlin, Hanover, Cologne, Leipzig, Mannheim, Nuremberg, Stuttgart, Munich, Hamburg, Bremen, Essen and Frankfurt), buildings use 20 percent less energy than those in neighbouring European countries. This is the effect, among other things, of strict regulations for energy efficiency and of energy-saving building renovation. The German cities also score somewhat better than their European counterparts in terms of energy efficiency. However, European cities are significantly ahead in terms of the proportion of renewable energies used.

German cities are also at the top when it comes to recycling: despite generating a higher amount of waste than other European urban centres, they recycle about three times as much waste material.

ENVIRONMENT

Toronto races ahead with new green roof by-law

The City of Toronto will see up to 36.5 hectares of new green space created as a result of the city's award winning Green Roof By-Law, passed in 2010. The new green spaces will be created on new commercial, institutional and multi-unit residential developments across the city.

"Cities around the world have begun mandating green roofs on their new buildings because they turn largely wasted roof spaces into green spaces that generate multiple public and private benefits for building owners and citizens," said Jeffrey Bruce, Green Roofs for Healthy Cities.

Green roofs help cut off and reduce storm water run-off that pollutes rivers, lakes and beaches, and also reduces the stress on sewer systems. There is also a tangible reduction of the urban heat island effect (the artificial overheating of the city) through daily dew and evaporation cycles, as plants cool cities during hot weather.

The greater insulation that green roofs offer can substantially reduce the amount of energy needed to heat or cool a building, as roofs are the biggest site of heat loss.

An example has been Toronto City Hall's own building where a green roof podium was built, creating a recreational space out of a previously dead roof area. Before the green roof the space was rarely used for public gatherings as it was too hot, but now the council says the addition of the roof means a new fully accessible park in downtown Toronto, at a fraction of the cost of having to buy and set aside land.

"If we continue to implement green roofs in Toronto at this rate, we can begin to see a significant annual impact on energy consumption and a reduction in the urban heat island effect," said Steven Peck, Green Roofs for Healthy Cities.

Environment Canada modelling demonstrates that an area covered by 93 hectares of green roofs, would reduce temperatures by 1 to 2 degrees Celsius and generate energy savings of over 15 million KWH.

"The Green Roof By-Law will make Toronto the leader, for the first time, for the most green roofs installed by a major city/region in North America," added Peck. "Last year Toronto was second, but I am confident that it will soon be in first place."



Toronto's City Hall has converted a seldom-used space into an accessible downtown park
PHOTO © ANTOINE BELAIEFF

WATER

Texans vote for change in water management

Texan lawmakers narrowly won approval at the ballot box in November for an amendment to the state's constitution which will allow the issuance of additional general obligation bonds by the Texas Water Development Board (TWDB). These bonds, up to USD 6 billion at anyone time, are the TWDB's primary vehicle for funding water related infrastructure in Texas.

The severe drought that has parched the US state of Texas for a year shows no sign of relief. Coupled with the hottest summer ever recorded in any state and with a booming urban population, a new water management plan was created.

"The population of Texas is expected to increase by almost 82 percent over the next 50 years, making it inevitable that cities and towns will need to expand and repair their infrastructure to keep up," a TWDB spokesperson said.

Due to the state's credit rating the agency is able to sell bonds on an entity's behalf and loan them the proceeds at a lower interest rate than they can obtain elsewhere, saving money for all involved, and for some entities, the TWDB being their only financing option.

With the increased financial leverage gained from the amended laws the TWDB hopes that further cities will be assisted like the City of Merkel. It borrowed USD 3 million from the TWDB to repair its ageing wastewater and water infrastructure helping to reduce wasted water. Several kilometres of water distribution lines were replaced which eliminated costly repairs, water loss and improved water flow and pressure.

Currently the state needs 2.2 million hectare-metres a year, yet by 2060 the TWDB says this is set to rise to 2.8 million hectare-metres. To combat this the agency's water plan for 2012, due for approval, recommends another 562 new projects including erosion prevention, greater conservation and building new reservoirs to help meet the state's cities demand.



Texas' forecast urban population growth, coupled with drought, led to the initiation of the new water management plan
PHOTO © MICHAEL HIGH

UN-HABITAT MEMORIAL AWARD**Second cycle of Rafik Hariri award launched**

In commemoration of martyred Prime Minister of Lebanon Rafik Hariri's accomplishments, the second cycle of the Rafik Hariri UN-HABITAT Memorial Award has been launched. The award will continue to be presented biennially to individuals or institutions around the world. Specifically, the award focuses on achievements in: leadership, statesmanship and good governance; construction and reconstruction of settlements and communities as well as human resources development and benevolent activities in fighting urban poverty and the implementation of the Habitat Agenda.

