

# urban WORLD

## Urban sustainable mobility

Why it's the key to a properly functioning city

- 'Decade of Action' launched to reduce road deaths as a global killer
- Medellín's Mayor talks of how his city has moved from fear to hope
- Field report: how Pakistan is developing from last year's devastating floods
- New report on Arab cities: the cradle of urbanization





## UNILEVER's health and hygiene brand, **LIFEBUOY**, is on mission to get 1 billion people handwashing by 2015



Good health and hygiene practices can prevent millions of deaths and improve people's health and economic situation. Every year, over 3.5 million children under five die of diarrhoea and acute respiratory infections. There are many solutions to these problems but making good-quality, affordable products such as soap available to people is a crucial starting point. Yet products alone are often not enough if people do not use them in the right way at the right time.

That's why Unilever's Lifebuoy, the world's number one health soap brand, is committing resources to change the handwashing behaviour of one billion people globally by 2015. This will be one of the biggest contributions of the Lifebuoy brand and its partners to the Millennium Development Goal 4, which aims to reduce child mortality by two thirds by 2015.

People often understand that they should wash their hands with soap after going to the toilet but this knowledge isn't always translated into a new habit. Understanding how to turn behaviours into habits is the first step to improving hygiene behaviour.

As passionate advocates of the health benefits of washing hands with soap, Lifebuoy is employing its expertise in changing consumer behaviour across the world to make a billion people healthier and turn handwashing into an engrained habit. But this is not something we can do alone. That's why Lifebuoy is part of the Global Public Private Partnership for Handwashing with soap where Unicef, World Bank and London School of Hygiene and Tropical Medicine are all partner organisations campaigning to raise the profile of handwashing with soap. In addition, Lifebuoy works with USAID and its Maternal and Child Health Integrated Programme to help develop effective interventions that can make a real difference to the lives of people where our programmes will be deployed.

### **A BRAND ON A MISSION: PAST, PRESENT AND FUTURE**

From the soap's beginnings in 19<sup>th</sup> century Britain when Lifebuoy helped improve hygiene and tackle cholera outbreaks, to its programmes around the world today which promote

## Economic and social benefits



Saleable water from phase one has been allocated by the Great Man-made River Authority to three identified end users: agricultural, industrial, and municipal.

Over 70 percent of the water is intended for agricultural development in the form of large

and small farms and it is expected that 130,000 hectares of agricultural land will be developed. In order to optimize agricultural development, a water storage and distribution plan has been adopted. This aims to maintain a constant supply of water throughout the year by the use of large storage reservoirs to meet fluctuating demands. Farm income over the 50-year design life is estimated at some USD 15.9 billion based on a cropping pattern biased toward strategic crops. A cropping pattern biased towards high-value crops for export will generate an income of USD 18.5 billion over 50 years. In either case the level

of self-sufficiency in food, which is an important objective of national planning policy, will be significantly enhanced.

The settlement of families in new areas where farms are being established is generating employment opportunities and other social benefits. The family farming planning will benefit some 6,600 family members. In addition, a large number of existing farm families who are benefiting from Great Man-made River water supplies are benefiting from increased income and employment opportunities.

There are other benefits that are difficult to evaluate in monetary terms but may be of overriding importance from the perspective

of national, social and economic policy. No initial evaluation of social out turn was decided at the outset of the project since in each circumstance the desire to achieve a positive high rate of return on investment or even to recover costs may not have been the main goal of policy.

The estimation of social and economic benefits is difficult to achieve without diverse and extensive data inputs, which were not available at the onset of the project. Information about economic and social benefits will be more readily obtainable after long-term operation. The immediate objective of the project is to provide desperately needed urban water supplies.

## Lessons learnt

Three more phases of the Great Man-made River Project are now under construction. These are the Ghadames – Zuwarah – Al Zawia system in the west of the country, which will have a total production of 90 million m<sup>3</sup>/year of water from 106 wells in Ghadames, the Kufra – Tazerbo

link, which will add 1.68 million m<sup>3</sup>/day to phase one from 300 wells in Kufra, and the Ajdabiya – Tobruk link, which will supply Tobruk and the eastern coastal towns with around 137,000 m<sup>3</sup> of water daily for domestic use. The Al-Gardabiya – As Sadadah system which links phases one

and two along the coast and will enable bi-directional flow, was already completed and is now fully operational. Construction and operation of phases one and two have revealed significant and useful guidelines to be applied in the subsequent phases.



## Conclusions

The Great Man-made River project is based on sound, clean technology which provides minimal environmental impact and maximum socio-economic benefits. Hydro geological

investigations and continuous monitoring of the phase one well fields confirm the presence of large reserves of good quality groundwater in the Libyan desert basins which can sustain demand supplies for more than 100 years. Reservoir depletion is characterized as a very

slow phenomenon that can be effectively managed.

Cost analyses of the value of water confirm that the Great Man-made River project is still the most viable option when compared with other supply alternatives. The project is a model for solving the water

scarcity problems in North and Northeast Africa, particularly where traditional well fields near demand centres have been depleted. This may involve international cooperation between sharing states in the case where transboundary conditions arise.



hygiene and reduce diarrhoeal disease, Lifebuoy has demonstrated an underlying commitment to social causes and raising the profile of handwashing with soap.

Lifebuoy's mission runs to the heart of the brand, and is turned into action at a global and local level. For instance, in India Lifebuoy's Swasthya Chetna ("health awakening") programme works in partnership with local government bodies to spread awareness about the importance of washing hands with soap. To date the programme has so far reached 125 million people in over 58,000 rural villages across India making it the largest rural education programme to date. For Indonesia, Lifebuoy's Berbagi Sehat programme works with partners on the ground to develop a behaviour-change programme for mothers and school children by providing both soap, and educational hygiene materials. So far, the programme has reached 1.1 million people.



At a global level, Unilever's Lifebuoy is one of the co-founders of UN-recognised Global Handwashing Day that aims to elevate the profile of handwashing with soap onto the world stage. The challenge is to transform handwashing with soap from an abstract good idea into an automatic behaviour performed in homes, schools, and communities worldwide. For Global Handwashing Day 2010, Lifebuoy called on people across the world to pledge their support towards washing their hands with soap. To bring the pledge to life events took place across the world. For instance; Yvonne Chaka Chaka, South African singer, created an exclusive song for Global Handwashing Day called "Bumbanani" (Let's Unite Against Germs); the first lady of Sri Lanka attended a high-profile media event to discuss handwashing with soap in the country; and employees from Unilever Hindustan took part in a

school outreach community programme. This is a clear step towards Lifebuoy's target of getting one billion people across the world to wash their hands with soap.

## HANDWASHING – REAL LIFE PROOF

To test the benefits of handwashing with soap, Lifebuoy carried out a year-long, real-life study of nearly 1,700 families to see what happened when children followed the "Lifebuoy Way of Life" – washing with Lifebuoy soap on five key occasions, namely before eating breakfast, lunch and evening meal, when bathing and after using the toilet. The results were definitive. These children suffered 25% less diarrhoeal disease, and missed 26% fewer school days. The Real Life Clinical Trial demonstrates Lifebuoy's commitment to making a tangible, sustainable and long-term impact on the lives of the people it reaches (see: [www.lifebuoy.com](http://www.lifebuoy.com) for more information).

## LIFEBUOY WAY OF LIFE

By combining valuable marketing and consumer behaviour change expertise from the private sector with public partners' reach and scale, Lifebuoy and its partners can change handwashing behaviour for the better, save lives across the world and reach one billion people by 2015.

In order to reach one billion people by 2015 Lifebuoy is working with partners on the ground, to take mothers and children on a behaviour change journey. Mothers play a crucial role of partnering with a child to adopt a habit, and children adopt habits easily, early in life, and can carry handwashing messages to the family. To educate both audiences on good hygiene habits Lifebuoy and its partners are implementing school and doctors' programmes that aim to turn handwashing into an engrained habit.

Dr. Myriam Sidibe, Lifebuoy's Global Social Mission Director, says; "Through the Lifebuoy brand's social mission programmes we aim to make a difference in people's day-to-day lives – spreading positive hygiene messages through hygiene promotion activities. By changing the behaviour of one billion people by 2015 we can make a bigger impact, and ensure handwashing with soap has its rightful place on the global agenda."



To join the campaign, please contact [anila.gopal@unilever.com](mailto:anila.gopal@unilever.com) or [myriam.sidibe@unilever.com](mailto:myriam.sidibe@unilever.com)

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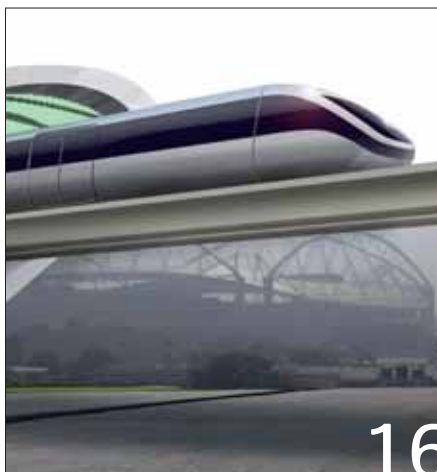
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If the world's cities cannot get their public transport systems right, traffic jams will get worse, creating greater economic loss, health and pollution problems than we can imagine now.

This is why big cities and urban regions have to plan their urban mobility systems by looking at least 30 to 50 years into the future. We already know that our world is urbanizing rapidly. Current trends show that more than two-thirds of the global population will be urban in about 30 years, the demands for urban transport will grow and grow.

Everyone has experienced the frustration of being unable to keep an appointment because they were stuck in a traffic jam, or because their train or bus was so overcrowded.

How much fuel do we lose sitting in a traffic jam in a car or a bus? How much does that contribute to the horrible smog that contaminates the atmosphere of many cities? What percentage of the city's streets are used for parking, and how can one plan for that knowing too that with the population growth, car ownership, the great status symbol of our times, may double and double again in years to come? And how many of us are aware that road accidents are one of the biggest killers of our times?

We do not have to look very hard around our world to see that unplanned urban expansion combined with under-developed public transport make for a pretty bleak scenario. Then consider the way planned infrastructure improvements, road repairs, new highways, and other transport services are delayed or compromised because of a lack of planning or poor management.

What we call 'sustainable urban mobility' – the ability to move about town easily – is the key to a properly functioning city. The success of doing business and conducting productive relationships in cities depends on sustainable, efficient mass transport systems.

If urban regions across the globe want to achieve sustainable development, they must include urban mobility as a top priority in their climate change measures. Although the demand for mobility may sometimes conflict with the need to improve the quality of the atmosphere, we cannot abandon either of these goals.

For example, the current expansion of urban rail and rapid bus systems using exclusive lanes in Brazil, Colombia, and other Latin American countries are promising signs.

The improvements have the additional benefit of promoting a green economy. Consider too the more radical approaches, such as London's congestion charge on motorists entering the city centre, or the northeast Indian State of Manipur's ban on car ownership to those without residential parking.

Experience shows us that there are three key features to future urban mobility. First, mobility plans must be integrated within



the overall urban plans for any city. Second, we need to look at how urban investments can decrease the demand for private vehicles and discourage urban sprawl. Third, we need to ensure a **political and financial commitment** for trunk infrastructure, including high capacity systems, which are environmentally friendly. Without the necessary political will there cannot be successful urban mobility systems anywhere.

Already, examples in developed and developing countries show that policies for sustainable urban mobility must take into account local community needs, thus cutting back the urge to use one's own car. Sustainable urban mobility also means new or improved infrastructure for pedestrians and cyclists.

In Freiburg, Germany, new urban development projects are designed to be close to the existing light rail system. Bogota's TransMilenio Bus Rapid Transport (BRT) System, which carries one million passengers per day, applies GPS technology for enhanced traffic flow management. These are successful examples of how an integrated approach for urban mobility can contribute to the sustainable redevelopment of the city landscape.

But the world needs more innovative ideas and technologies to help resolve our transport problems. For example, electric cars, flexible bicycle rental systems and car pools. Within the city we can also encourage more off-street parking facilities to help open up public spaces.

In other words, the problem of increased car travel can best be addressed by providing attractive, efficient alternatives both through collective and individual mobility as well as through urban planning that reduces the need for private transport.

In Switzerland, attractive transport alternatives exist based on the layout of the built environment and economic incentives and disincentives. Thanks to these measures, Switzerland has the highest per capita usage of rail transport in Europe.

China has in recent years undertaken breathtaking investments in urban metro and rail systems in many fast growing megacities. The country is also encouraging new models of bicycle sharing.

Because of the high cost of mass transport systems, national governments and local authorities have to forge new strategic partnerships. This is especially important as most local authorities do not have the necessary financial resources for such indispensable capital intensive investments.

  
Joan Clos  
Executive Director



# On foot in Mumbai, Nairobi and Mexico City

Throughout cities in the developing world, the private car rules supreme. However, for the urban majority, especially the poor, mobility means walking. In this series, four local authors each give a glimpse of life afoot in their city. And more often than not the experience is unpleasant.



Walkway in Mumbai



PHOTO © WWW.LISASTOWN.COM

## MUMBAI

By Vidyadhar Phatak

Six out of ten Mumbai residents leave their home every morning and walk to their destination. But with the numbers of cars and motorcycles ever growing, pedestrian space is under threat. In part the blame lies with a planning system which has always accommodated the needs of the private vehicle – the practice of shrinking footpaths to widen roads and release congestion is commonplace.

On most streets, conflict between pedestrians, cyclists, hand-carts and motor vehicles is intense. The problems are compounded by street vendors and squatters occupying pavement space. And all too often, the simplest of journeys becomes unpleasant and unsafe.

A sense that Mumbai city disregards the needs of pedestrians has sparked anger forcing the government to take a number of measures. The first was to create a lane along notoriously busy roads exclusively for pedestrian movement.

The second, the Mumbai skywalk, involves a series of footbridges intended to disperse commuter density away from high demand areas such as city train stations. From just one peak train, up to 5,000 passengers can pour onto the nearby streets and overwhelm the surrounding infrastructure.

Softer measures to create space for pedestrians, such as introducing a congestion charge, have been debated for the last ten years but to

little effect. The city is however, rigorously pursuing a number of high-investment transport strategies including a metro-rail, monorail and Bus Rapid Transit system. There is concern, however, that despite the millions spent on such showcase transit systems, there will be little consideration for the surrounding walking environment. As pedestrians will approach and depart these stations and stops en masse, poorly designed access routes could pose a serious safety risk.

Despite the challenges faced by pedestrians in Mumbai, the city actually showcases some very pedestrian-friendly spaces. The coastal walkway along Marine Drive is a famous example.



## NAIROBI

By Paul Muchire

Most Nairobi residents also start their days afoot, and a walk of three to four hours is typical in a place where owning a personal vehicle is a luxury few can afford.

Nairobi is a city planned for cars – even though proportionally, very few residents have access to one. Despite their number, pedestrians have been severely neglected in the city's urban and transport planning. This has serious implications for the informal economy and de facto urban poor, as their survival hinges on the city's ability to facilitate movement of people and goods.

Sixty percent of Nairobi residents are slum dwellers and provide the labour force for the

city's hard industries and informal sector. Their low earnings leave them little option other than to walk to work.

Regrettably trudging about the city exposes pedestrians to many woes. Often they have to take their lives into their own hands because there are no or very few pavements, let alone street lighting for those going home or shopping at night. If cars and errant mini buses, which do not hesitate to use any pavement space available, are not a constant threat, criminals and muggers lurking in the shadows are ever present.

Disconnected from the city, Nairobi's urban poor more often than not cannot avail themselves of the most essential services such as employment centres, medical facilities and schools. Safeguarding key pedestrian routes

is thus critical to ensuring a degree of quality of life for the urban poor.

There has however, been some positive pro-pedestrian movements of late. Project partnerships between the City Council of Nairobi, private businesses and local stakeholders have sought to create safer urban environments by developing pedestrian walkways along main avenues.

Nevertheless, attention to non-motorized transport in the new national transport policy has yet to manifest beyond lip service and the Traffic Act's safety measures for pedestrians has received inadequate enforcement. It is imperative therefore, that pedestrians demand a space in policy and planning so that our cities become spaces for *all*.

## MEXICO CITY

By Héctor Zamarrón and Roberto Remes Tello de Meneses

Across the metropolitan area of Mexico City it is estimated that each inhabitant will spend five years of their life sitting in traffic. More than half of the 22 million residents live in places where public transport is unreliable, expensive, polluting and unsafe. There are, however, two encouraging developments: a changing transport policy and a burgeoning movement of urban cyclists.