TOURISM**Abu Dhabi to host WTTC's Global Summit in 2013**

The World Travel & Tourism Council (WTTC) announced that it will hold its 13th Global Summit in Abu Dhabi in April/May 2013. Abu Dhabi Tourism Authority (ADTA) and Etihad Airways will be official hosts of the biggest annual gathering of Travel & Tourism leaders. WTTC's decision was based on Abu Dhabi's compelling presentation, the enthusiasm of government and industry agencies, accessibility of the destination, and a high standard of capability and evidence of green tourism growth as a key development strategy.

ENERGY**Largest North African solar plant takes step forward**

North Africa's first large-scale solar power plant, Ouarzazate in Morocco, took a further step towards realization with a USD 297 million loan from the World Bank. Morocco takes the lead with the first project in the low-carbon development plan under the ambitious Middle East and North Africa Concentrated Solar Power (CSP) Scale-up Program. A USD 200 million loan will be provided by the International Bank for Reconstruction and Development, the part of the Bank that lends to developing country governments, and another USD 97 million loan will come from the Clean Technology Fund.

WATER**Beirut to improve urban water supply**

The Greater Beirut Water Supply project which will improve water supply to over 2 million people in most of its sprawling urban area including the low-income neighbourhoods of Southern Beirut, is expected to be signed by the Government of Lebanon shortly following a recent decision by the Council of Ministers. In addition to delivering clean and reliable water to Beirut's citizens, the project is also designed to strengthen the capacity of the Beirut Mount Lebanon Water Establishment, the utility responsible for the operation and efficiency of the urban water supply in the area.



A view of new housing projects in Pardis, Iran

PHOTO © UN-HABITAT

URBAN DEVELOPMENT**Iran and UN-HABITAT in new co-operation**

Following a UN-HABITAT visit to Iran in November, UN-HABITAT has agreed with the Ministry of Roads and Urban Development of the Islamic Republic of Iran on a strategic framework of co-operation for the coming four years.

The framework expands the current disaster risk reduction work of the UN-HABITAT Tehran Office to the surrounding region. UN-HABITAT also joins forces with sister UN agencies and many local counterparts under the 2012-2016 Iran United Nations Development Assistance Framework for building capacity in administration and society to reduce a wide variety of urban risks.

The framework introduces a new subject for cooperation: Iran's massive and comprehensive affordable housing programme. Known as the Mehr, it is a USD 52 billion undertaking supported by the government. It will bring some 2.6 million affordable homes to first-time homeowners.

Until this year, more than USD 22 billion soft loans had been provided by the banks to the eligible target groups, and some 500,000 homes had been delivered under the Mehr housing scheme by private developers on the land offered for free by the government. New homeowners are getting a 99-year lease on the publicly owned land.

UN-HABITAT visited one of the 17 new towns currently developed in Iran: Pardis, located 25 kilometres east of Tehran, currently connected to central Tehran by a highway, although a subway line is also on the drawing board. Once the project is completed, Pardis New Town will house some 150,000 inhabitants.

UN-HABITAT will be advising, studying and eventually helping to share Iran's experience with other countries. Under this new strategic framework of cooperation, UN-HABITAT is scheduled to send a team to Iran to start work in December 2011.

URBAN POVERTY**Lebanon launches new poverty programme**

In order to help improve the living conditions of the most poor and vulnerable populations, the Lebanese government has launched, the National Poverty Targeting Program (NPTP), which is being implemented by the Ministry of Social Affairs and the Presidency of the Council of Ministers. The programme was launched on the International Day of Poverty at a national ceremony in Beirut, officiated by the Lebanese President Michael Sulaiman, amidst a large gathering of stakeholders from government, civil society, donors, and the private sector.

The objective of the NPTP is to establish a national targeting system to be used by the Lebanese government in the delivery of social transfers and services aimed at improving the living standards of the population, and in particular of the poor and vulnerable.

The latest statistics show that about one million Lebanese, which makes up 28.5 percent of the population, continue to live under the upper poverty line at USD 4 per person a day. Around 300,000 individuals, 8 percent of the population, live in extreme poverty at less than USD 2.4 per person a day, and are unable to meet their most basic food and non-food needs.

"The objective of the programme is to strengthen the social safety net system – particularly the public safety net system – which in Lebanon is weak and fragmented," said Wael Abu Faour Minister of Social Affairs. "In so doing, the NPTP also has a wider objective – that of strengthening the role of the state with respect to the citizen. The NPTP will create a mechanism by which the Lebanese government can reach out directly to its citizen regardless of confession, origin or otherwise."

The NPTP is part of the Second Emergency Social Protection Implementation Support Project (ESPISP II), a USD 6 million grant from the World Bank to Lebanon. The objective is to improve the administration, delivery, financial sustainability, and targeting of social services. This is to be done through the implementation of new systems and the adoption of new policies in the National Social Security Fund, the Ministry of Labor, the Ministry of Public Health, the Ministry of Social Affairs and the Ministry of Education and Higher Education.



The programme will aim to distribute Lebanon's safety net more effectively among its citizens PHOTO © CRAIG FINLAY

EDUCATION**Report calls for new ways of funding higher education**

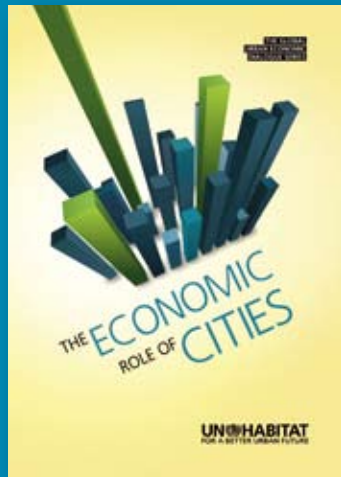
A new report, *Breaking Even or Breaking Through: Reaching Financial Sustainability While Providing High Quality Standards in Higher Education in the Middle East and North Africa*, highlights the need to increase funding to meet the demands for more and better education opportunities in the MENA region. Prepared by the World Bank and the French Development Agency, in partnership with the Marseille Center for Mediterranean Integration assesses that in order to meet the surging revenue needs of universities and other institutions of higher education in MENA, non-governmental revenue from tuition and other fees, university entrepreneurial activities, external grants and contracts, the private sector and philanthropy are needed. The endowment model used successfully by both private and public universities in the US, merits strong consideration as a mechanism for alternate funding for MENA higher education.

PARTNERSHIPS**Four countries join Deauville Partnership in support for MENA reform**

The Deauville Partnership, set up at the G8 meeting in the French seaside town in May 2011, with the aim of supporting political and economic transformation in Tunisia, Egypt, Jordan and Morocco, has welcomed five new members. This enlarged group of institutions means that there is now a total of USD 38 billion in funds available to support suitable reform efforts in Egypt, Tunisia, Morocco and Jordan - the 'Partnership Countries'. This figure is in addition to resources that could become available from the International Monetary Fund. The G8, with Egypt and Tunisia, initiated this long-term Partnership in Deauville to support the historical changes then under way in some countries in MENA, based on political and economic pillars.

INFRASTRUCTURE**GE opens new offices in Iraq to help boost socio-economic goals**

GE announced the opening of three new offices in Iraq - Baghdad, Basra and Erbil - that will continue to play a pivotal role in supporting the country's infrastructure needs by providing advanced technologies and solutions. Currently, GE is delivering power generation technology, which when installed, is capable of generating over nine gig watts of electricity to the country; GE is also providing modern diagnostic technologies to a number of hospitals. The company's engines power a significant fleet of Iraqi Airways, while its energy solutions drive the efficiencies of oilfields. The company is also promoting the skills of its Iraqi workforce by providing extensive training programmes and through knowledge sharing initiatives.



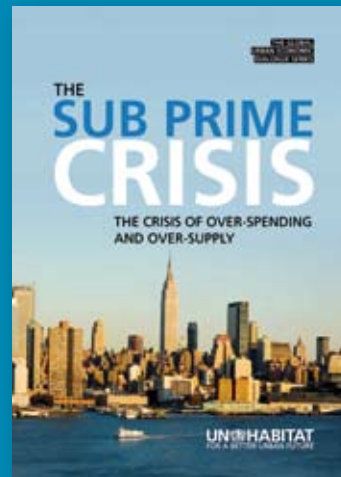
Economic Role of Cities



Fiscal Decentralization in the Philippines



Building Urban Safety through Slum Upgrading



The Sub Prime Crisis

First meeting of UN-HABITAT's new Urban Private Sector Advisory Board



The Urban Private Sector Advisory Board met in Amsterdam

PHOTO © RUUD MORET

In Amsterdam, the World Business Council for Sustainable Development, VEOLIA Environment, Nomadeis, BASF, This is Africa, Siemens, GDF-SUEZ, JAO Design International, ARUP, the PENN Institute for Urban Research, and the Financial Times joined

UN-HABITAT in September for the first meeting of the agency's new Urban Private Sector Advisory Board hosted by Arcadis.

The new board is a voluntary affiliation of business entities with corporate social responsibility programmes dedicated to sustainable ur-

The board aims to foster cooperation and partnership, information and expertise, as well as advise UN-HABITAT

ban development. It aims to foster cooperation and partnership, information and expertise, as well as advise UN-HABITAT. The board will also represent the private sector interests in various UN-HABITAT campaigns and other initiatives.

All official private sector partners of the agency will be able to join the board, while others such as academic institutions, business schools or independent experts can sign up as associate members.

At the meeting, Advisory Board members elected Christian Kornevall of the World Business Council for Sustainable Development as Chair, and Katharina Felgenhauer of BASF as co-Chair. Companies also presented their current work in the field of sustainable urban development, either through their partnerships with UN-HABITAT or their own programmes.

UN HABITAT sponsors water education meeting

Some 4,200 water sector leaders from 40 countries worldwide travelled to Bozeman, Montana in September for a conference on the theme, Sustaining the Blue Planet. The four-day event organized by the water education non-profit Project WET Foundation, focussed exclusively on water education and brought together a diverse group of international organizations, corporations, NGOs, educators, philanthropists, and practitioners. UN HABITAT was one of four signature sponsors for the event.