When the suburban train from Mexico City to Cuautitlan opened in 2008, it seemed impossible to approach Cuautitlan station by foot or by bicycle. From the outset, this system was planned to be fed only by suburban buses. The dilemma however, was that people were thus forced to pay two fares just to complete their journey to work – a serious issue for Mexico City's population of low income workers.

Despite the obvious benefits of efficiency (the Cuautitlan – Buenavista train covers the 27 kilometres in 25 minutes), commuters consequently sought alternative means. Anticipated to service 300,000 passengers per day, today Mexico's foremost suburban train transports just one third of this. The problem comes down

to a 'willingness to pay'. It has been observed that people are willing to add up to 100 more minutes to their commute for a saving of just MXN 8.22 (USD 0.65). On average the poorest residents are willing to pay just MXN 1.17 to save one hour of travel – understandable when transport costs consume one-third of your income.

To improve this situation, the poor require both transport subsidies and the right to recognition in the design of Mexico City. This translates to the need for pedestrian paths, connections between cycling and public transport, urban densification and integration between home and work. A 'bike 'n ride' scheme in Cuautitlan presents a good opportunity to reduce the time and financial expense of transport for the masses. The Federal District Government is making progress in this direction but has yet to develop substantive policy concerning mobility for the urban poor.

One of the voices spearheading efforts to relinquish Latin America's roads from the private car to the people is a spirited group of urban cyclists, a new urban tribe, the *Bicitekas*.

Instigated in Mexico City in 1998, the Mexican 'Bicitekas', the Chilean 'Furious Cyclists' and the Ecuadorian 'Andando en Bici Carajo',



New bike parking in Cuautitlan  
PHOTO © ROBERTO REMES TELLO DE MENESES

united to reclaim the streets from the reign of the private car.

Across Latin American cities, 70 percent of streets are devoted to the automobile. Pedestrians do not have footpaths because financing is prioritized towards freeways, flyovers and multi-storey parking lots. Cities are thus increasingly inaccessible for the walking population. Fortunately however, this is beginning to change. Across Latin America in cities such as Mexico City, Bogota, Santiago, Quito, Rio de Janeiro and Buenos Aires, public bicycle systems, paths and walkways are becoming a new part of the urban fabric. ♦



# Planning for cleaner, greener transport in Chinese cities

With urbanization now at levels never experienced before, one of the biggest concerns in China is how to maintain economic growth with less energy consumption and less harm to the environment, writes Professor **Pan Haixiao**, the Director of Land Use and Transport Studies at the Urban Planning Department of Shanghai's Tongji University.



In Shanghai part of the revenues from license plate auctions has gone to finance the construction of the city's metro

PHOTO © DANIEL BIAU



Urbanization and urban expansion will greatly extend the distances people have to travel. If we cannot find the effective urban planning and management strategy, people will rely more on cars for their travel. Then there will be serious problems of congestion, local pollution and green house emissions.

Recent experience of serious gridlock in the capital Beijing, and the wonderful performance of Shanghai's transport system in handling of over 70 million visitors to Expo 2010 show the importance of establishing a multi-modal transport system.

### Car control in Shanghai

There has long been an argument over whether we should accommodate widespread car use with a huge road infrastructure, or whether the use of cars should be limited and the development of the public transport system encouraged instead.

Many cities consider road expansion the best way to relieve congestion. But in Shanghai from the mid-1980s, part of the revenue from license plate auctions has gone into the construction of the city's metro system. The first subway started operation in 1993. How can the money collected in the 1980s be used for metro lines?

One drawback of this is that because the cost of ownership is so high, drivers will opt for a larger car than a smaller one. On the other hand, parking restrictions are an effective way of encouraging road commuters to switch to riding the city's high quality public transport systems.

### Large-scale metro plans

With high capacity and more reliable services, large cities in China with populations higher than 2 million are now all trying to introduce metro systems as the backbone of public transport. Metro coverage will be expanded, and by 2020 the metro network coverage in Beijing will be extended to 1,000 kilometres.

Today, Shanghai has 11 metro lines covering 420 kilometres. During Expo 2010 it was able to cater for 7 million passengers per day, up from the usual daily figure of 1 million. Parking restrictions keep drivers to the outer periphery and opting for the metro into the centre of town.

### Transit-oriented development

The concept of transit-oriented development

is widely accepted by local government for several reasons:

First, public transport is a central government priority. A bus cannot compete with a car when it comes to reduced travel time, comfort and flexibility. Only the metro can provide high capacity and reliable transport service, but at high cost.

Second, in the case of Shanghai with a population density of 4 million people in the 100 square kilometres of the inner ring, there is plenty of opportunity for development along the metro lines.

Third, with the cost of metro construction so high, leasing land along the lines for development in high-density areas is an important financial source offsetting construction costs.

Many metro stations are now hubs for new business, and on the periphery these hubs extend outwards to a radius of up to three kilometres in some cases – far exceeding, the 500-metre radius of the typical north American model. These stations also attract informal taxi operations, which service these peripheral zones.

### Bus rapid transit

Inspired by South American models, Beijing introduced the country's first bus rapid transit (BRT) system in 2004, followed by Hangzhou in 2006.

Today, more than 10 Chinese cities have introduced BRT networks, such as Xiamen, Changzhou, and this year, Guangzhou.

In Xiamen with a population of 2.5 million, for example, buses on the elevated BRT system carry some 210,000 passengers daily. The Hangzhou BRT network will be extended to 120 kilometres in 2013. Jinan now has six BRT lines covering 78 kilometres, while Guangzhou has one line carrying some 800,000 people daily. There is still an argument to build a metro line in Guangzhou.

### High-density land use

Urban form and the pattern of land use also will contribute to intensity of motorized travel. Low-density development will increase travel distance or car mileage.

Strict land use control policy has been applied in many cities; single-family housing development is prohibited. We still follow the neighbourhood concept in residential area development with primary schools, local shops and services available in walking distance.

### Cycling as part of public transport

Bicycles are very popular in China, accounting for 40-60 percent of travel in the early 1990s. The state code for urban road transport plan stipulates that every major road in a city must provide separated cycle lanes. In Hangzhou city, the public cycle system is considered part of the public transport system. With the strong support of government, the public cycle system develops very fast. Now there are more than 2,000 bike stations in Hangzhou.

Under the low-carbon city construction campaign, promoted by the central government, more and more people recognize the importance of cycling for a sustainable and healthy city.

The green transport policy in Beijing forbids any obstacle to the use of bicycles. The other important phenomenon is the widespread use of electric bicycles which cost only USD 270-400 and have a range of some 40 kilometres. These are much more flexible for people who travel longer distances. But there is still no clear policy on battery disposal.

With the increasing share of public transport, there is also large drop in cycling and walking.

### Innovation and green urban transport

With complexity of cities in China, there is no standardized sustainable mobility solution. We also need to explore 'grass root' innovations based on local context.

In Wuhan, for instance, the local community organized a car-pooling service that is supported by shops and restaurants. Shanghai's metro, for example, is a vital means of transport for the disabled with its full wheelchair access.

Under the central government policy for a low-carbon city and constraints on land use to reserve it for agriculture, the shifting from a car dominated urban transport policy to establish a multi modal green urban transport system is emerging in China. ♦

### Acknowledgements

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# A brave new era for public transport in Latin America

Latin American cities have many public transport systems which are innovative and successful, writes **Fabio Duarte**, Director of the Post Graduate Programme of Urban Management at the Pontifícia Universidade Católica of Paraná, in Curitiba, Brazil.



Metrocables serve barrios that are now a symbol of the urban renaissance in Medellín

PHOTO © OMAR URAN



Like many Brazilian cities, Rio de Janeiro faces a major overhaul of its public transport system as the city gears up to host the FIFA Football World Cup in 2014 and the Summer Olympic Games in 2016.

### Trams

One of its most important urban renewal projects focuses on the central area of the city, near the port district which is dominated by abandoned warehouses and a huge elevated road. The city plans to demolish the flyover, replace it with a boulevard, and to bring back trams which were abandoned in the 1950s. Only this time the idea is to have a much more modern tram system.

### Metrocable

Another interesting means of alternative public transport is the *Metrocable* in Medellin, Colombia. Medellin has a metro but that aside, its public transport system follows the Latin American archetype of old buses operating without an integrated plan. Even this kind of service was unable to serve poorer neighbourhoods. Known as *barrios*, most are located up in the hills above town. In addition to the topography, some areas were controlled by drug gangs and were notorious crime spots.

The metrocable is a cable car system which is considered ideal and more efficient than the usual public transport road and metro rail options. It has also played an important role in reducing crime in once dangerous neighbourhoods.

The city has gone to pains to ensure that the metrocable system works well by integrating its stations with those of the metro rail service, so that public access to both is easy. It has even seen to it that cultural facilities such as nearby libraries are at hand to serve the public. These *barrios*, once shunned by citizens and forgotten by the public administration, are now a symbol of the urban renaissance in Medellin.

This good example has been taken up elsewhere, and in 2010, Caracas, the capital of Venezuela, inaugurated the first line of its own metrocable.

### Metro rail versus Bus Rapid Transport

Few Latin American cities have an extensive metro rail network because for developing countries the cost of a metro system is too high. According to a 2005 report of the United Nations Centre for Regional Development (UNCRD), it costs an estimated USD 1 billion to build an average 7 kilometres of subway, whereas the same money would provide 426 kilometres of Bus Rapid Transit (BRT).

Curitiba in Brazil launched its BRT system in 1974 and today the system carries more than 2.3 million passengers per day along its 65 kilometres of dedicated road corridors especially reserved for BRT buses only. The main axes are fed by various feeder lines, and the city continues to update and improve its system. It has introduced bypass lanes and uses buses powered exclusively by biofuel along new corridors called *green lines*.

## The metrocable has also played an important role in reducing crime in once dangerous neighbourhoods.

Different BRT projects around the world have been emulated and developed Curitiba's model, with new vehicles, better information technology systems and integration with other transport modes.

Bogota, Colombia, adopted BRT with its *Transmilenio* system in 2004 and now has 84 kilometres of dedicated bus lanes. It saw many technical innovations, such as larger buses and bypass lanes for express buses which are responsible for around 40,000 passengers per hour each way. Previously, public transport in Bogota was provided by taxis, vans, minibuses, and buses. They still run and meet an important part of the demand, mainly in peripheral areas.

The metro-like carrying capacity achieved by *Transmilenio* came at a cost of USD 12 million per kilometre, five times that of Curitiba but its importance transcends public transport. It has changed the image of the city, both abroad and, more importantly, to its citizens. The municipality has built many cultural facilities near the main BRT terminals and these have inspired a revival of what Colombians call '*cultura ciudadana*', or simply citizenship, a feeling Latin Americans have almost forgotten.

In another good example, Quito, Ecuador, has 37 kilometres of dedicated BRT lanes,

carrying 560,000 passengers daily. It adopts the basic principles of a BRT system, with the advantage of using a simple and cheaper construction technology in its bus stops.

The so-called Metrobus system in Mexico City launched in 2005 and covering 67 kilometres of dedicated lanes, carries some 600,000 commuters daily along its three lines.

Finally Santiago, Chile's capital, is trying hard to put its BRT on the right track. With every potential to be a good example of an integrated BRT and metro system, an apparent lack of political negotiations and managerial skills are threatening to turn the *Transantiago* into one of the biggest BRT failures in the world.

### Cycling and walking

Sadly, while public bicycle programmes are booming in Europe, this form of transport is mostly seen as an intruder by Latin American cities.

When looking through the official BRT publications or websites, one would imagine that they are bicycle friendly. But the reality is that they are not. Bogota, Curitiba and Mexico City are all good examples of BRT but they are without facilities for cyclists such as bicycle racks.

Some cities, like Sao Paulo, with chaotic traffic, have however introduced public cycling facilities with bicycle racks at major metro and train stations.

Pedestrian zones in Latin America are sparse, and walkways like the *Calle Florida* in Buenos Aires, and those pavements that do exist, are crammed with informal vendors.

Brazil has recently taken a step towards improving urban mobility conditions. Its National Congress has approved an *Estatuto da Mobilidade (Law of mobility)*, which forces cities bigger than 500,000 inhabitants to have a mobility plan with improved pedestrian and non-motorized transport options. It is a good example of putting urban mobility on a sustainable path.

But to move beyond the good law to action requires another step, one which is too big for many developing countries.

But to end on a positive note, let us return to Bogota: every Sunday more than 150 kilometres of streets, including main roads, are closed to private and public transport. This simple and cheap idea is spreading to other cities like São Paulo, Guadalajara and Santiago, giving public space back to the people to whom it belongs. ♦



# Looking out for road safety

More young people are killed everyday from road accidents around the world than through diseases such as Aids, tuberculosis and Malaria, a shocking new report reveals. **Jonathan Andrews** explores how this preventable epidemic is being tackled.

PHOTO © FIA FOUNDATION



In June, 2010, the world's attention was firmly focussed on the opening of the football World Cup in South Africa. That same evening a little girl died in a road traffic accident. Normally this wouldn't have made it onto the news headlines, especially during the World Cup, as every year around 15,000 people die on South Africa's roads. But the girl was Zenani Mandela – the great granddaughter of former South African President Nelson Mandela.

This incident put the issue of road safety on the agenda and highlighted a health epidemic that not only causes pain for loved ones but also puts pressure on families' economic situation and impedes countries' development.

According to a recent FIA Foundation report, "The Missing Link: Road traffic injuries and the Millennium Development Goals [MDGs]", this year 1.4 million people, or 3,500 every day, will lose their lives with countless more being left injured and maimed. Three thousand of these daily deaths will occur in middle to lower income countries.

To measure it another way; more people are killed every day from road accidents than diseases such as Aids, tuberculosis and malaria, says the FIA Foundation, set up in 2001 by motorsport's governing body to promote road safety.

The report, which was released just prior to the United Nations MDG summit in September, called for road safety to be included in the MDG framework to reduce unnecessary deaths and increased poverty.

Doctor Kevin Watkins, the author of the report and an academic at Oxford University's global economic governance programme said: "It doesn't take rocket science to work out that primary school kids should not be crossing six-lane highways to get to school. Likewise, setting targets for cutting mortality rates among children aged up to five and then turning a blind eye to road deaths, one of the biggest killers of five to 14-year-olds, is not just irrational, it is ethically indefensible."

Dr. Watkins believes that at first glance road safety seems a peripheral concern for the MDG agenda, as it doesn't capture the headlines.

"Delivering life-saving vaccinations and antiretroviral drugs for HIV/Aids, financing maternal and child health programmes, putting kids in school, and providing clean water and sanitation all have an intuitive

appeal as priorities," he said. "The reason is obvious: they hold out the promise of saving lives and expanding opportunity. By contrast, issues such as road design, traffic rules, and regulatory frameworks for public transport providers appear technical, mundane, and largely irrelevant to the ethical framework that underpins the MDGs."

The report draws a direct connection between road safety and the MDGs, believing that road safety is an area in which relatively small investments have the potential to save large numbers of lives, and to prevent millions of debilitating injuries. Yet just recognizing this link isn't enough said Dr. Watkins.



Dr. Watkins in Nairobi, Kenya

PHOTO © FIA FOUNDATION

"If governments are to make road safety a priority they must see the impact of road traffic injury on their own development policies. For example, the economic impact of road traffic injuries, while difficult to quantify, is undoubtedly severe."

Financial losses caused by road traffic accidents and injuries have been estimated to cost developing countries USD 100 billion per annum. To put it into context 2009 aid levels were around USD 120 billion.

Health systems often face extra burdens from road accidents too. In Kenya, road traffic injury patients represent 45 to 60 percent of all admissions to surgical wards. In India they account for 10 to 30 percent of hospital admissions, argues the report.

"Like HIV/Aids, road traffic injury strikes hardest at people in their most productive

years," said Dr. Watkins. "It deprives countries of people who represent a vital source of the skills and abilities needed to sustain growth. And because the costs of road traffic injury are borne disproportionately by the poor and vulnerable, the effects on poverty reduction are then even more severe."

Not all of the report is for glum reading. Various successful measures are highlighted as countries are taking notice and beginning to stem the tide of death, that without action, foresees the road death toll rising to 5,700 a day within 10 years.

Rwanda has been successful in tackling the road traffic crisis through stricter enforce-

ment of vehicle standards and speed limits. In Vietnam, the death toll among users of motorcycles, one of the highest risk groups, has been falling because of a national law requiring the wearing of crash helmets. And road designers in Malaysia are working to new regulatory guidelines requiring pedestrian risk assessments.

Other issues include corruption. Many low- and middle-income police agencies have pay arrangements below a subsistence income that encourages operational police to use their road policing powers to supplement incomes – a core issue in terms of tackling police corruption.