Sustaining the Blue Planet took place in Bozeman, Montana

PHOTO © JONESEY

World Habitat Day

Better urban planning can protect the poorest against natural disasters



President Felipe Calderón Hinojosa addresses World Habitat Day attendees

PHOTO © UN-HABITAT

President Felipe Calderón Hinojosa opened the global commemoration of World Habitat Day on Monday 3 October in the Mexican city of Aguascalientes.

“We live in a world where island states below sea level are threatened, and many countries around the world, including Mexico, are suffering the effects of climate change such as floods, wild fires and severe weather disruptions,” the President told an audience of some 4,000 gathered to learn about the 2011 cities and climate change theme.

Statements from Dr Clos, the Minister for Social Development, Heriberto Félix Guerra, and Aguascalientes Governor Carlos Lozano de la Torre followed the President’s remarks. Dr Clos thanked the Government of Mexico, the Social Development Ministry and the city of Aguascalientes for hosting the event. He cited projections that some 12 million people would

be displaced by the effects of climate change in the next 20 years.

Aguascalientes Governor, Carlos Lozano de la Torre, thanked the United Nations for recognizing the efforts that Mexico and his state were making on climate change mitigation.

“Experts predict that by the year 2050, the global population will have increased by 50 percent from what it was in 1999. Also by that time, scientists say, global greenhouse gas emissions must decrease by 50 percent compared to levels at the turn of the millennium. I call this the “50 – 50 – 50 challenge,” said UN Secretary-General Ban Ki-moon in a message read out on his behalf at World Habitat Day events around the world.

Dr Clos in his statement, said: “It is estimated that by 2050, there could be as many as 200 million environmental refugees worldwide, many of whom will be forced from their homes by rising sea levels and the increased frequency of flood-

ing or drought. Prevention should be addressed through better urban planning and building codes so that city residents, especially the poorest, are protected as far as possible against disaster.”

UN-HABITAT chose the cities and climate change theme saying it was important to see what cities are doing about climate disruption. This means their pollution and environmental footprint, as well the impact in turn of climate change problems on cities, especially on the poorest and those least able to cope when a weather-related disaster strikes.

Achim Steiner, Executive Director of UNEP, the United Nations Environment Programme, also made a special World Habitat Day statement in which he stressed the need to ‘green’ the buildings in which we live and work around the world so that they consume less energy.

“As countries prepare for the United Nations Sustainable Development Conference

(Rio+20) in Brazil in June 2012, there are real opportunities for cities to lead the greening of the global economy, where economic development can reduce environmental risks and improve human well-being,” said the chief of UN-HABITAT’s Nairobi-based sister agency.

In a separate statement in Geneva, UN Special Rapporteurs on Housing, Raquel Rolnik, and on Internationally Displaced Persons, Chaloka Beyani said there was “not much to celebrate” on World Habitat Day given that approximately one-third of the global population still lives in slums and dire conditions of poverty.

“States and the international community can no longer afford to ignore the specific vulnerabilities of informal settlers to climate change-induced disasters, and the increasing risks they face,” they warned in a joint statement.

On feeding cities, the UN’s Food and Agriculture Organization stressed the role urban forests play in shielding cities from strong winds and flooding and buffering them against hot weather.