A study, by the Johns Hopkins Bloomberg School of Public Health, of enhanced traffic enforcement in Uganda showed a 17 percent drop in road deaths. The Uganda scheme cost

## 10 reasons + 10 years = Decade of Action

- 1 1.3 million people are killed on the world's roads each year
- 2 Road crashes kill more people than Malaria
- 3 50 million people are injured, many disabled as a result
- 4 90 percent of these casualties occur in developing countries
- 5 Annual deaths are forecast to rise to 1.9 million by 2020
- 6 It is the number 1 cause of death for young people worldwide
- 7 By 2015 it will be the leading health burden for children over the age of five in developing countries
- 8 The economic cost to developing countries is at least USD 100 billion a year
- 9 Injuries place immense burdens on hospitals and health systems
- 10 Road crashes are preventable

USD 72,000 and the average cost effectiveness of the intervention was USD 27 per life year saved.

"Investment is of course needed but as the Johns Hopkins study argues, these results make it one of the most cost effective public health investments in a low-income country like Uganda," claimed Dr. Watkins. "The answer to poor enforcement and corruption is a sustained systematic approach to road policing, with international support."

One programme called 'RoadPol', which is supported by the World Bank Global Road Safety Facility, looks at traffic enforcement practices right across police command structures and encourages peer-to-peer reviews and assistance.

Not all measures necessarily need to be expensive. A survey in Kenya carried out by the International Road Assessment Programme (iRAP) found that some 70 percent of roads in certain areas had poor road markings, delineation of junctions and barrier conditions. All measures which are relatively low-cost to rectify and can have a huge impact in saving lives, believes Dr. Watkins.



Scenes like this in Vietnam are now almost non-existent due to national laws enforcing motorcycle helmet use

PHOTO © FIA FOUNDATION

## Leading causes of death by age, world, 2004

RANK	5-14 YRS	15-29 YRS	TOTAL
1	Lower respiratory infections	<b>Road traffic injuries</b>	Ischaemic heart disease
2	<b>Road traffic injuries</b>	HIV/Aids	Cerebrovascular disease
3	Malaria	Tuberculosis	Lower respiratory infections
4	Drownings	Violence	Perinatal causes
5	Meningitis	Self-inflicted injuries	Chronic obstructive pulmonary disease
6	Diarrhoeal diseases	Lower respiratory infections	Diarrhoeal diseases
7	HIV/Aids	Drownings	HIV/Aids
8	Tuberculosis	Fires	Tuberculosis
9	Protein-energy malnutrition	War and conflict	Trachea, bronchus, lung cancers
10	Fires	Maternal haemorrhage	<b>Road traffic injuries</b>

Source: Make Roads Safe

"To take just one countermeasure - according to iRAP, if you simply improved Nairobi's pedestrian crossings you could prevent over 10,000 deaths and serious injuries over a 20 year period," he added.

The campaigning not just by the FIA Foundation, but by the World Bank, various national governments and the World Health Organisation (WHO), has led to the UN declaring a Decade of Action. Due to be launched on 11 May 2011, lasting until 2021, the FIA Foundation's Director General, David Ward believes that getting the programme up and running with grassroots support was vital.

"The campaign's first public petition calling for UN action was signed by a million people around the world," he said. "There was huge support from local children's organizations including 'Safe Kids' with its local coalitions in the US, Brazil and South Africa and similarly with events around the world including our campaigning with schoolchildren in Vietnam. Indeed, it is only in working in partnership with local communities that real progress on road safety can be made."

So far 100 governments are committed to work to reduce road deaths by 2020, an objective that organizers believe could potentially prevent 5 million deaths.



The new road safety tag PHOTO © MAKE ROADS SAFE

Dr Etienne Krug, Director of Violence and Injury Prevention and Disability, WHO, is one of the key players behind the initiative, and believes that via the Decade for Action, countries will have increased access to platforms and action plans to increase road safety.

"We hope to save millions of lives and we have a very clear action plan that has been developed at the global level and should serve

to inspire countries to develop their own national plan," he said. "In some countries this is already underway, includes activities that focus on road safety management, the road, vehicle, behaviour and trauma care."

To help generate awareness of the Decade for Action, a new road safety tag was launched during the MDG summit at the Clinton Global Initiative. It aims to become the global equivalent of the red ribbon for HIV/Aids or the white wristband worn in the fight against poverty. Big names such as former US president Bill Clinton, New York Mayor Michael Bloomberg, and actress and Make Roads Safe ambassador Michelle Yeoh, were all on hand at the launch to offer support and also to ensure the message got out.

As Dr. Watkins said: "A key strategy must be to popularize these interventions, demonstrating what can be done to save lives across developing countries. The whole message is that road deaths are not inevitable but preventable."

"Of course, the aim has been to make a sustained case, with a concerted advocacy effort to push the issue up the agenda for governments and the international community," he added. "Certainly with the UN Decade of Action the drive to ensure that governments make road safety a priority will continue." ♦



# ROAD SAFETY FOR THE BOTTOM BILLIONS

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Every year, on average, 1.27 million people lost their lives due to road crashes around the world. However, the aftermath of road crashes extend even further, with 20 – 50 million other victims who suffer from injuries due to these road crashes every year. In Malaysia itself, almost 7,000 people were killed due to road accidents in 2009, and a further 24,000 suffered injuries. More than 60 percent of the fatalities in 2009 were from motorcyclists. Recent years' statistics on road accidents in Malaysia show an upward trend, and it has become a pressing concern for the nation to reverse this trend.

Realising the brevity of the situation, the Road Safety Department (JKJR) was established in 2004 under the Ministry of Transport of Malaysia to draw up and implement strategic programmes to address the issue. JKJR has been aggressively promoting its agenda, and in 2007, a research institute was established to carry out high impact research which will lead to evidence backed intervention programmes to be utilised by JKJR and other relevant stakeholders in Malaysia.

On 2nd March 2010, during the 64th General Assembly, the United Nation announced its resolution that proclaimed the "Decade of Action" for road safety, aimed at halting and reversing the road fatalities trend. The resolution comprises specific goals and objectives, with agreed upon targets.

The Malaysian Institute of Road Safety Research (MIROS), being the leading institution on road safety in Malaysia, sees this as a great opportunity to reinforce its effort in producing evidence based intervention programmes that will enhance road safety. The institute believes that its endeavours will culminate in beneficial and significant consequence not only for Malaysia, but also the region. Research activities invariably involve high costs, which deters many developing nations or low income countries from pursuing this matter. As such, MIROS, with the backing from the government of Malaysia, intends for the outcomes of its research to not only be applicable and deployable in Malaysia, but also in other countries where the need for such intervention programme is great, but the might is not. In supporting the call for the Decade of Action, MIROS is simultaneously addressing the needs of the bottom billions.

MIROS was established in 2007, but in three short years, it has managed to assemble a strong research team, who are assigned to specific fields of research according to their expertise. There are currently three separate research centres at MIROS, divided along the Haddon matrix, which address the road users, road engineering and the vehicles aspects of road safety.

In general, the research exercises by MIROS are intended to produce what we call 5-star drivers in 5-star vehicles in 5-star road environments. To do this, MIROS has already identified crucial gaps in road safety issues such as motorcycle issues, speeding and reckless driving, costs of accidents to the nation, need for data, community and road safety, and the conditions of federal and rural roads.

One of the latest developments at MIROS is the formulation of a new vehicle assessment programme called the Malaysian Vehicle Assessment Programme (MyVAP). It was developed locally by MIROS, and conforms to internationally accepted standards and regulations. MyVAP is complementary to the prevailing vehicle regulations and requirements in Malaysia. It is aimed at assisting consumers in choosing vehicles with regards to their crashworthiness. To date, two different car models from Proton and Perodua have been assessed under the programme and were certified as MIROS Safety Companions.

Another project carried out at MIROS is the development of a new database on road accidents in Malaysia called the MIROS Road Accident Analysis & Database System (M-ROADS). Taking advantage of the available accident data from the respective authorities in the country, M-ROADS is capable of providing extensive road accident data analysis including multi-dimensional cross-tabulation, black spot identification and ranking, report generation and others.

Even with current on-going research projects, MIROS continues to look for other viable projects or collaboration with external parties, which will create an impact for the society at large. 📞

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# The contribution of mass transit to sustainable cities and urban mobility

By Pierre Laconte



A glimpse of the future. At the occasion of the World Cup 2014, Porto Alegre will introduce the Coester AEROMOVEL, a pioneering low-energy wind tube-driven automated people mover (design e Arquitetura : Ado Azevedo). It was invented in Porto Alegre (implementing a 19th century Brunel project) but until now only a short line operates in Jakarta. Other pioneering projects under implementation include the Heathrow ULTRA Personal Rapid Transit system linking parking lots to the airport's Terminal 5

PHOTO © AEROMOVEL

## Transport and mobility planning – post-war trends and consequences for cities

The post-war era witnessed a shift in the attitudes of citizens towards society, in general, and urban life in particular. The French political scientist Marcel Gauchet has referred to this phenomenon as 'mass individualism'. Mass individualism is characterized by the increased consumption of positional goods – goods that position individuals in relation to others – notably freestanding, single-family houses and personal cars.

This shift in consumer preferences finds its origin in the United States. It was largely shaped through the common interests of three industrial sectors: the nascent automobile sector, which was championed by Henry

Ford, the oil sector, which had practically disappeared following the replacement of petroleum lamps by electric lighting but was revived by the oil consuming automobile, and various industries associated with highway construction and suburban development.

Together, these sectors became incomparably stronger – in political and economic terms – than the large railroad companies, which had been all-powerful at the beginning of the century. However they still had to finance their own infrastructure. By contrast road infrastructure and maintenance were from that period financed by the public sector and no longer by tolls or user charges as had been the case throughout history.

Therefore personal investment in cars was encouraged, not only by the lifestyle change result-

ing from increased household income, but also by strong public policies and market distortions.

This may be seen as the main causal factor for urban sprawl and its consequences on people, their health and their quality of life – air quality, dilution of urban and neighbourhood fabric, distances travelled – and on nature – landscapes, open space, agriculture and bio-diversity. This was analysed, among others, by the European Environment Agency 2006 report, *Urban Sprawl in Europe* (see [www.eea.europa.eu](http://www.eea.europa.eu)).

In terms of mobility, the use of the car as the dominant mode, 'auto-mobility', has entailed dramatic changes in both land use and individuals' behaviour.

As to land use, lower density and longer distances for urban trips have taken place, as



an effect of motorization. The car takes about 18 times more space than a pedestrian, as it moves, but it requires parking every time it does not move, i.e. more than 90 percent of its life cycle.

The low density effect is enhanced by the difference of scale of automobile use, up to 1:100, as compared to the pedestrian/tramway city. Trips to proximity services that were done by non-motorized modes through the shortest route became longer as they used the road network scaled for the automobile.

As an example a one way street system increases by half the average distance of trips and the amount of fuel used. Similarly spaces used for recreation and amenity are in conflict with the ever increasing demand for parking space.

As for health, the main effect has been the decline in walking as a means of transport, as muscle power gave way to fossil fuel-fed horsepower.

This had effects not only on personal mobility – increase of vehicle kilometres travelled – but on environmental health – road accidents, pollution related respiratory diseases and obesity.

The data on road accidents collected by the former European Council of Ministers of Transport, now the International Transport Forum, reveal that over 150,000 people lost their lives and a further 6 million people were injured in road crashes in the 44 countries of the Forum which reported data for 2007.

### Indicators of sustainable mobility

Indicators on mobility and land use were analyzed by the International Public Transport Association (UITP) in its Millennium Cities Database for Sustainable Mobility (UITP 2001, updated 2006). The data included demography, urban economy, urban structure, number of private motorized vehicles, taxis, road and public transport network, modal choice, the percent of transport costs in metropolitan GDP, energy consumption, pollution and the number of accidents, but not health as such.

The general findings, analysed by J. Vivier, could be summarized as follows:

- Public transport consumes on average four times less energy per passenger-kilometre than the automobile.
- The dense cities of Europe, well served by public transport and soft transport

modes, are spending much less resources for their mobility than the sprawling cities of America or Africa both in monetary terms and in terms of accidents.

- Sustainable urban mobility requires an integrated supply of built space, public transport, parking and amenities. The higher the density, the higher the patronage.



Nantes has been a pioneer of the tramways revival (1982), today complemented by a bicycle rental scheme. Tramways are not only a tool for sustainable mobility. They are an opportunity for enhancing the street network and creating pedestrian-friendly environments. Some tramway networks are using existing railroad tracks, complementing them with new tramway tracks (initiated in Karlsruhe, Germany in 1992), thus allowing seamless travel

PHOTO © VILLE DE NANTES

- Growth in income does not necessarily imply an urban development model based on the automobile and urban sprawl. There is a clear relation between public transport use and supply of parking.
- Sustainable mobility calls for an integrated transport policy combining urban planning, parking controls and public transport.

As an example, the comparison between Bangkok and Copenhagen indicates many differences.

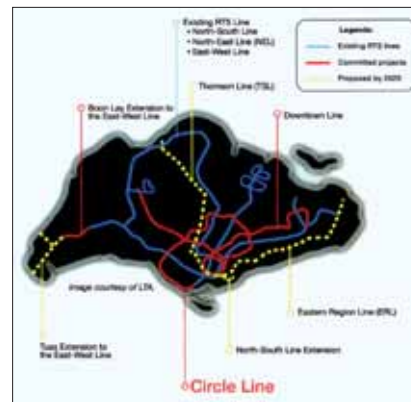
Bangkok is characterised by a high level of motorized mobility, very long and costly travel times, and poor accessibility. Road investment, recommended by the World Bank,

has been proven ill-suited to the dense urban structure of the conurbation, while public transport investment was deferred. The covering of canals with roads has markedly increased the overall temperature.

Copenhagen, by contrast, outstandingly spends only 4.1 percent of its GDP on transport, due to a combination of individual automobile restrictions and widespread use of the bicycle, notwithstanding the Nordic climate. Munich, Frankfurt, Vienna, Milan, Paris and London all spend less than 7 percent of their GDP for transport.

In any intermodal comparative exercise, a difficulty arises at the interface between transport modes. Complex daily trips, not only commutes between home and work, make a growing proportion of the total.

Calculations of cost and time are therefore in a growing number of situations difficult to make. The emergence of an efficient mode of transport serving a specific route usually entails a reallocation of trips to make use of this new mode where it is available. Cases in point are the tram networks of Nantes or Bordeaux and the driverless metro networks of Singapore or Copenhagen.



Singapore has been the pioneer of driverless high-capacity metro networks (starting with the North-East Line in 2003). Driverless means shorter intervals between trains, higher capacity and a higher safety level. It has set the standard for future metros around the world. Nuremberg, Brussels and other cities are retrofitting existing lines to make them driverless and increase their capacity

PHOTO © LTA

The Bus Rapid Transit (BRT) networks, with full right of way and outside ticketing are a valid and affordable alternative to mass rail transit. However, they use more space unless



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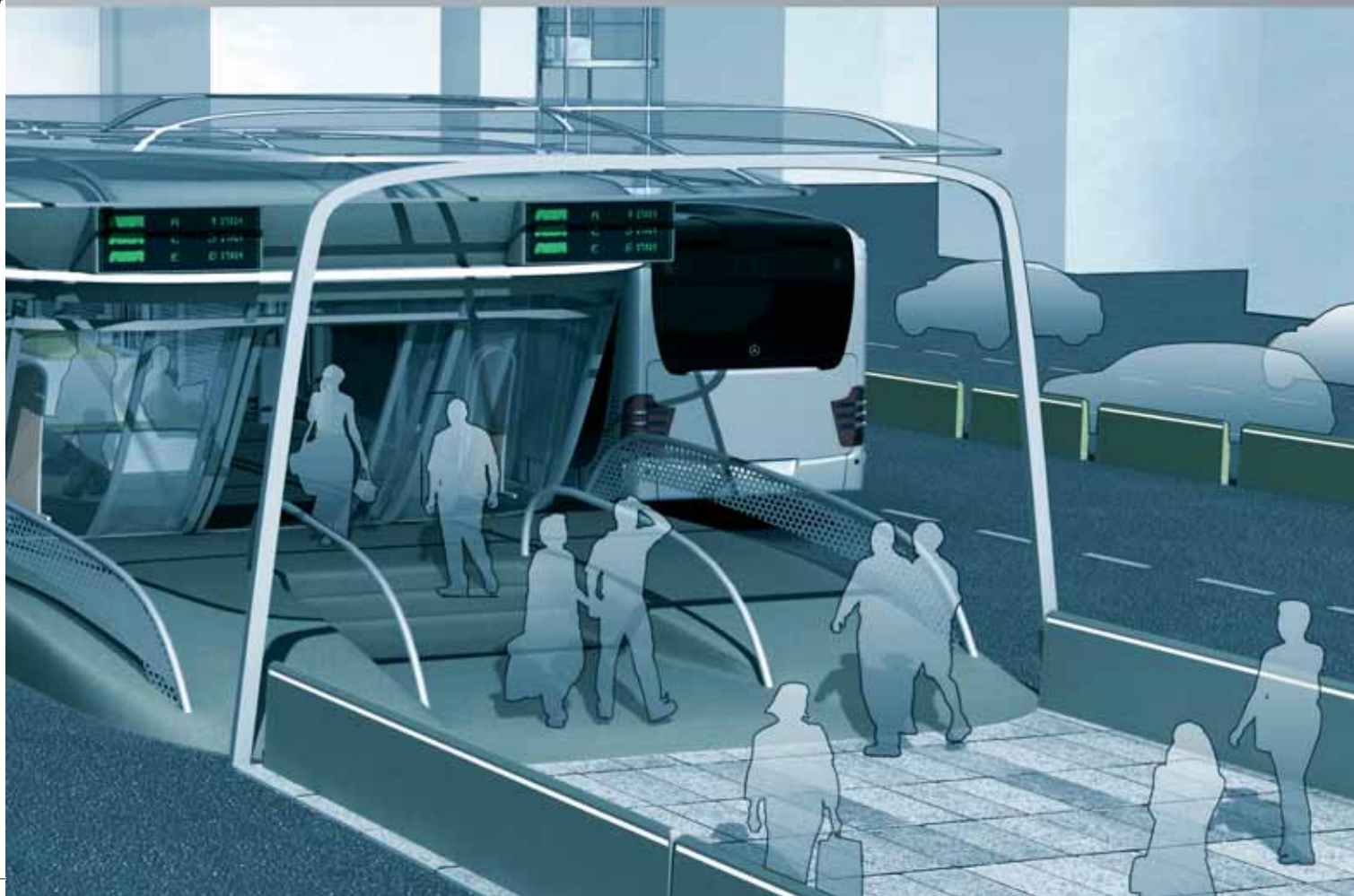
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The Bogota TransMilenio is derived from the pioneering Curitiba Bus Rapid Transit (BRT) network that started in Brazil in 1976 and has proven its mass transit capacity and has enhanced safety and security through staffed stations. BRT achieves a very high commercial speed, inasmuch it is given a total right-of-way and all ticketing takes place at stations. Note the possibility for express buses to pass the all-stops buses. In narrower roads and urban streets space can be saved by using guided buses (e.g. through an optic guiding system)

PHOTO © CIUDAD DE BOGOTÁ

the bus is guided, for example through an optic guidance system (Rouen). The pioneering BRT city was Curitiba, Brazil, starting in 1976 and still expanding. Its concept was successfully adapted by Bogota.

Within the broad category of sustainable transport modes the actual supply ranges from train or bus fleets down to fleets of collective taxis, or taxis accepting several passengers, e.g. taxis equipped with a meter allowing to share the reduction in cost for each passenger if a new passenger steps in. They are more and more common in southern European cities like Thessalonik in Greece. The net result is that people walk more and use cars less.

The availability of GPS path finding handheld devices specially designed for pedestrians should also encourage walking without having to consult a city map.

### Policies and measures for sustainable mobility

Achieving an integrated urban planning and mobility concept could include:

- Decoupling income progression from increase in energy use by citizens of a city and its region. The most obvious case in point seems affluent Singapore, among

others through its pioneering car ownership restraint (monthly auction of new licensing plates), its congestion pricing, its network of driverless subway trains linked with pedestrian malls and its most convenient intermodal and multi-use Easylink card. Singapore is considered the Mecca of sustainable transport.

- Encouraging life styles favouring non-motorized transport clusters all over the urban region, and reducing subsidies to fossil fuel. A case in point seems Copenhagen, among others through its high-density low-rise urban planning, its bicycle network (36 percent of commuters cycle), its combination of regional rail covering Copenhagen and Malmö, its expanding driverless urban Metro network and its pedestrian streets.
- Contributing to integrated mobility through effective tram/bus right-of-ways and innovative use of rented bicycles for short trips. Here the case in point seems to be Paris. The extensive use of bus right of ways (more recently also trams), protected by 'banquettes' and passenger information about waiting times has triggered a strong revival

of surface transport. The Paris bicycle 'Velib' rental scheme, which provides close to 20,000 bikes dispersed around the city, is reported as having substantially modified the lifestyle in favour of non-motorized transport, as well as having been politically rewarding. Some 30 million rentals were recorded in the very first year of operation and a 94 percent rate of user satisfaction. The scheme was pioneered in Lyon and is now replicated all over Europe, lately in London. The private investors and operators of the Paris scheme were among the 2008 *Time Magazine* 'Heroes of the Environment'. Extensions of the system to the periphery and a network of bicycle lanes remain to be implemented.

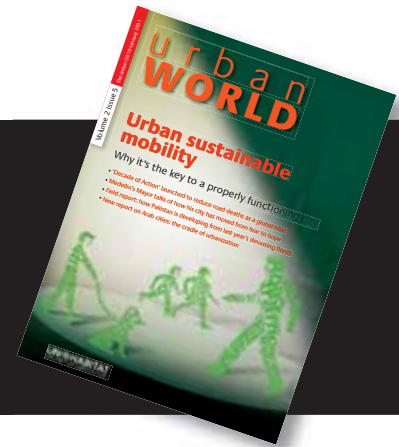
- Assessing the health effects of the switch from motorized transport to non-motorized bicycle transport. There might be a case for stronger collaboration between mobility and health services. As an example the findings of Professor Richard Davison, of Napier University Edinburgh and Chair of the British Association of Sport and Exercise Sciences, quantify the benefits of cycling according to gradient levels. They confirm that hilly cities are not at all unfit for cyclists, as is also shown by the Paris success.
- Implementing synergy between the supply of regional public transport and restraints on car use in the city. A case in point seems the City of Zurich and its Region. The on-street parking is systematically reserved for registered residents, while automobile commuters are submitted to a limitation of their parking time. Conversely rail commuters have benefited from an increased service supply. The parking measure has brought a return of inhabitants to the City (to be able to park) and has been politically rewarding, while suburban rail travel was made easier. ♦

**Pierre Laconte** is Honorary Secretary General of the International Public Transport Association (UITP), and Senior President, International Society of City and Regional Planners (ISOCARP).





# urban WORLD



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## Trend: aerial ropeways as an innovative solution for urban transport

In existence for over 2,000 years, CABLE PROPELLED TRANSIT (CPT) is quickly finding its place back in the urban environment. As cities around the globe struggle with mobility and connectivity, many are finding that standard forms of mass transit cannot cope with modern cities and traffic. With its minimal footprint, small price tag, and environmentally friendly qualities, aerial ropeways are becoming fully-integrated components of public transit systems around the world. Not only are aerial ropeways able to easily traverse steep terrain, rivers, traffic and residential settlements, but they also emit zero emissions and consume less energy per ride than other standard transit technologies.

### Systems around the world



Image courtesy of Creative Urban Projects

#### CARACAS METROCABLE

The Caracas Metrocable serves the barrio of San Agustín del Sur's 40,000 residents, providing them with two connections to the city's existing metro system. A model system, this cable link is the first in the world to include two ~90° right turns and five stations.

Other integrated urban aerial ropeways are found in Portland, Oregon; New York, New York; Medellín, Colombia; Rio de Janeiro; and more.



Image courtesy of Doppelmayr

#### ALGERIA ROPEWAY

Plagued by rapid growth, dense infrastructure and narrow roads, the two Algerian cities of Skikda and Tlecm have recently integrated aerial ropeways into their transit systems. These lines offer direct connections from residential neighbourhoods to city centres and commercial areas.



Image courtesy of Creative Urban Projects

#### KOBLENZ RHEINSEILBAHN

The first of its kind, the new gondola system in Koblenz has been specially designed for rapid transit in an urban environment. Urban Concept cabins and a reduced station footprint are tailored to the needs of existing cities.

### EQUIVALENT TRIPS BY MODE



An aerial ropeway that carries 10,000 passengers has an equivalent capacity of 100 buses or 2,000 cars



bus trips X 100

or



car trips X 2000

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# High time to change road investment patterns in Africa

Fast-growing cities throughout sub-Saharan Africa should support walking and cycling by investing in road infrastructure for non-motorized transport. Here, the UN Environment Programme's **Patricia Kim** and **Rob de Jong** explain what is at stake and what needs to change.



PHOTO © SHARE THE ROAD/UNEP

## Roads that kill

Around the world 1.3 million people are killed each year in road accidents and 50 million are seriously injured. Over 90 percent of these traffic fatalities occur in low- and middle-income countries. Road traffic injuries are the number one leading cause of death for people aged between 15 and 29 and the second leading cause of death for those aged 5-14 years. For all age groups, road traffic injuries will move from ninth to fifth leading cause of death by 2030, higher than HIV/Aids, malaria or tuberculosis.

In addition, road transport accounts for 25 percent of global energy demand, 90 percent of which is derived from fossil fuels. Already a leading contributor of greenhouse gas emissions responsible for climate change, this sector is also the fastest growing. The vehicle fleet in developing countries is set to grow from 250 million today to over 2 billion by 2050 – rapidly increasing these and other harmful emissions. Another impact of current road transport is the deterior-

ation of air quality in cities around the world. Emissions from motor vehicles are responsible for 70 to 90 percent of the hazardous substances causing major health problems, with up to 1 million premature deaths per year.

Clearly, there is a human pillage on our roads due to the way they are built and the types of transport modes they support. Especially in Africa, there is almost a total lack of road infrastructure for sustainable transport – especially when it comes to walking and cycling. In response, the United Nations Environment Programme (UNEP) launched a new programme called *Share the Road*. It advocates a shift in investment decisions so that at least a small portion of readily available road infrastructure funds are dedicated for non-motorized transport. Non-motorized transport facilities, well connected with the wider public transport network, will provide sustainable, healthy, safe and non-carbon transport for the majority of the people.

## Investments

More than USD 4 billion was invested in road infrastructure by multilateral development banks in 2005. The African Development Bank (AfDB) invested the largest chunk of its infrastructure funds, 40 percent, to transport in 2007 – more than USD 1 billion. The World Bank has approved more than USD 9 billion in new transport commitments in 2010 alone.

Despite such massive investments, the vast majority of people have not enjoyed improvements in their mobility. In fact, most people – those travelling by foot or bicycle – have lost their place on the roads. Pedestrians and cyclists, users of the healthiest, clean and resource-efficient form of transport, have been pushed out to make bigger, faster road networks for cars. Nowhere is this gross imbalance and injustice more apparent than in the cities of sub-Saharan Africa.

## Outlook in sub-Saharan Africa

Sub-Saharan Africa has the most dangerous

road network in the world, with a road fatality rate of 28.3 per 100,000 people. Despite an average GDP growth rate of 5.1 percent, which should mean ample domestic and foreign investments in road infrastructure, road fatalities are expected to increase 80 percent by 2020 under a business as usual scenario. Such a further increase is due to the fact that more than 300 million residents will be added to Africa's cities in the next 25 years. The majority of these new urban residents will rely on the most affordable and accessible modes of transport – walking and cycling.

The way to avoid the continent-wide gridlock forecast in such a scenario – one which has become reality in many parts of the world – is to build cities that thrive on an integrated, multi-modal transport system. In such efficient and sustainable systems, non-motorized transport is at the core of mobility planning.

### Current models in urban transport

Non-motorized transport has been proven to provide a quick, safe, convenient and healthy way to travel in many cities around the world. Amsterdam and Copenhagen are the long-standing leaders in cycling, where currently 37 to 55 percent of residents cycle to school and work. Such high modal shares were made possible through decades of investment in the necessary road infrastructure which continues to this day. The Dutch government has pledged USD 160 million between 2006 and 2010 for more cycling paths, parking and safety measures. The Danish government has committed more than USD 200 million to reach the goal of 50 percent cycling by 2015. Indeed, Denmark's non-motorized transport travel translates to more than 90,000 tonnes of CO<sub>2</sub> emissions reduced per year.

Numerous other cities have moved away from the older car-centric urban models. London, Paris, Barcelona, Oslo and Freiburg in Europe, New York, Portland, Washington, Toronto and Montreal in North America, Curitiba, Bogota, Mexico City, Buenos Aires and Guadalajara in Latin America, and Huangzhou, Beijing, Shanghai, Delhi and Jakarta in Asia are just some of the many examples.

Some of the most notable examples are from China. The Chinese government has made a U-turn policy, back in favour of supporting non-motorized transport in cities, after having banned bicycles from certain city centre roads. In 2006, the Chinese government ordered

cities which had narrowed or removed bike lanes to restore them.

### Africa can leapfrog

History shows that a balanced mix of transport modes should be supported by a city's road infrastructure. Otherwise, a massive gridlock occurs, costing up to 4 to 5 percent of GDP a year – simply unaffordable for many countries. The economic costs further increase when the impacts of air pollution and climate change are taken into account. Moreover, without facilities to protect them from high-speed traffic, pedestrians and cyclists are disproportionately killed on roads which follow an outdated car-centric model.

Africa, and sub-Saharan Africa in particular, has an opportunity to leapfrog and add non-motorized transport to the existing urban road expansion. Road infrastructure is one of the priorities on the continent for economic growth, both at the national and household level. In making investments in road infrastructure, African cities can capitalize on the already-high modal share of walking and cycling by providing quality road infrastructure for the safe and continued use of non-motorized transport. Such facilities like footpaths, cycling paths and crosswalks cost a fraction of other road infrastructure investments. Furthermore, this low cost will be more than offset by the cost-savings from fuel alone, which, when added with the benefits of a healthier population, make non-motorized transport road infrastructure investments highly cost-efficient.

### Time for change

There are noticeable signs of renewed donor interest in urban transport. Also, more and more city governments are taking pro-active measures to improve their transport systems. But stronger efforts are needed to make sure the road networks being developed are the best of its kind: offering all users multiple mobility options that minimize harmful impacts on society and the environment.

The critical change needed at the level of decision-makers in government and donor agencies is to systematically allocate funds for non-motorized transport road infrastructure in all urban transport investments in Africa. Even a small proportion of funds would go a long way in making investments more accountable and beneficial to the majority of the population, instead of the minority of car users. In turn, such

## Share the Road



*Share the Road* is a recently launched initiative by the UN Environment Programme (UNEP) with the key partner, the

FIA Foundation for the Automobile and Society (FIA Foundation). Working closely with governments, donors, and investors, the key objective is to advance investments in road infrastructure for non-motorized transport (NMT), as a systematic allocation in all urban transport projects. In November 2010, the first global report *Share the Road: Investment in Walking and Cycling Road Infrastructure* was launched at UNEP Headquarters in Nairobi, Kenya, attended by governments, donors and other stakeholders from six East African countries. In addition to the on-the-ground showcase project with the Kenyan government in Nairobi, *Share the Road* will be engaging with further partners to develop investment policies and more demonstration projects in East Africa for 2011.

investments will support governments in meeting the overarching goal of poverty reduction, as envisaged in the Millennium Development Goals.

For Africa it is not too late. In Africa, the majority of people are walking or cycling. It would be a major mistake to ignore lessons learnt and invest only in infrastructure for motorized transport. Investment in road infrastructure to support walking and cycling as a viable mode of travel will create a cleaner, low-carbon, safer and more enjoyable urban living environment.

The only question remaining is when to make the necessary decisions to change investment patterns. The millions of people moving around our cities, going to school and work, going to meet friends and family, by foot or bicycle would say that time is now. ♦

**Patricia Kim** is the Task Manager for the *Share the Road* initiative, one of four UNEP programmes in sustainable transport. **Rob de Jong** is the Head of the UNEP Transport Unit.