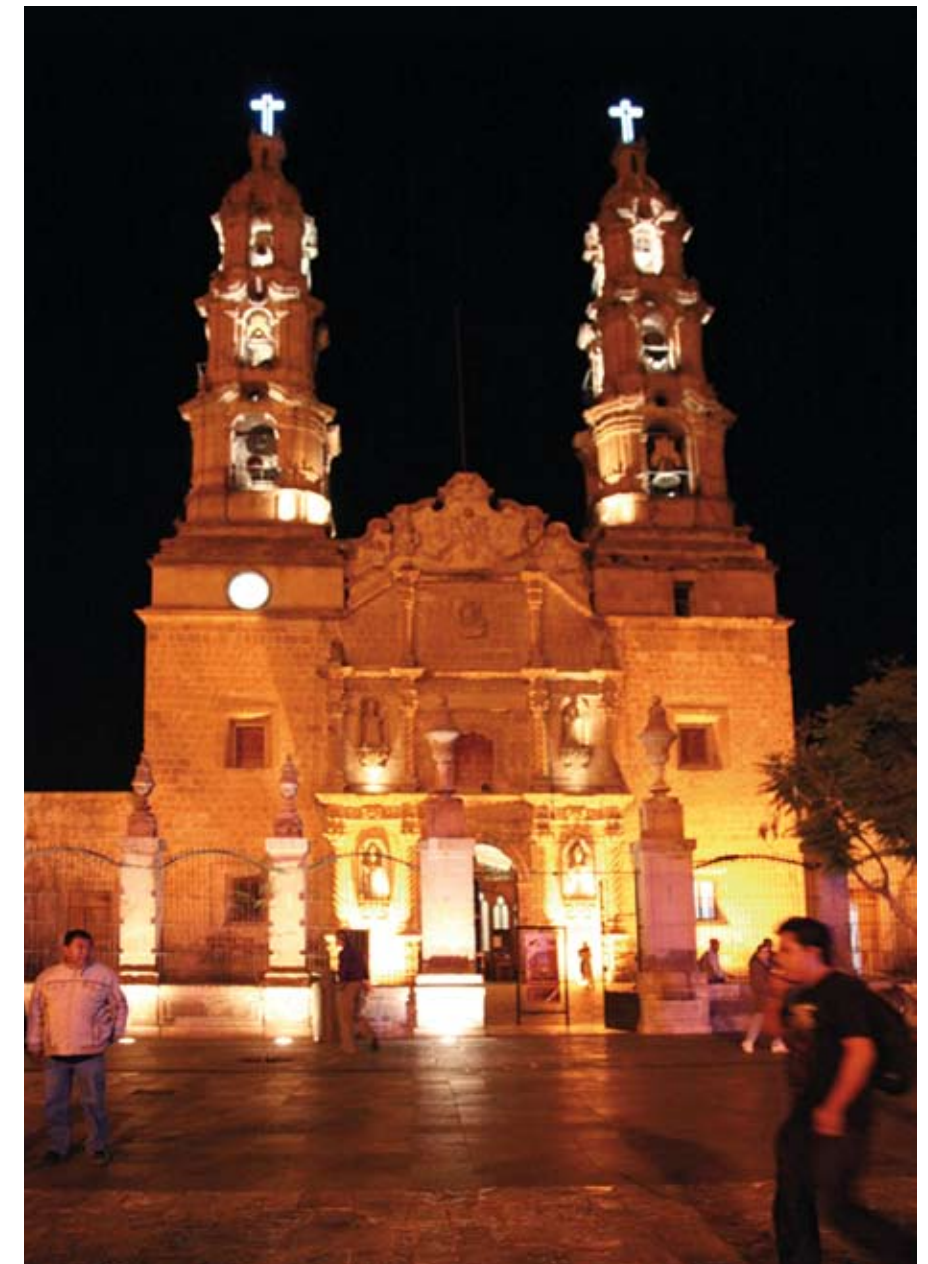
In New York, Margareta Wahlström, Special Representative of the Secretary-General for Disaster Risk Reduction, was at pains to point out that the world’s mayors and municipal leaders were on the frontline in the fight against climate-induced disasters.

“Cities today are bursting at the seams and they are both an opportunity for economies of scale which will reduce the impact of climate change, and a challenge because of the rapid pace of urbanization,” said Wahlström, who called for governments and the private sector to work more closely and quickly in an effort to reduce the risks facing urban areas.

In keeping with a well established tradition, UN-HABITAT also presented the 2011 Habitat Scroll of Honour winners, while The Building and Housing Social Foundation headquartered in the United Kingdom, bestowed the winners of the 2011 World Habitat Awards.

The occasion was particularly pertinent for Juba, South Sudan, where it was both tears and joy as the world’s youngest nation celebrated its first ever World Habitat Day. This celebration comes at a time when newly independent South Sudan is embarking on reconstruction after years of stagnation and underdevelopment caused by a protracted civil war. Celebrations to mark the occasion were held in scores of cities around the world. ■

On feeding cities, the UN’s Food and Agriculture Organization stressed the role urban forests play in shielding cities from strong winds and flooding and buffering them against hot weather



Main cathedral in Aguascalientes, Mexico

PHOTO © JULIUS MWELU

2011 Habitat Scroll of Honour Awards



Bryan Lipmann, Wintringham, Australia, receives the Scroll of Honour award in Mexico PHOTO © UN-HABITAT

During the Global Observance of World Habitat Day, UN-HABITAT presented the winners of the 2011 Habitat Scroll of Honour awards. One country from each continent was represented for their initiatives and contributions in the fields of shelter provision, highlighting the plight of the homeless, leadership in post conflict reconstruction, and developing and improving human settlements and the quality of urban life.

The Habitat Scroll of Honour award was launched by the United Nations Human Settlements Programme in 1989. It is currently the most prestigious human settlements award in the world.

Australia

Wintringham is awarded for helping provide accommodation for about 1,000 elderly people in need every night. Established in 1989, Wintringham, in the city of Melbourne, is an internationally recognized non-profit welfare organization which has helped influence government policy to include housing for homeless elderly people. This is the first time UN-HABITAT recognizes an initiative devoted to the elderly, and the first time an Australian project has been awarded.

Cuba

The Centro de Investigacion y Desarrollo de Estructuras y Materiales (CIDEM) in Cuba is

awarded for blazing a new trail in low-cost, low-energy, eco-friendly building materials. Started in 1992 as a research project, it promotes the establishment of small workshops for local communities where ordinary people can learn their trade and produce their own building materials cheaply. There are over 50 such workshops in Cuba, and a further 16 around the world. Tens of thousands of affordable, environmentally friendly homes have been built globally using the CIDEM system to provide flooring, roofing, tiles, and walls made of local materials using low energy production. It has also helped create new job opportunities, and in some cases, as in Bangladesh, it has provided microcredit facilities and helped build factories for construction materials.