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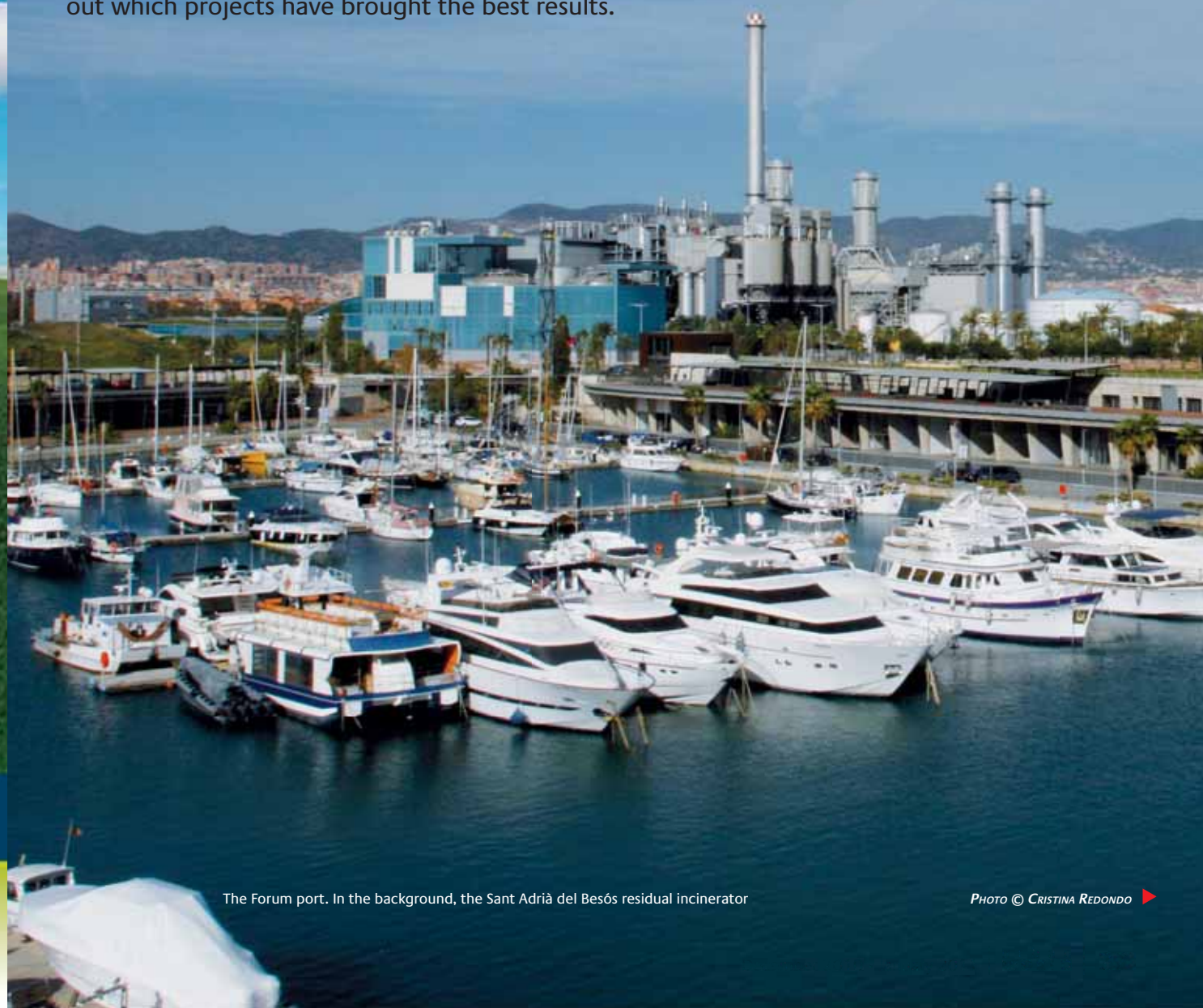
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# How Barcelona is aiming to become the leader in sustainable urban planning

In the last three decades Barcelona has tried to implement sustainable urban planning in different ways and with different projects. **Jordi Pérez Colomé** asked various experts to find out which projects have brought the best results.



The Forum port. In the background, the Sant Adrià del Besós residual incinerator

PHOTO © CRISTINA REDONDO ▶

**S**ustainable urban planning is concerned with three aspects. First of all ecological considerations: it must reduce the city's impact on the environment. Secondly, economic: it must try to save money, and thirdly, social: it must improve public spaces for the people who live there. The three which received the most consensus in Barcelona were: the renewal of the seafront and the Forum, the super street blocks and the refurbishing of the Eixample and other neighbourhoods.

### The seafront and the Forum

Thirty years ago Barcelona had its back to the sea. An industrial zone separated the city from the Mediterranean. In 1986, with Pasqual Maragall as city mayor and with the Olympic Games on the agenda, which were going to be held in 1992, the city's relationship with the sea was about to change. One of the main merits of the city's renewal was to give Barcelona 10 kilometres of beaches. "This project is incredibly sustainable because it unburdens the beaches on the outskirts of Barcelona of millions of bathers every year," says Ramon Folch, a biologist and general director of an environmental management study. This constitutes an enormous saving as far as beachgoers travelling to and from beaches is concerned and therefore of carbon emissions. The more fragile ecosystems of less equipped beaches are also put under less stress.

This change also brought with it improvements in water quality. The sea could no longer be a sewer. The waste that was poured into the sea now had to be treated. This brings us to the final step in the recovery of the seafront: the Forum. The Forum Park is next to the sewage treatment plant and the incinerator. "It's a revolutionary idea to imagine and be able to build a public space on top of the city's sewage", commented architect Josep Bohigas. The park had to be built on a level above, 11 metres high, to cover the treatment plant; that's why it slopes upwards.

Ramon Folch was on the Urban Strategies advisory council, which launched the project with Joan Clos as mayor: "In the same way as the kitchen and the bathroom are a part of the structure of a flat, the Forum had to be inside the city". In addition to providing the city with another leisure space and its solar panels, which can generate electricity for

1,400 homes, the space brings added value to the surrounding buildings: "Without the park next to the treatment plant and incinerators," said Folch, "it would have been impossible to set up the Besós university campus, which has recently been inaugurated."

The sustainability which the Forum complex has brought with it does not end there. All this is very well, but it's not enough, commented architect Enric Ruiz-Geli. The great added value of this project is that the Forum sewage treatment plant and the incinerator produce energy for the nearby 22@ district. With the Districlima system, the heat that is produced is used to make hot and cold water circulate in the subsoil of the district. The buildings that wish to can connect to this network (in September 2010 there were 56). In this way they save money on heating and air conditioning and what's more, they do so with energy that is produced without pollution. Ruiz-Geli, author of the Mediatic building that was inaugurated in January 2010 and is connected to the network, believes that without "energy innovation you can't talk about sustainability".

The project has also had its drawbacks. The central building – the Forum building by Herzog and De Meuron – has not been used for a fixed purpose since 2004 and won't until 2011, when it will house the National Natural History Museum of Catalonia. According to Ascan Mergenthaler, partner of Herzog and De Meuron, the building was designed without knowing what it was going to be used for.

While the Forum was being built a new neighbourhood was also built alongside it. Urban planner Jordi Borja believes the project was badly managed: "The Forum operation was not properly conceived and has led to real estate speculation". The planning of the area was patchy and bore little relation with the rest of the city.

### The super street blocks

For urban planners who are concerned about sustainability, the main enemy is the car. According to Salvador Rueda, director of the Urban Ecology Agency of Barcelona – established with mayor Clos in office – in Barcelona cars occupy 65 to 70 percent of public space, whereas only 25 percent of journeys are by car. Traffic, according to Rueda "is the factor that consumes the most energy, that







Barcelona's sewage treatment plant in the middle of the Forum. In the background the emblematic blue triangle building by Herzog & de Meuron

PHOTO © CRISTINA REDONDO







Ramon y Cajal street, in the Gracia neighbourhood, forms part of one of three 'supermanzanas' (super street blocks) in the city. Cars and pedestrians share the footpath at the same level

PHOTO © CRISTINA REDONDO

emits the most atmospheric pollution, makes the most noise, causes the largest amount of external deaths (through accidents or pollution), causes the most visual intrusion and makes people lose the most working hours". In short, it is the least sustainable.

Rueda has thought up a way of reducing the use of the car in the city: *supermanzanas* or super street blocks. Super street blocks are groups or islands of houses with a width of 400 or 500 metres where cars only enter for small final journeys and circulate at 10 kilometres/hour. Private cars can only run at normal speed on streets which are outside the super street blocks. Rueda thinks that this project could be introduced throughout the whole city of Barcelona if private traffic were cut by 25 percent. It's a project that would change the life of the city.

Today, there are three super street blocks in Barcelona: two in the Gracia district and one in La Ribera. The most important thing is that the super street blocks are not roads for cars to pass through. If a car enters into a super street block, the direction of the streets

leads it out again towards a main street. (A system of rising bollards is also used to only allow entry to certain vehicles during set time slots.) There is a single street pavement, in other words, cars and pedestrians circulate at the same level. The barriers that cars need to pass through to enter the super street block remind them that they are accessing a space where they do not have right of way.

The big advantage of the super street blocks is that they create a new public space (43 percent of the Eixample district, according to Rueda, would be for pedestrians): Other things could be done in the spaces that are currently taken up by cars. Architect Josep Bohigas set about imagining the new 22@ district, what could take up those streets and their crossroads which freed a space similar in size to the Plaza del Sol of Barcelona. Bohigas' suggestions are spectacular: "What's there to prevent us from building a swimming pool, a sports field or a small zoo for nearby schools?" he says. The streets could be laid out as long parks with different uses.

Although for the time being there are three super street blocks in the city, Rueda has a map of Barcelona posted on the wall of his office showing the whole city organized into super street blocks. The new bus routes – much more rational – would run more frequently, some streets would run in the opposite direction and the average speed of private cars could be increased. The project would demand building new underground car parks so that vehicles can park close to all destinations. The project in Barcelona has been put on hold but the same idea is being implemented in Vitoria – a much smaller city.

The most radical part of the Vitoria project is the final planning of the city on three levels: in addition to the normal street level, cars and vans can circulate underground for loading and unloading and the roof terraces of buildings could be turned into green zones open to the public.

The big problem with the super street blocks are the big changes that are needed to introduce them. Large streets in Barcelona today, such as Aribau, would be turned into



A 'Bicing' station next to the promenade

PHOTO © CRISTINA REDONDO

pedestrian areas. Vitoria constitutes a good example of these passing difficulties. When the city changed all its bus routes and bus route numbers overnight "people wanted to kill me," explained Rueda, "although they would probably give me a prize now". Super street blocks may constitute the promised land of urban planning but it won't be easy to get there. Politicians will think twice about it.

### Neighbourhood renewal

The third big project is more comprehensive: neighbourhood renewal. Perhaps the most outstanding case is that of the Eixample. For Jordi Borja, renewal in this neighbourhood entails "a series of initiatives that, for example, have ensured a balance between residential housing and offices in the neighbourhood".

According to Amador Ferrer, the Barcelona Metropolitan Area Territorial Planning coordinator, it all began with "the Eixample refurbishment ordinance, which among other things stopped indiscriminate demolition of buildings"; the first building to be

saved was on the corner of Balmes and Vergara Street. The ordinance also set a limit to the maximum height of new buildings, "taking off the pressure for building higher buildings in the centre of the Eixample". This was followed by the recovery of street block interiors and traffic decongestion by building ring roads.

As far as Borjas is concerned, in addition to the Eixample there are three cases of neighbourhoods which have undergone well thought out renewal: Ciutat Vella, Poble Nou and Nou Barris. These are three examples of how to transform a zone of the city without it losing its character and its balance.

### Public transport

Public transport in Barcelona has undergone substantial improvements in recent years. To begin with, the State, the regional government and the city council reached an agreement to set up a single fare system. This makes it a lot easier for people to get around the city especially for people from the outskirts of Barcelona. This is not a unique innovation of the city but rather an adaptation to what worked

best. But it had to be done; a lot of cities in the world still don't have it.

Secondly, the Bicing bike sharing system. This project has had its ups and downs. Its greatest merit is that it has made the bicycle popular. According to architect and professor, Albert Cuchí: "The important thing is to transform the transport culture in the city, although it seems to have been strangled by too much success". There are two problems to commuting by bicycle in Barcelona: on the one hand, despite the success with the bike lanes, bikes still haven't been segregated from pedestrians and cars. Secondly, and this is more difficult to overcome, Barcelona is built on a slight yet constant slope. The bicycle will never be a mass means of transport because certain age groups don't ride bikes.

These are the key sustainable urban projects that Barcelona has implemented or is carrying out. Some of them have set an example for the whole world. The city has often taken sustainability into account in forging its future. However, it has not always been possible to turn wishes into reality. ♦





# Singapore housing policy – the ultimate best practice?

By Daniel Biau\*



The HDB towns are one way of managing Singapore's 100 percent urbanization rate

PHOTO © SINGAPORE HOUSING AND DEVELOPMENT BOARD (HDB)





**F**ifty years ago, the self-government of Singapore created the Housing and Development Board (HDB). When the country became fully independent in 1965 the first Prime Minister, Lee Kuan Yew, saw dilapidated housing and slums, which were widespread at the time as the most visible mark of under-development.

He also had the vision of quality housing playing a key role in nation-building, giving an identity to a city-state where various communities had to learn to live and work

together. HDB was the instrument required to promote public housing on a large scale, to make good use of public subsidies and deliver adequate housing for all citizens.<sup>1</sup>

Singapore is today a most advanced Asian Tiger, a well-organized and prosperous 'first world' country and global city. Its GNI per capita is close to USD 35,000 (on par with Italy). Its exports have grown at an average rate of nearly 10 percent in the last 20 years and have reached USD 300 billion. Its unemployment rate stands at a low 2.2 percent, its fertility rate at a very low 1.2 percent, (a serious problem of an ageing population), its urbanization rate at 100 percent (a record and a chance). Singapore counts 5 million inhabitants (citizens 3.2 million, permanent residents 0.5 million, foreign workers 1.3 million). Residents live in well-designed and comfortable housing estates (known as HDB Towns, 26 so far), generally in high-rise buildings (between 12 and 21 storeys, and sometimes up to 40 or even 50 storeys) with community facilities, green spaces and easy access to mass transport lines (buses and metros).

In 50 years HDB, one of the largest public developers in the world, has produced more than 900,000 flats that house 82 percent of the resident population (i.e. more than 3 million persons). The vast majority (95 percent) of these units have been sold at subsidized prices to middle-income families, whose monthly incomes should be below USD 5,700 USD (SGD 8,000) in 2010. The historical evolution has been as follows: 11,000 units built per year in the 1960s, 24,000 in the 1970s, 30,000 in the 1980s, 26,000 in the 1990s. In the last decade, production has gone down as the demand is largely met.

Impressed by HDB's performance, visitors usually raise two types of questions. The first category relates to the design and livability of the towns created by HDB, particularly to the vertical building pattern which is a trademark of Singapore. The second is about the allocation of public money to reduce selling prices, the share of national budget devoted to housing and the subsidy strategy which constitutes the backbone of HDB success.

On the issue of vertical housing, the government has no shame, quite the opposite. The main argument is the need for a small island (710 square kilometres) to maintain high building densities if it wants to preserve its natural environment.

In fact, despite all the high-rise developments, urban densities remain relatively low in Singapore (compared to Hong Kong for example). They average 100 units/hectare and could be achieved in other ways, through more compact estates of lower heights. It appears that the systematic high-rise option is not a mere consequence of the high-density search. Rather it seems to reflect the cultural aspirations of the leaders, as well as the population, to live in a 'first world' environment: a world where skyscrapers are combined with extensive services, where community bonding goes hand-in-hand with modern technologies, where strong family values are translated in generational proximity (vertical and horizontal).

Critics would add: where efficiency comes first, and pleasure second. Singaporeans are indeed proud of their buildings, of their modern infrastructure, but also of their shared Asian values, even if those values have no visible impact on the architecture of their towns. Indeed most housing estates in Singapore are better designed (with standardized apartment types) and better maintained than their equivalents in the Western world. But they have a similar look.

It may be considered that physical verticality is becoming a typical Asian value, opposite to the western villas and maisonettes which constitute a symbol of social individualism and of the division of public spaces. Vertical Singapore, Hong Kong and Shanghai probably represent the future of Asian cities. In most surveys<sup>2</sup> Singaporeans respond that they prefer to live in the highest floors which provide better views and some breeze, and where probably one has somehow the feeling of 'dominating the world'. In a recent household survey (2008) 96 percent of residents expressed satisfaction with the quality of their flats. Since the 1990s, HDB has moved beyond housing per se towards creating quality living environments and spatial identities. Landmark buildings, landscaping, open spaces and special architectural features have been included to achieve a visual identity for each town.

In terms of housing finance, the Singaporean policy can be analyzed as an anti-Bretton Woods model. Far from all World Bank prescriptions, it relies on heavy subsidies which are not specifically targeted to low-income groups.

These subsidies could be compared to an indirect salary as they increase the purchasing power of the beneficiaries by up to 20 percent. ►





In 50 years HDB has produced over 900,000 flats PHOTO © SINGAPORE HOUSING AND DEVELOPMENT BOARD (HDB)

From 1960 to 2008 the cumulative government grants amounted to USD 14 billion. This is considerable and on the increase in recent years, reaching up to USD 50,000 per unit. Unfortunately as the overall government grant is used to finance not only housing development, but also the operating and capital expenditure of HDB, it is impossible to compute precisely the grant received per unit of HDB flat.