Malaysia

The Stormwater Management and Road Tunnel (SMART) project is awarded for improving the management of storm water and peak hour traffic. The project is an initiative of the National Security Council and MMC-Gamuda, a joint venture between Gamuda and Marsch and McLennan Companies, two of Malaysia's leading engineering companies. Stretching for 9.7 kilometres the SMART is the longest multi-purpose tunnel in the world. It is designed to solve the problem of flash floods in Kuala Lumpur and also to reduce traffic jams. It functions as a storm water diver-

sion tunnel closed to traffic in very heavy rains, and otherwise serves as a motorway tunnel that has considerably reduced traffic congestion as upwards of 30,000 vehicles use it daily.

Namibia

Edith Mbanga of the Shack Dwellers Federation for Namibia is personally awarded for her outstanding efforts to improve land access and housing for the poor. Her work has been of special benefit to women living in poverty. Since the early 1990s she has helped set up various savings and support groups, which she helped into a national network under the Federation. Through her dedication, it is today the largest member driven organization in the country. Thanks to her drive and energy, there are now over 600 savings groups in Namibia with an estimated 20 members, 65 percent of whom are women. The Federation has helped more than 4,000 poor households secure land, and more than 2,000 to build new homes.

Russia

The Yakutsk City Administration is awarded for implementing a new cold climate urban development plan. Implemented in 2009 and 2010, the plan has provided the eastern Siberian city with a new drainage system, better roads, a landscaped environment, new apartments for 5,000 families and retrofitting buildings to make them energy efficient. Yakutsk, which suffers extremely cold winters, is continuing to improve its urban infrastructure so as to save as much energy as possible.

United States

Austin Energy Green Building is awarded for being the first in the United States to lead the way in sustainable building practices and commercial construction. The city-owned organization, founded in 1991, provides valuable electricity, fuel, water and construction savings. It also ensures that buildings are energy efficient, thus making a positive, sustainable, durable contribution to the city. The Austin Energy Green Building is consulted nationally and internationally. ■

Energy conservation: A mini solar revolution

Local solar energy water heating programmes in the United States and South Africa show how community groups and municipalities can spark rapid technological change, writes **Alex Aylett**, of the University of British Columbia geography department.

Yes cities have a huge footprint, but municipalities only control a small fraction of it. Really transformative change needs to come from neighbourhoods across a city – not just in city hall. Making the shift from climate ‘government’ to climate ‘governance’ is a tough one. But recent solar energy and hot water programmes in the United States and South Africa show how, by working at the neighbourhood scale, both community groups and municipalities can spark rapid technological change.

Started in 2009, the community driven Solarize Portland campaign has installed 2 megawatts of solar energy capacity in 585 homes across the city of Portland, and installations are ongoing

In under two years, neighbourhood groups in Portland, Oregon on the Pacific west coast of the United States, have transformed the local solar energy market. Started in 2009, the community driven Solarize Portland campaign has installed 2 megawatts of solar energy capacity in 585 homes across the city of Portland, and installations are ongoing.

Rolling out networks of decentralized renewable energy across existing neighbourhoods is one of the holy grails of urban sustainability. How can we collectively transform existing urban energy systems, not just dream up better cities for the future? The Solarize project gives us some clues – and recently the successful



Neighbourhood groups in Portland, Oregon have transformed the local solar energy market PHOTO © TRUFLIP99

model jumped an ocean and has been the seed for a similar project in Durban, on South Africa's Indian Ocean east coast.

How to do it

Solarize Portland started in the city's Mt. Tabor neighbourhood with a simple question: “wouldn't it be cheaper to install solar panels on my house if a bunch of my neighbours were doing it too?” I met some of the families who started the project and when it all began they had modest hopes: if they could get 20 homes to install, then bulk purchasing and competitive bidding for the contract could bring everyone's costs down. In the end their impact has been much bigger.

For homeowners, installing a residential solar system can be intimidating. There are multiple competing contractors, technologies, methods of installation. The high upfront costs also turn many people away. To address both cost and complexity, the people behind Solarize designed it to be a “one-stop shop” for residential

solar. Neighbourhood volunteers promoted the programme, and helped run information workshops that demystified the technology and laid out the advantages of collective installations.

By signing up to the process, households would receive full support from the initial assessment of the suitability of their property right through to installation, the final inspection of the work, and the application for available subsidies.