Interestingly subsidies are not allocated at the start of the fiscal year but on a monthly basis to cover HDB operating deficit. Of course subsidies also boost the construction industry and therefore have an impact on both the supply and demand sides of the housing sector. The annual amount allocated to the sector (USD 1.3 billion in 2008/09) represents about 4.5 percent of the total government budget.

Housing has been a driving force of the economy, particularly in the 1980s and 1990s. The end result today is remarkable. Of course money had to be available and therefore the Singaporean model cannot be easily applied to less developed countries. But it can inspire a number of emerging economies which are trying to join the 'first world' wagon.

Singapore had the advantage of its small size and of its simple and flat governance structure. More than a city-state, it is primarily an international metropolis that benefits everyday from the globalization of the world economy.

Its public housing experience could be useful to many emerging cities, provided they have the power to mobilize and allocate resources without too much interference from higher authorities. The People's Republic of China has understood this lesson and decentralized many responsibilities to city-level bodies during the last 30 years. A radical compulsory land acquisition policy has also been a key factor of regulation and control of the land market in the city-state.

Three additional remarks must be made.

On one hand, HDB has promoted, since 1982, maximum home-ownership, mainly to ensure societal and political stability. Its rental stock is limited, amounting to about 50,000 units; it targets low-income families and the elderly. This strategy is appropriate in view of the size of the country and the easily available public transport options. It would not be suitable to larger countries with younger populations and fluctuating or volatile labour markets, which require more rental opportunities.

On the other hand, the HDB resale market is quite dynamic (30,000 units per year) as households can sell their flats after five years at market prices and then de facto pocket the initial subsidy (the median resale price of a four-room flat amounted to USD 230,000 in 2010). Finally the management of HDB

estates falls under the responsibility of town councils, which charge modest monthly fees to all families for maintenance and improvement purposes. In the meantime, HDB undertakes renovation or redevelopment schemes of its estates on a regular basis.

The public housing production system of Singapore is therefore comprehensive. It covers all necessary steps, from land-use planning (in collaboration with the Urban Redevelopment Authority, i.e. the national urban planning agency) and aggressive land-acquisition, to design and construction (by private enterprises, at an average cost of USD 1,000 per square metre), allocation (with ethnic quotas), sale (housing loans at 2.6 percent interest rate), estate management and renewal, and possible resale on the open market. With its 4,900 employees HDB is clearly the central actor and driver of this system. Its operations are sometimes spectacular<sup>3</sup>, often forward-looking and always demand-driven.

World experience shows that all successful housing policies have been based on dynamic, innovative and well-managed housing developers. Singapore is a case in point, a symbol of the importance of political will and resolute continuity. It won the World Habitat Award as early as 1992, a few years before the launch of UN-HABITAT's Best Practice Programme.

HDB certainly deserves the Habitat Scroll of Honour which it received in October 2010 for its 50th anniversary. It is now looking forward to the inauguration of its one-millionth apartment. ♦

*\*Daniel Biau serves as the Director of UN-HABITAT's Regional and Technical Cooperation Division.*

- 1 A United Nations expert, Albert Winsemius, played an important role as Chief Economic Advisor to the Prime Minister from 1961 to 1984. He provided policy recommendations on industrial development and encouraged government investment in large-scale public housing programmes.
- 2 See Yuen B., 2007, *Squatters No More: Singapore Social Housing*, in Global Urban Development Magazine
- 3 Such as the recent 50-storey Pinnacle@Duxton of 1,848 apartments in seven towering blocks linked by two sky-bridges.





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INTERVIEW

Mayor of Medellin

# A new dawn for Medellin

Medellin, Colombia, has achieved some painful records in its turbulent and often violent history. **Vicente Carbona**, spoke to the Mayor, Alonso Salazar, of how the city has reconstructed itself and moved from fear to hope.

Explora Park, an urban space dedicated to science, technology, and public events

PHOTO © MEDELLIN CITY HALL



**Urban World:** Medellín has always been a frontline city with its early industrialization, its transport network and its education centres. It is also at the frontline of the 100 Cities Initiative. What does it stand out for as a global leader in the 21st century?

**Salazar:** Medellín has worked hard in this century to improve education and the democratization of knowledge, a long-term strategy for social equity and competitiveness. This has brought with it a much more inclusive human reordering, the transformation of working class neighbourhoods to promote development by generating a meaningful architecture for communities which in turn fosters pride and identity. All these strategies have been part of an approach to create a more inclusive society with a more egalitarian social policy.

**Urban World:** The latest opinion polls are encouraging...

**Salazar:** Like any other city in Latin America we have had our ups and downs, but on the whole the city moved on from fear to hope; it moved on from a time where it was ridden with drug trafficking and violence to a state of affairs where, although these issues obviously don't just disappear, the city has an agenda open to the world. It is now receiving visitors, recognition, and people are much more optimistic that things are going to be better tomorrow.

**Urban World:** In managing to pull itself out of this recent traumatic past, what lessons can Medellín offer to other cities in similar predicaments?

**Salazar:** Well, we reached the point of no return in the 1990s, where a city of two million inhabitants broke some painful records such as the highest homicide rate ever recorded in the city with 444 homicides for every 100,000 inhabitants. These figures are by themselves an indication of the magnitude of the tragedy. But, what is more, all the cultural destruction, the loss of institutional order, of the fabric of society, is something that our societies pay for very dearly. Then, especially during the 1990s, we saw the beginnings of a process of social reconstruction. Initially, society at large played a much more active role than the state as such, in the fight against drug trafficking and violence. And perhaps that's why there was always a strong component of demands from the fringes of society, from

young people. This was something that had a significant impact on social life.

**Urban World:** And so the most important lesson?

**Salazar:** The way I see it, in some countries, and this has happened with us, the fight against drug trafficking ends up involving a fight against certain sectors of the population, singling out young people as a symbol of evil, which represents a failure to separate

poor people, the whole society which grew around mining in the 18<sup>th</sup> century, and then in the 20<sup>th</sup> century around the industrial boom, all this concept of civic mindedness, all this pride of identity, which is known here by the name of *antioqueñidad*, from the name of the region (Antioquia), all this went to the dogs because of the influence of drug trafficking, which was not just economic and criminal but also overwhelming from a cultural point of view. That's what made this society – and it



Mayor Alonso Salazar greets families who have acquired new homes in Ciudadela Nuevo Occidente, where the Medellín City Hall has built close to 10,000 public housing units  
PHOTO © MEDELLIN CITY HALL

the issue of the criminality of drug trafficking from its social effects. I think that the important lesson we have learnt in Medellín is that within our legal system, and this is open to debate, we need to combat drug trafficking, but not turn this into a war against certain sectors of society.

**Urban World:** What were the keys for changing the economic, political, social and urban paradigms that stood in the way of progress?

**Salazar:** It was a process in which society reaffirmed itself in pride of identity, in the work ethic; a self-made society because it had always been far away from everything. Ever since colonial times, this used to be a place which was very difficult to reach. And here,

continues to make us, because we're not talking about the past – think every day in terms of integrating society.

**Urban World:** What was the most difficult thing for you as mayor during your first months in office?

**Salazar:** The ups and downs we have gone through, because the violence did not continue to go down in a straight line but we have had a series of setbacks since the 1990s. I was the one who had to deal with these setbacks in the number of homicides, in other words an increase in the crime figures, which fortunately we have got under control again. This goes to show that it is crucial in these societies where drug trafficking has a significant presence, to generate a sense of



## INTERVIEW Mayor of Medellín



Aerial view of Unidad Deportiva Atanasio Girardot, Nuevos Coliseos

community. It's a painstaking job, every single day. Fortunately we have made the grade, but it's not easy.

**Urban World:** What do you feel most proud about?

**Salazar:** What really moves me in public life, in politics, are the social issues. Social issues such as the fight against poverty, child care. I am very proud of our accomplishments and the recognition these programmes have received from UN-HABITAT. And, what's more, we are growing. We are seeing these follow-up questionnaires which are confirming that we are doing our job. Because I believe we need to have a very productive and competitive society and we are also working towards this. But when we have achieved redistribution through development, then the job will have been completed.

**Urban World:** How did you transform Medellín?

**Salazar:** I have built my whole life around the city. In my private and professional life I have done nothing else but work... for Medellín, for its communities, writing about them, doing the research. And, like all those who have entered relatively late into politics, to use the religious expression, of 'late vocation', as far as electoral politics is concerned, along with my predecessor Sergio Fajardo we both took this decision spurred on by social realities. And what we did was to gather together a lot of people who had thought about and studied the city but who were outside the decision making centres and we told them that they had to get involved and think about the city and how to transform it, and that was the qualitative leap that we made in our way of governing, with the participation of the academic world and with political decision making capacity.

**Urban World:** How important do you consider the participation of all stakeholders

to be for the city's sustainable and equitable development?

**Salazar:** The majority of our problems require the setting up of public-private alliances, either with universities, with the guilds of production sectors or with different kinds of specific corporate foundations.

**Urban World:** Some examples ...

**Salazar:** When we think of these projects and their sustainability we very often resort to these types of alliances and, if for example, we build quality children's playgrounds, we know that the problem has to do with the contents and the long-term. And that's a good example of what Medellín has done. For example, the Library Parks, which are spaces for the entire community, where books and learning are no longer seen as boring or for intellectuals, and which we jointly manage with the Cajas de Compensación Familiar. They now constitute a model of cooperation between public and private







PHOTO © LUIGI BAQUERO, MEDELLÍN CITY HALL

bodies. In this particular case, the private sector covers almost 50 percent of the operating costs. The Library Parks have been running for almost five years now and have had 10 million users. This makes us very proud and we know that we probably wouldn't have been able to achieve this without them.

**Urban World:** What does Medellín expect to accomplish and communicate by participating in the 100 Cities Initiative of UN-HABITAT's World Urban Campaign?

**Salazar:** Basically, with the 100 Cities Initiative we expect to learn a lot and share what may be useful. We know that cities can take very significant steps in these types of relationships and spend a lot of time helping each other.

We are aware that a lot of the success the city of Medellín has had is because we paid very close attention to the experiences of other Colombian, Latin American and European cities

and chose very positive things which helped us to build a transformation model. Some outstanding examples are the city of Barcelona in Spain, Guayaquil in Ecuador and Curitiba or Porto Alegre in Brazil. And we are currently co-operating with Rio de Janeiro and with another Colombian city, Soacha, in Cundinamarca (Colombia), transferring all the process of comprehensive projects and local networks systems. In the previous period we started out with pencil in hand taking down notes of all the good things we saw in these other cities, including our own capital, Bogotá.

**Urban World:** What other initiatives in the 2008-2011 development plan are currently in the planning phase for the future of Medellín?

**Salazar:** Given that our mandates are for four years and there are no re-elections, we are currently practically finishing everything to do with the administration and the development plan is in full swing. And we are going to let it continue with the priorities we set down originally.

**Urban World:** What's new here?

**Salazar:** We are working very hard on the issue of the environment. We are shortly going to inaugurate a 1,700-hectare park which is already equipped with a Metrocable system to promote the use of this public space. It's called Parque Arví. It's in a valley which is full

we are giving ongoing support to modern and successful projects because, given the fact that people cannot be re-elected for the same posts, we proposed to the citizens the possibility of re-electing the projects themselves. These successful projects in urban contexts are being replicated in other areas of the city.

**Urban World:** As city mayor, what does the UN-HABITAT Scroll of Honor Award, recently given to the city of Medellín at the Shanghai Expo, represent?

**Salazar:** It represents a great honour because it goes without saying that the task of governing is highly complex, and the indicators at times tend to turn somewhat lukewarm. But the fact that bodies such as UN-HABITAT appraise these projects and find them meaningful... this also helps us to value what we do and to continue conquering spaces and overcoming challenges and projecting a good image of the city in the context of governments, multilateral agencies, and in the realm of world politics.

Recovering from the tragedy of drug trafficking and violence that devastated our city is no easy matter. These awards and recognitions for us probably represent much more than they do for other places. They have enormous significance and we transmit this to our citizens and to all the bodies and organizations that take part in the projects, the pride we feel for receiving such an award.

**Urban World:** As a journalist and social communicator, what message would you send out to other mayors urging them to take part in the 100 Cities Initiative?

**Salazar:** The fundamental issue for me is learning. I think that organizations such as UN-HABITAT and the 100 Cities Initiative open up a channel that it's a pity we didn't have years ago, but that today, in the complex circumstances we live in, with drug trafficking and violence still ravaging up and down the continent, I think we need to look at one another and come closer and share so many things. I strongly believe that governance and social inclusion are a part of this relative growth that we are seeing in Latin America and that we are not going to have more *lost decades* like we have had in the past. I trust that we have taken the edge off these conflicts and that this city will continue in its unstoppable transformation. ♦



Medellín Mayor Alonso Salazar and president Bill Clinton with a student of the Medellín Network of Schools and Music, a city-wide programme, during the IDB (Inter-American Development Bank) Assembly

PHOTO © MEDELLÍN CITY HALL

of small water streams and it is practically the ideal park in that it opens up the city again to the natural wealth of these basins and the countryside. We also have all the strategies for building a tram, which began in November 2010 and promote clean transport. And



# Arab Cities on the way to better urban life

The theme of the Shanghai 2010 World Expo – Better City, Better Life – is an idea fast taking hold in cities of the Arab world, a region where urbanization was born, writes **Daniel Biau**, Director of UN-HABITAT's Regional and Technical Cooperation Division. He is coordinating UN-HABITAT's first *State of the Arab Cities* report on which he provides a primer in this article.

Kuwait City

PHOTO © DANIEL BIAU



In April 2010 the first international meeting on the State of Arab Cities took place in Kuwait City, in a place only 300 kilometres from Uruk, the Mesopotamian city-state. Located on the Euphrates, Uruk is considered as the first city in world history. Under King Gilgamesh, 5,000 years ago, it included 40,000 people.

If Kenya claims to be the cradle of mankind, southern Iraq could claim, thanks to the Sumerians, to be the cradle of urban-kind. Not very far from the first big village of the world, Jericho on the Dead Sea, already had 5,000 people 7,000 years ago. The meeting took place in a region where urbanization was born (also in Anatolia). One can safely affirm that urban issues are not foreign to the Middle East.

One must also acknowledge that the Arab world has played a very important role in the history of urbanization. From Damascus, the first capital of Islam under the Umayyad dynasty; Baghdad, the Abbasid capital and Cairo, the Fatimid creation at the end of the 10th century, this region is where urban civilization was born. Both the Sumerian and Arab contributions to world urbanization have indeed been outstanding. With the official creation of Cairo in 969 AD, the modern era of urbanization started in earnest, long before the Italian Renaissance. The Arab world is a region where urban matters have been addressed for centuries.

Initially Arab civilization was nomadic. But very quickly it created a number of cities. One of the greatest geniuses of all times, the Tunisian scholar Ibn Khaldun, wrote in the 14<sup>th</sup> century about this confrontation between nomadic origins and city life. Ibn Khaldun founded urban sociology 600 years ago, explaining the relations between rural/nomadic and urban conditions, noting the complementary and confrontations between the two worlds.

The Arab urban civilization, which has evolved over the last millennium, provides the historical background for our coming report entitled, *The State of Arab Cities*. It is well known that some of the most beautiful cities in the world are in this region, from Marrakesh and Fez in Morocco to Damascus and Aleppo in Syria without forgetting Sana'a in Yemen, Jerusalem, Cairo, etc. Any lover of cities would testify that these cities are the pearls of the Islamic World.

With the contributions of many specialists, UN-HABITAT has started to analyze the current state of Arab cities, noting that different sub-regions face different problems. The Arab world is unified by cultural and linguistic features, but it is also marked by many diversities.

In terms of urbanization one should distinguish three major sub-regions. The first one covers the Gulf Cooperation Countries with an extremely high rate of urbanization, an average of 86 percent which is the highest in the world – much higher than in Europe. Kuwait holds a world record with 98 percent, and is clearly one of the most urbanized states in the world.

The second region (which will be subdivided in the report) includes the Maghreb and Mashreq which together represent the bulk (close to 70 percent) of the population of the Arab World. It is two-thirds urbanized today, with an average rate of 67 percent.

The third 'region' is made of the Arab Least Developed Countries. They are very heterogeneous, combining Yemen, Somalia, Djibouti and Sudan in the east, with Mauritania in the west, and the Comoros Islands. There is no homogeneity, but this group is still under-urbanized – up to 45 percent on average. So the Arab states include three completely different regions.

One cannot compare Doha, Kuwait City, Bahrain or Abu Dhabi with Mogadishu or Nouakchott; these are two different worlds. This will make UN-HABITAT's survey and analysis a bit difficult because what will be said of one part of the Arab world will not necessarily apply to other parts.

However there are common aspects, common features of these agglomerations, which can be highlighted to show that 'Better Arab Cities' – in reference to the theme of the recent Shanghai Expo – may indeed be around the corner.

The first common feature is Arab architecture. Arab architecture has evolved down the years, but there are still a number of similarities among all parts of the Arab world. Arab architecture is well known to urban specialists. It developed as a physical response to social and environmental conditions, social challenges – high family values, defined men-women relations, and harsh climate conditions in predominantly dry countries. Many books have been written on the Arab house

and on the Arab pattern of urbanization. The traditional *medina*, or old city, is the common denominator of this heritage. Policy-makers need to combine urban heritage with modern development objectives where Kuwait is a good example, where one needs to build a city almost from scratch while preserving what is left from history. Moving towards 'better cities' requires heritage preservation and integration in urban development strategies.

The second feature is the centralized governance prevalent in the region. All Arab countries in the last 50 years have developed centralized governance systems. These are systems where the governor (Wali) is more important than the mayor, where western-style local democracy remains hard to adopt. So far the centralized Arab pattern of government has demonstrated some effectiveness in terms of infrastructure development, but also some obvious limitations regarding environmental management and political participation.

This explains partly why the third common feature is the water challenge faced by Jordan and many other countries where water scarcity is becoming more and more a political concern. The Arab world is water-stressed and has to invest more in adequate infrastructure, including desalination plants, to face this situation. Betterment of cities requires adequate water supply and improved sanitation, together with participatory environmental planning and management.

The fourth feature relates to the need to accommodate a flow of migrants in a number of cities. Traditionally students learnt about rural-urban migration. At present rural-urban migration remains an issue only in least developed countries, it is no longer on the agenda in most Arab countries. Migration has now become an *international* matter which directly affects city development. Because of its geographical situation, the Arab world is where most migrations are taking place. One could witness migration from Asia to the Gulf countries as well as migration from the Mashreq to the same countries. Migrations occur from sub-Saharan Africa to Maghreb countries, from Maghreb to Europe, from Somalia to Saudi Arabia or Yemen or Kenya. One can see internal migration in countries like Sudan and unfortunately, migration as a result of conflicts affecting Palestinian and Iraqi refugees. The Arab world is ►





## SPECIAL REPORT State of the Arab cities



Damascus, Syria

PHOTO © DANIEL BIAU

a region where migrations have increased in recent decades, having an important impact on the development of cities. Urban refugees and migrant workers must certainly be given more attention in public policies.

On the positive side, the Arab world seems to be the region where cities are the safest. While political violence has increased in some countries, urban delinquency and crime remain low in most of the Arab world. This reveals that the traditional social fabric is still strong. Women and men can walk almost everywhere in Cairo, Casablanca, Algiers, Damascus without fear, even in the evening. This safety is something that sometimes the Arabs themselves do not notice. That is a positive dimension of the Arab city.

Another dimension to highlight is related to the introduction of urban innovation in many areas, particularly in the Gulf Cooperation Countries, where a number of cities have recently introduced urban innovations – most of the time coming from the western world.

Some are strictly technical innovations which make sense because they save time or money, and improve living conditions. Others are more artificial, even superfluous. They are often a sign of modernity with little impact on the quality of life, which benefit international

architects rather than urban populations. Urban malls, cloned from the USA, reflect both sides of this innovation process. On the negative side, they are a mechanism of exclusion and privatization of public space. On the positive side, they are a modern substitute to the traditional *souks* (markets) and could allow some degree of conviviality, provided they are well designed and well located.

Social and technical progress should go hand in hand in the cities of tomorrow.

On the economic front, the recent Dubai crisis, where a number of real estate companies went bankrupt because of wrong investment strategies, must be critically analyzed. In a way Dubai has been victim of its successful diversification strategy. Since 1980 there have been a lot of investments in Arab cities. Billions of US dollars have been invested, sometimes in the right direction (trunk infrastructure) and sometimes in the wrong direction (real estate speculative operations). The economy of cities will be discussed squarely in our report on *The State of Arab Cities*.

Compared with other regions, the last 30 years have seen positive developments in many Arab cities. Journalists often highlight the negative aspects, the uncontrolled urban expansion, the increasing urban poverty, the deteriorated environment. My first visit to

Cairo took place 38 years ago. At that time in the local newspapers one could read that Cairo was a complete disaster; that the city would collapse within 10 years or become totally chaotic.

Then I went to Cairo approximately every two years in recent decades and each time I read the same articles explaining that Cairo was finished, dead, and without a future. This was simply untrue. In fact Cairo is not becoming a nightmare. Cairo has improved. Cairo is manageable, Cairo is managed. And it is by far the largest Arab city with 12 million permanent residents. How come these cities which journalists regularly brand as potential disasters have emerged, have improved, have become more productive? Not being an NGO, the United Nations has to acknowledge the positive aspects of urbanization. There are difficulties, there are serious employment problems, but there are also successes and we have to objectively recognize progress when and where it occurs.

Since the Istanbul City Summit of 1996, Arab cities have become more and more globalized as part of the globalization of the world economy. More and more links have been established between the Arab world and the rest of the planet, the international world. This is a major phenomenon both in economic,

cultural and social terms. Cities are now internationalized, except in least developed countries. This is a general trend and in the Arab world it is accelerating.

During the years 1986-1996, UN-HABITAT provided technical assistance to Dubai Municipality and contributed to create the basis for sound urban management. At that time Dubai was relatively small but its growth has been extremely fast, its population doubling every 10 years (from 350,000 inhabitants in 1986 to 700,000 in 1996 and 1.4 million in 2007). In less than 50 years a big village became a metropolis.

This link with the outside world is important and will be highlighted in the *State of Arab Cities* report because cities are no longer driven by their own internal conditions but primarily by external factors. Many cities have become international hubs, like Doha and Dubai. Towns which were small have become large agglomerations. Apart from Cairo, the only Arab mega-city, nine cities have passed the 3 million people mark: Baghdad, Khartoum, Riyadh, Alexandria, Algiers, Casablanca, Jeddah, Aleppo and Damascus.

Most of them, not all, are better today than they were 20 years ago, in both social and economic terms. In North Africa for example the proportion of slum-dwellers in the urban population went down from 34 percent in 1990 to 13 percent in 2010, according to UN-HABITAT data. However many Arab cities still face very difficult environmental challenges.

The first chapter of the *State of Arab Cities* will deal with demography. It will be based on the UN Population Division's *World Urbanization Prospects: the 2009 Revision* which shows that out of 350 million people in the Arab world, 200 million live in urban areas.

The growth rates are also available, provided by the National Bureaus of Statistics. This is the easiest part even if statistics have their own limitations. But we have to work on the basis of UN data because they are the only official figures, accepted by all governments. In the other chapters the report will discuss the economy of cities and their social dimensions, including the housing conditions, and particularly the conditions of the poorest segments of the population.

It will discuss the current environmental problems of cities including water, sanitation, transport, energy, impact of climate change and finally the political dimension of cities, the way they are managed by central and local governments, what is known as urban governance. Insufficient decentralization, lack of popular participation and corruption practices will have to be analysed, particularly in light of the recent events in Tunisia and other countries.

We expect that the first *State of Arab Cities* report will be completed, printed and available for the sixth session of the World Urban Forum, to be held in 2012.

During that session the evolution of Arab cities will be assessed by hundreds of experts and policy-makers. The on-going evaluation should provide the facts, figures and analysis required for the promotion of better urban life in the region, while the Forum will also provide ample opportunities for inter-regional exchanges.

The spirit of Gilgamesh and Ibn Khaldun will certainly enlighten that forthcoming session. ♦



Aleppo, Syria, is one of nine Arab cities that has more than 3 million people

PHOTO © DANIEL BIAU



## HOUSING

**Tanzania**

Former Executive Director of UN-HABITAT, Mrs. Anna Tibaijuka, has been appointed the Minister for Lands, Housing and Human Settlements for the Republic of Tanzania. Mrs. Tibaijuka retired from the UN in August of last year after heading up the Human Settlements Programme, and previously the Commission for Human Settlements for ten years. The new Executive Director of UN-HABITAT, Dr Joan Clos, expressed his delight on hearing the news. "I and all the staff at UN-HABITAT sincerely congratulate Anna Tibaijuka on her appointment. I cannot think of a more suitable person for the job."

## WATER

**South Africa**

The President of the African Ministers' Council on Water, Edna Molewa has promised the Council's support and commitment to join UN-Water, the UN Secretary General's Advisory Board on Water and Sanitation, UNEP, UN-HABITAT and other partners in organizing the global celebrations of next year's World Water Day, to be held in Cape Town, South Africa. World Water Day is held annually on 22 March as a means of focusing attention on the importance of freshwater and advocating for the sustainable management of freshwater resources.

## ECOTOURISM

**Cameroon**

The Republic of Cameroon and the World Bank have signed a Financing Agreement to support the Competitive Value Chains Project. The World Bank's Board of Executive Directors approved a USD 30 million credit for the project, with an objective of contributing to the growth of sustainable wood processing and ecotourism value chains in Cameroon by improving their competitiveness and investment climate. The project will finance specialized infrastructure investments, vocational training, policy reforms, and will provide direct support to firms through an innovation grant.

## TRANSPORT

**Sub-Saharan Africa**

Members of the new Transport and Environment Science Technology (TEST) Network met at the UN-HABITAT headquarters in Nairobi, Kenya, to discuss transport and environment research challenges in sub-Saharan African countries. The focus of the network was on improving research capacities in the fields of traffic flow management, air pollution and road safety in urban areas. Emphasis was placed on the importance of advancing policies and solutions for sustainable urban mobility in Africa.

## Urbanization

### Clear links between urbanization and politics in South Africa

UN-HABITAT Executive Director, Dr. Joan Clos, observed that urbanization is one of the most political issues of our time, while receiving the credentials from the new Permanent Representative of the Republic of South Africa to UN-HABITAT, H.E. Mr. Ndumiso Ndima Ntshinga.

"The planning of South African cities is still apartheid based," said Mr. Ntshinga, as he explained the concept of apartheid planning of cities to the Executive Director, and noted that after apartheid, the country is now thinking of post-apartheid cities. "It is not enough for a few affluent blacks to move into the former white South African neighbourhoods."

Dr. Clos called for the study of the 'Urban History of Apartheid' to be jointly sponsored by UN-HABITAT and the South African Government, and be undertaken by a university in the country. The Executive Director explained that the current thinking in urban planning is to site industries in intermediate towns of about 30,000 people, which should be near a bigger city of about 500,000 people and with a university.

Mr. Ntshinga stated that one of the biggest challenges facing the country is that of unemployment, as a result of the high level of illiteracy. He explained that part of the South African approach to development is to retain



Joan Clos with the new Permanent Representative of the Republic of South Africa to UN-HABITAT  
Photo © UN-HABITAT

as many people as possible in the rural areas and keep them employed, encouraging them not to migrate to cities.

"The economy cannot absorb the much-needed people; this situation also sustains the slums," said Mr. Ntshinga. "We want to diversify our rural economy to accommodate the people, in order to keep them there because without jobs the people will migrate to the urban centres."

The new Permanent Representative of the Republic of South Africa noted that the South African economy is doing well even though it lost about a million jobs during the recession, and even though the country does not have a compulsory education policy, education is available for everybody.

UN-HABITAT is currently undertaking a USD 600,000 project in the Eastern Cape Province of South Africa. The project plans to set up a local urban observatory, capacity building strategy and enhanced institutional capacities to improve service delivery. ♦

## Transport

### Lesotho receives USD 15 million for the development of its transport sector

The Government of Lesotho and the World Bank have agreed a USD 15 million Financing Agreement to complete the construction of two bridges over the Senqu and Senqunyane Rivers, as well as the maintenance of 64 kilometres of roads (from Nyenye to Makhoroana and Teyat-eyaneng to Mapoteng Junction) that link remote

communities and help boost economic development in the country's northern highland region.

"The global financial crisis has adversely impacted our economy and is constraining our needed capital expenditure programme," said the Hon. Dr. Timothy Thahane, Lesotho's Minister of Finance and Development Planning. "We appreciate the financing and technical support we have received from the World Bank and Lesotho's development partners for this strategic project."

One of the Integrated Transport Project's main development objectives is to create 6,000 days of employment over the construction period. The project will increase employment



## Urbanization

### Population of African cities to triple over the next 40 years

UN-HABITAT's new report, *The State of African Cities 2010: Governance, Inequalities and Urban Land Markets*, was launched in Bamako, Mali, during the 3rd African Ministerial Conference on Housing and Urban Development (AMCHUD III), with a warning that the population of African cities is set to triple over the next 40 years.

"Urbanization is here to stay and within a few decades, Africa will be predominantly urban. Already huge urban corridors across Africa are engines of economic growth," said Joan Clos, Executive Director of UN-HABITAT. "The issue now is for regional and national governments, local authorities and all other stakeholders to pull together to ensure the efficient management of urban agglomerations. Smart urban policies could help spread the benefits and lift the continent out of poverty."

Across Africa, 24 million slum dwellers have witnessed improved living conditions over the last decade. However, while cities in North Africa reduced the share of slum dwellers from 20 to 13 percent, in sub-Saharan Africa, the share of slum dwellers decreased by only 5 percent.

According to the new report, Africa will suffer disproportionately from the negative effects of climate change, such as extreme weather events, despite contributing less than 5 percent of global green house emissions. Parts of Africa



Kibera slum, 2008. Nairobi PHOTO © UN-HABITAT

have recently suffered prolonged droughts and subsequent hunger, leading to rural to urban ecomigration and adding even more people to the urban populations at risk.

The report highlights the difficulties caused by mobility when it comes to enumerating sub-Saharan Africa's slum populations. A good example is that of the Kibera slum in Nairobi, Kenya, where the long-standing perception was that its population was around 500,000 to 1 million people but the 2009 census set this figure at just under 400,000. The authors argue that data on slum dwellers derived from a population census or from voter rolls should be interpreted with great caution.

"It is interesting to note that today in many parts of the world, poor people take advantage of urban-rural mobility to live in multiple locations," said Joan Clos. "This is especially true of slum dwellers who retain links with their rural homesteads. Policymakers and planners need to take such fluidity into account when planning the shelter needs of the poor." ♦

opportunities in the highlands, reduce costs for transporting people and goods, and provide easier access to economic and social services in inaccessible areas.

Completing the construction on the two bridges will reduce travelling distances between the regional centres of Qacha's Nek and Maseru by 140 kilometres, benefiting about 20,000 people living in the area. Maintenance, including resealing and repairs, will benefit 200,000 people living in the Berea and Leribe districts, reducing travel time by 20 percent as well as damage to vehicles.

"At a time of economic downturn, investing in infrastructure is a proven way of priming

the engine of growth and improving the welfare of the Basotho people," said Ruth Kagia, World Bank Country Director for Lesotho.

Landlocked and entirely surrounded by South Africa, the Kingdom of Lesotho has been adversely affected by the financial crisis. The successful textile and garment industry, a major source of export revenues, has slumped due largely to an abrupt drop in demand from the United States. Due to multiple pressures, the government of Lesotho considers the completion of ongoing infrastructure projects to be a strategic national priority, vital for securing economic growth as the economy rebounds. ♦

#### YOUTH

##### Kenya

UN-HABITAT is set to open a new health, rehabilitation and community-learning centre for disabled slum children. Designed as a pilot scheme that began in 2008 with BASF funding of USD 139,000, the project is located in the Soweto neighbourhood, part of Nairobi's overcrowded Kibera slum. When it opens, the centre will accommodate up to 40 children with disabilities, in a safe environment, providing health services tailored to their needs, as well as a community resource centre with computerized youth training facilities.

#### INFORMATION TECHNOLOGY

##### Somaliland

Terre Solidali, an Italian NGO, in collaboration with UN-HABITAT, the Ministry of Interior, and local governments, has designed and introduced a computerized accounting system and a billing and revenue collection system in order to improve Somaliland's local government financial management. Currently, six municipalities are fully using the automated system and have achieved clear successes. Before the introduction of these information technology systems, municipal financial management in Burao was an entirely manual system.

#### INFRASTRUCTURE

##### Sao Tome & Principe

The Africa Development Bank (AfDB) has approved a USD 7.8 million grant to Sao Tome and Principe, the second-smallest African country in terms of population, to finance the country's infrastructure rehabilitation and food security enhancement project. The project will be implemented over a four-year period in the Sao Tome and Principe islands and will help improve food crop production and fisheries, which constitute the source of livelihood for many families. The Bank will also provide its expertise in rural infrastructure diversification, in line with its new agriculture and agro-industry strategy.