It started as a partnership between local volunteers, Southeast Uplift (a coalition of neighbourhood associations), and the Energy Trust of Oregon (a state-wide NGO focused on energy issues). They calculated that simply by clumping neighbourhood installations together under one contract, competitive bidding and bulk purchasing would cut installation costs by 25 percent. Then by bringing together all the available local, state, and federal subsidies and incentives, they could cut costs even further. In the end homeowners paid only 10 to 20 percent of regular installation costs. ▶



PHOTO © BUREAU OF PLANNING AND SUSTAINABILITY CITY OF PORTLAND, OREGON

In the first six months Solarize more than tripled the total number of installations carried out in the city the year before

In its first six months, Solarize more than tripled the total number of installations carried out in the city the year before. At the same time, non-Solarize installations also grew by 350 percent. In total, installations went from under 50 in 2008, to almost 350 in 2010. Solarize's success has been due to more than just getting the finances right. The rapid growth of the project has depended on neighbourhood level

ize spread to neighbourhoods across the city. With some logistic support from staff in Portland's Bureau of Planning and Sustainability, neighbourhood associations all across the city are now running their own projects. It has also been adopted by neighbouring cities and towns, and even a city quite a bit further away.

In late 2010, the Energy Office in Durban was looking for ways to boost solar hot water instal-

Rooftop solar thermal is an easy and affordable way to significantly lower residential energy consumption. But, as had been the case in Portland, the cost and complexity of installing the systems held homeowners back

social ties and a feeling of pride that comes as residents see their neighbourhood being transformed one roof at a time.

Tim O'Neal, Southeast Uplift's sustainability coordinator, highlighted that larger overall impact: "This project has truly brought our community together, all moving towards one goal. From attending workshops to watching as neighbours went solar street by street. It's been great to see what we've been able to accomplish as a group."

Gathering momentum

Propelled by this sense of community, the programme grew exponentially. Interest in Solar-

lations in the city. South Africa is still recovering from a debilitating electricity supply crisis, and up to 30 percent of household electricity use goes to hot water. Rooftop solar thermal is an easy and affordable way to significantly lower residential energy consumption. But, as had been the case in Portland, the cost and complexity of installing the systems held homeowners back.

The two cities are linked through their joint membership in a global urban sustainability network managed by Vancouver-based Sustainable Cities International. Members of the Solarize team in Portland began brainstorming and exchanging information with Durban's Energy Office.

In February 2011, Durban launched their own Shisa Solar Programme which adapted some of Solarize's basic principles to Durban's needs and context.

In its first six months, 1,000 households registered with Shisa to express their interest in installing solar hot water. Shisa then matches up neighbouring homes across the city into bundles of ten or more that can be bid on by local contractors. Actual installations are still at an early stage, but the rapid response from residents makes organizers optimistic about its impacts.

Derek Morgan, manager of Durban's Energy Office, chalks up public interest to the allure of a good deal: "We are using simple economic principles to make solar hot water installations more affordable."

A model best practice

But beneath that, the programme also helps to give homeowners confidence and trust in a process that could otherwise be quite foreign. There are over 400 registered solar hot water installers in the country and the information they provide is often conflicting. Shisa acts as an authority to vouch for the reliability of both the technology and the installers.

Solarize and Shisa Solar are both path breaking projects among efforts to reduce the carbon footprints of cities and increase urban energy independence. Efforts to mobilize public action around climate change traditionally focus on educating people about the positive impacts of their individual choices. The assumption is that the cause of inaction is a lack of information.

Solar projects in Portland and Durban have succeeded because they've left this approach behind.

Rather than focus on individuals, Solarize and Shisa focus on neighbourhoods. This has financial benefits, because it opens up new economies of scale. But it also links these projects into the social networks that hold communities together allowing them to contribute to and benefit from the sense of collective accomplishment that comes from making meaningful change.

Beyond this, these projects have recognized that the principle barrier to action is not a lack of information, but a lack of trust. With so many competing sources of information, having a credible locally-based group evaluate the various options and simplify the process of technological change has been the key to rapid implementation. ■

The United Nations CEO Water Mandate

Peter Schulte, and Jason Morrison, of the Pacific Institute, a nonpartisan research organization which works to advance environmental protection, economic development, and social equity, explain the importance of bringing big companies on board in global water stewardship ►



Coca Cola supports UN-HABITAT water and sanitation programmes in countries like India. Here a new rainwater harvesting project is inaugurated by pupils at a school in New Delhi

PHOTO © K. SINGH / UN-HABITAT

The CEO Water Mandate is a public-private initiative which helps companies in the development, implementation, and disclosure of water sustainability policies and practices. Launched in July 2007 by the UN Secretary-General in partnership with international business leaders and under the auspices of the UN Global Compact, the Mandate is an emerging strategic platform for corporate water stewardship. It is also a call-to-action encouraging and facilitating a shift toward good water management practices for a wide range of industry sectors across the globe. The initiative is presently endorsed by over 80 companies, including many of the world's most recognized names, such as Coca-Cola, PepsiCo, Unilever, Tata Steel, Levi's, Nike, Dow, Shell, and Nestlé. Mandate endorsers develop annual reports – known as Communications on Progress-Water in which they disclose progress on their implementation of the six core commitment areas of the Mandate (see box).

Its applied research and on-the-ground efforts are currently focused in three major workstreams:

Business engagement with water policy and management

Water scarcity, pollution, climate change, inadequate infrastructure, ineffective water management, and many other watershed conditions beyond companies' direct control create risks for companies, governments, and others alike.

Following on the Mandate's 2011 Guide to Responsible Business Engagement with Water Policy, the Mandate is currently developing a publicly-available online tool, known as the Water Action Hub

Acknowledging this shared risk, the Mandate's policy engagement provides principles and practical steps that can facilitate responsible engagement between companies with government agencies and others in a manner that manages business risks and advances sustainable water management.

Following on the Mandate's 2011 Guide to Responsible Business Engagement with Water Policy, the Mandate is currently developing a publicly-available online tool, known as the Water Action Hub. The Hub will enable companies to more easily identify and partner with

The six core elements of the CEO Water Mandate

1. Direct Operations - Mandate endorsers measure and reduce their water use and wastewater discharge and develop strategies for eliminating their impacts on communities and ecosystems.
2. Supply Chain & Watershed Management - Mandate endorsers seek avenues through which to encourage improved water management among their suppliers and public water managers alike.
3. Collective Action - Mandate endorsers look to participate in collective efforts with civil society, intergovernmental organizations, affected communities, and other businesses to advance water sustainability.
4. Public Policy - Mandate endorsers seek ways to facilitate the development and implementation of sustainable, equitable, and coherent water policy and regulatory frameworks.
5. Community Engagement - Mandate endorsers seek ways to improve community water efficiency, protect watersheds, and increase access to water services as a way of promoting sustainable water management and reducing risks.
6. Transparency - Mandate endorsers are committed to transparency and disclosure in order to hold themselves accountable and meet the expectations of their stakeholders.

other businesses and relevant governments, NGOs, communities, and other stakeholders to advance sustainable water management on a location-specific basis.

Water and human rights

Mandate endorsers have recognized that there is a corporate responsibility to conduct business operations consistent with the recently-recog-

nized human right to water and sanitation, as well as other human rights affected by water.

In response, this Mandate focuses on developing guidance that helps companies better understand their responsibilities and opportunities related to water and human rights, and offers practical steps on how to do so.

The Mandate – in collaboration with Oxfam America – is launching an effort to develop a Guide to Aligning Business Practice with the Human Right to Water and Sanitation. This Guide will: 1) lay out background information and context for the human right to water and sanitation

as it relates to business, 2) offer an operational framework for applying business human rights principles to water, and 3) provide insights and case examples regarding practical measures businesses can adopt to ensure their operations both respect and, in relevant cases, support the fulfillment of the right to water.

Corporate water disclosure

The Mandate is also working to strengthen and help businesses communicate their water management efforts to key stakeholders (i.e., affected communities, consumers, investors, and the general public) more consistently and more effectively.

The Corporate Water Disclosure Guidelines are under development by the Mandate in collaboration with PricewaterhouseCoopers, the Carbon Disclosure Project, Global Reporting Initiative, and World Resources Institute. The Guidelines aim to offer common corporate water disclosure metrics that can begin to harmonize practice, and also provide guidance for determining report content relevance and aligning water disclosure to stakeholder expectations.

It is envisaged that the Guidelines, which will advance a common overarching approach to corporate water disclosure might ultimately pave the way for a Water Protocol, similar in nature to the Greenhouse Gas Protocol: A Corporate Standard. ■



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How open is your city? We measure it for you!

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The OPENCities Monitor is an unique **collaboration & learning** tool which measures cities' openness, avoiding ranking to eliminate negative competition.

The OPENCities monitor includes **54** internationally comparable indicators, aggregated into **11** areas:

- Migration
- Barriers of entry
- International presence
- International flows
- International events
- Diversity Actions
- Freedom
- Quality of living
- Education
- Infrastructure
- Standard of living

The monitor produces online **city profiles**. The chosen profile is measured against the average results of all registered cities and against a selected group of cities to compare with. It thus delivers a SWOT (**strengths and weaknesses**) for each openness area (see the 11 areas above listed).

The tool is publicly available online at www.opencities.eu

"**Openness** is the capacity of a city to attract international populations and to enable them to contribute to the future success of the city"

Current city coverage

For the below listed **26 cities**, data has been collated in 2010, using most up-to-date available sources. The aim of the project is to include 100 cities by 2012.

- Auckland
- Belfast
- Buenos Aires
- Chongqing
- Edinburgh
- Madrid
- Newcastle
- Poznan
- Toronto
- Barcelona
- Bilbao
- Cape Town
- Dublin
- London
- Manchester
- Nitra
- Sao Paulo
- Vienna
- Beijing
- Bucharest
- Cardiff
- Düsseldorf
- Los Angeles
- New York
- Nottingham
- Sofia

Case Studies & Policy Recommendations

In addition to the OPENCities Monitor, hundreds of case studies have been reviewed and are available on www.opencities.eu, further providing policy recommendations and outlines learning points.

To join please contact

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