#### HOUSING

##### Sudan

In Khartoum, Sudan, a pilot housing scheme run by UN-HABITAT and the State Government of Khartoum, with funding from the European Union and the Italian Development Cooperation, is beginning to show its benefits for slum-dwellers. The project has seen families relocated from the informal settlement of Salama, within the city, to Al Rasheed, 40 kilometres away. Their new homes have two rooms and a veranda built using the new Stabilized Soil Block (SSB) technology, which UN-HABITAT is pioneering.

# The good part about working together

In the very spirit of UN-HABITAT's World Urban Campaign, the cities of Medellín and Rio de Janeiro are working together exchanging lessons and experiences. Their joint field of action, which began in 2007, encompasses culture, urban planning, transport and mobility, housing, welfare services, public security, and other areas. Colombian and Brazilian experts meet every three months and their joint actions benefit the poorer sectors of both cities, especially the comprehensive urban renewal of precarious settlements. **Manuel Manrique**, UN-HABITAT's Information Officer for Latin America and the Caribbean, recently visited the Manguinhos favela to get a closer look at the results of this cooperation.

The main entrance of Residencial Emratel, in Manguinho

Photo © UN-HABITAT



It all began in the Quebrada Juan Bobo district in the northern area of the city of Medellin, Colombia, where the state of affairs in 2004 was that of a slum in all but name: 95 percent of the land was illegally occupied, and 35 percent of electric power illegally tapped. The same could be said of half the water installations and the sewage service. The place was mired in social exclusion and social breakdown, narrow streets, few public spaces for cohabitation and leisure. Eighty percent of homes were shabbily built and half of all the housing was located in dangerous places with restrictions.

After a survey, the urban development company of the Medellin City Council initiated legal, technical and administrative procedures to begin works that would benefit 300 families.

"They set priorities such as legalizing land deeds, drafting different habitation plans which addressed the interests of the population, comprehensively reordering and improving living conditions in order to guarantee social inclusion," said architect Julian Portillo, the project coordinator.

Three years later, in June 2007, Quebrada Juan Bobo had a different appearance. The alleys were transformed into wide streets, steps, viewing points and pedestrian bridges. Public spaces, which used to be 50 centimetres per inhabitant were increased to 3.17 metres per person, and in addition to this, the proliferation of green areas and public infrastructure works, brought with them the provision of an organized water supply, power, a sewage system and garbage collection services.

Leaving the works aside, the comprehensive renewal of the area raised the population's self esteem because many of the neighbours worked on the improvements and were then able to find jobs elsewhere. This intervention reduced illness rates, crime and violence. "Investing in social works helps to eliminate violence, strengthens the local economy and offers people the opportunity to rise out of poverty", said María Mercedes Mateos Larraona, a Medellin councillor since 1998.

"If we do not combat violence it is perpetuated inside and outside the family," she said. "This leads to early pregnancies and sexual exploitation, especially of young girls."

The results of this public policy awoke the interest of neighbouring municipal councils such as Girardot, Copacabana, Itagüi, Caldas

and Bello, all of them bordering Medellin, as well as of other Colombian cities such as Manizales, Cali, Cartagena and Bogota.

The City Council of Medellin decided to replicate the experience inside the city but on a more extensive level. It focused on culture and education, transport and mobility, sport, health, women's assistance, legal advice, among other things.

And that's how sports centres, the library parks, the metro-cable, outpatient health

All three have a well known history of illegal land occupation, chaotic growth, violence as well as frustrated attempts on the part of various governments to carry out infrastructure improvements and projects to benefit the local population.

In Manguinhos two sites were chosen to accommodate 1,774 new homes – a former army supplies depot, and a warehouse occupied by 1,200 families which belonged to the Brazilian Telephone Company, Embratel.



Residencial Embratel, in Manguinhos

PHOTO © UN-HABITAT

centres, cohabitation and leisure spaces and the legal aid centres started to pop up in various poorer neighbourhoods along with 7,000 new homes which were built between 2004 and 2007. A further 15,000 more homes are scheduled for completion by the end of 2011.

### Working with Rio de Janeiro

The impact of this initiative was impressive. Cities from all over the world began to seek exchange initiatives with Medellin and Rio de Janeiro was one of them.

In 2007, the recently elected Governor of the State of Rio de Janeiro, Sergio Cabral, visited Medellin to get first hand experience of its public security policies. He returned overwhelmingly impressed by the works of urban renewal in the poorer neighbourhoods. Visits by specialists were intensified and they decided that the work for the comprehensive renewal of the Rio *favelas* (slums) would begin with Manguinhos, Complejo del Alemán and Rocinha.

Service delivery did not pose any problems. Rather the big challenge was to identify the families who would move in.

"A census was drawn up of the families in Embratel. They were all interviewed despite a great deal of mistrust," said Ruth Jurb-erg, Social Projects Coordinator of the State Government of Rio de Janeiro. A total of 1,500 young people were hired as interviewers to conduct the census – the first under taken in Brazil's *favelas*.

The families were given three help options before abandoning their homes. The first was the social rent option: the families received between USD 146 and USD 219 a month for 12 months to cover rent costs while the apartment blocks were being built. The second option was a subsidized purchase option whereby the government helped the family buy a home in another part of the city, and finally, the compensation option.

Few opted for compensation or subsidized purchase, but more than 1,000 families received social rental assistance.



New community spaces are a key component of the urban renewal process

PHOTO © UN-HABITAT

Before the families moved into their new homes they took a course which explained how a community of owners functioned, how to set up a condominium agreement, what an administration committee does, as well as other matters. The last 152 apartments of 1,774 were handed over in February 2011.

"I waited 16 years to see my dream come true. I am happy for my family and for all the neighbours. We are going to live better and we are going to have fewer sick people. I was surprised by what the president of Embratel said during the inauguration of the housing estate: we are all going to have a telephone line and access to cable TV and the first six months will be free", exclaimed Valmir Ferreira da Silva, a 27 year-old building worker and father of three.

The only thing that still has to be done is to raise the train tracks 12 metres above ground and build the Parque Linear green space beneath it.

"If the park brings changes, let it be for the better. The problem here is violence from drug trafficking, the war between factions and the increase in consumption of all kinds of drugs," says Deise da Silva, 28.

"The benefit of the park is that the community will now have a large urbanized area with fields for all kinds of sports, kiosks and games,

etc. Furthermore, it is going to bring together the communities from both sides of Leopoldo Bulhões avenue, which were previously separated by the train tracks," explained Carlos Eduardo Magalhães, Head of Works for the Manguinhos Growth Promotion Programme from the Public Works Company of the State of Rio de Janeiro.

#### Metro-cable or cable railway

Less than 5 kilometres from Manguinhos is the Complejo del Alemán, a group of 13 favelas with a population of 400,000 where one of the biggest challenges is to improve mobility and internal transport. There are a lot of narrow streets, but there are safe and quick routes for pedestrians and motorcyclists inside the Complejo.

In order to improve this state of affairs, and taking as an example the success of the metro-cable in Medellin, the Cabral administration decided to replicate the experience and set out to build a cable railway line which will have six stations and each of them will be next to a cultural attraction such as a library or a theme museum.

The main station will be to the city's main metro and bus services. In addition to this station, another five will be inaugurated in January of 2011.

Along with the transport problem, another obstacle is the poor condition of footpaths to the main roads. Often very steep and without rails, or street lighting, they are a danger.

"When we did the questionnaire, we found out that there were people who had not gone down to the road for over five years. These people's lives are no longer limited," said Ruth Jurberg, head of the social projects team who already has her mind on the challenges to come. "Near Manguinhos there is a community that has occupied a milk factory for over 15 years. We need to do work in this place."

There are many differences and similarities between the Medellin and Rio de Janeiro experiences. The urban renewal in Medellin saw a drop in crime, but in Rio it is too early to tell.

"We want a UPP (Peacemaking Police Unit) to stop the violence from drug trafficking. That is my new dream now," said Maria Castro, who is 45, unemployed, and lives in the favela.

It was in Rio de Janeiro, however, that the World Urban Campaign was launched in 2010 during the World Urban Forum. And now the city can dream of better things to come. ♦

*Additional reporting and research,  
Ethiene Ribeiro.*





In the Netherlands, drinking clean water from the tap is already common practice for over 100 years. This is not the case for more than 1 billion people elsewhere. That's why Vitens-Evides International offers to share its knowledge and experience to support water companies all over the world to operate more efficiently, to become financially sustainable, and to increase access to water and sanitation facilities.



## A reliable partner in urban water and sanitation

### Vitens-Evides International

The two public parent companies, Vitens and Evides, embrace a corporate social responsibility to share their know-how and experience with water companies all over the world. Together they provide high-quality drinking-water to nearly half the Netherlands' total population of 17 million people. Through its international subsidiary, make their knowledge and expertise available to demanding water companies around the world in order to improve their operations and contribute to the UN Millennium Development Goals. Currently Vitens-Evides is involved in partnerships with water companies in Ghana, Mozambique, Mongolia, Vietnam, Yemen, Malawi and Surinam, targeting over 20 million people.

### Our approach

With its public, not-for-profit identity Vitens-Evides International focuses on improving the day-to-day operations of local water companies. It thereby does not pursue equity ownership. Through operator partnership arrangements (TA, Service,

or Management Contracts), we provide technical, financial, operational and management support to improve and expand cost-effective water services to people. Resident expert input, short missions of our professionals, a shared commitment to bring about change, and capacity development, are key elements of our unique approach.

Some of the main features of our operator partnerships are:

- Flexible and demand driven interventions.
- Unique concept for NRW reduction.
- Focus on operational and financial performance.
- Develop and guide sector investment programs.
- Strengthen local capacity through transfer of know-how and expertise.
- Raise attention for sanitation services and hygiene promotion.

### More information?

Please contact us at [vei@vitens.nl](mailto:vei@vitens.nl) or +31 88 884 7991 or go to [www.vitensevidesinternational.com](http://www.vitensevidesinternational.com).

[www.vitensevidesinternational.com](http://www.vitensevidesinternational.com)

## WASTE MANAGEMENT

**Latin America**

UN-HABITAT has launched its Global Energy Network for Urban Settlements (GENUS) in Latin America to help find innovative solutions for waste management and ways of converting waste into a source of energy. The new network will promote energy access for the urban poor, and will work closely with corresponding networks in sub-Saharan Africa, which focus on slum electrification, and in South Asia, where the emphasis is on access to urban transport. UN-HABITAT hopes GENUS will become a dynamic global network for sustainable urban energy solutions with special attention to the needs of the urban poor.

## HEALTH

**Nicaragua**

The World Bank has approved a USD 11 million grant and a USD 10 million loan to improve family and community health care in town areas in Nicaragua. The finance will strengthen operational capacity to expand the Health Ministry's health service coverage, rehabilitate health units and create a financial support fund in case of a public health emergency. The Improving Community and Family Health Care Services Project focuses on 32 municipalities belonging to Local Integrated Health Care Systems and will benefit approximately 625,000 inhabitants.

## WATER AND SANITATION

**Caribbean**

The National Water & Sewerage Authority and Grenada Solid Waste Management Authority brought experts from around the world to discuss the problems of water and sewerage provision in the Caribbean, at the 19th Annual Caribbean Water and Wastewater Association Conference and Exhibition. The aim is to improve water management governance and expand access to those who currently do not receive services, as well as the most vulnerable populations in the region.

## YOUTH

**Belize**

The Inter-American Development Bank will provide Belize with a USD 5 million loan to help tackle youth violence in vulnerable communities, support youth social rehabilitation, and strengthen the public safety drive. The funds will aid Belize in reducing juvenile crime by tackling violent behaviour at school, encouraging positive behaviour in youth from broken homes, improving the effectiveness of rehabilitation for juveniles, and enhancing the government's ability to devise and implement public safety policies.

## Urbanization

### Executive Director supports a new vision for the world's urban future

UN-HABITAT Executive Director, Joan Clos, was a key speaker at the opening of the Third Congress of United Cities and Local Governments (UCLG) in Mexico, as he joined delegates from across the globe to discuss the future of urban centres in an increasingly urbanized world.

"Cities of the future should be more sustainable, more equitable, places where people can fulfil their potential," said Dr. Clos. "Although it seems impossible to reverse the chaotic city growth that has already taken place in many parts of the world, it can be done. It takes conviction and a strong set of strategies to correct past mistakes. Cities are living organisms and change over time."

The Mayor of Mexico City, Marcelo Ebrard, welcomed more than 3,000 mayors, local and regional authorities to the conference to share their experiences on the challenges facing cities and municipalities, such as local governance, the economy and climate change.

By the conclusion of the four-day summit, 'The City of 2030 – Our Manifesto' set out in simple terms, a vision for urban centres of the future, both large and small, as the world becomes increasingly urbanized.

During the summit Dr. Clos also launched the report *How to enhance inclusiveness for migrants in our cities: various stakehold-*



The Mayors' Climate Change World Summit immediately followed the UCLG congress in Mexico

PHOTO © WILLIAM FOSTER

ers' views, which was published jointly by UNESCO and UN-HABITAT.

The report explains how international migration flows will increase in the future as a result of climate change and the global financial crisis. Migrants will continue to be progressively drawn to cities, and consequently add to urbanization. With decentralization, the responsibility of responding to the needs of migrants will increasingly fall to local government, that will be required to assist migrants become a full part of the economic, cultural, social and political lives of their host communities.

Speaking after the congress in an online discussion with readers of *El Universal*, one of Mexico's most well read and influential newspapers, Dr. Clos said that care should be taken to protect the collective and public spaces in cities, which are true symbols of identity and citizenship. ♦

## Water

### Mexico to improve efficiency of water utilities

The World Bank will provide Mexico with a USD 100 million loan for the Mexico Water Utilities Efficiency Improvement Project, which seeks to improve the efficiency of participating utilities through technical assistance and financing framed under the sector policy.

"The efficient provision of drinking water, urban drainage and sanitation services is strategic

as well as a priority for this administration; this is why we have determined that the National Water Program will strengthen Water Operators in order to increase their physical and commercial efficiency," said Jose Luis Luege Tamargo, Managing Director of the National Water Commission (CONAGUA). "With the support and cooperation of the World Bank, we will establish a programme that will allow us to better coordinate water sector objectives and strengthen different operators to make this sector one of the most modern."

The beneficiaries of this project will be water utilities located in urban communities of more than 20,000 people, which will have



## Housing

### Youth-led NGO wins award for housing projects across Latin America

'Un techo para mi país' (A roof for my country), a youth-led non-governmental organization (previously reported in *Urban World*) and winner of the Scroll of Honour in 2009, won the Housing and Urban Development South-South Transfer award. The programme has helped mobilize 250,000 young volunteers to build more than 73,000 transitional houses for families in slums or those affected by natural disasters, and for transferring its innovative approach to 19 countries across Latin America.

UN-HABITAT's Chief of Information Services, Jane Nyakairu, highlighted the importance of this award and others like the Habitat Scroll of Honour, Dubai Best Practices award and World Habitat Award in helping to transfer and scale up best practices to achieve greater impact and mobilize action towards sustainable urbanization.

Ms. Nyakairu said that the case of 'Un techo para mi país' "shows young people taking the lead to help the poorest communities of Latin America by bringing together students, young professionals and privileged groups. The transfer model, applied in 19 countries, is adapted to volunteerism, housing policies and the political realities in the different countries."

"The project is an excellent example of the enthusiasm and energy of youth to improve their living environments. It is initiatives



'Un techo para mi país' volunteers working in Colombia  
Photo © UN-HABITAT

like this that have led to the establishment UN-HABITAT Youth Opportunities Fund which gives financial support to youth-led initiatives that help to create jobs and improve living conditions and in urban environments."

The transfer award shows that knowledge transfer can realize real benefits on the ground. To promote such knowledge exchange, UN-HABITAT is developing a new online knowledge exchange platform, the Urban Gateway, to promote sharing of best practices, collaboration, debate, and networking among urban practitioners around the world.

The unique award was jointly presented by UN-HABITAT, the Building and Social Housing and Foundation (BSHF), and the UNDP Special Unit for South-South Cooperation, at the Global South-South Development Expo organized by UNDP, with support from ILO and other UN agencies.

The Development Workshop's Preventing Typhoon Damage to Housing programme in Vietnam also received a special mention. The project promotes principles of safe construction that can be easily applied by vulnerable communities and has been replicated in Indonesia, Myanmar, and Haiti. ♦

increased capacity to efficiency improvement. The eligible water utilities will also benefit from an enhanced management of knowledge and information and will be able to provide efficient, reliable water and sanitation services to their users, who will ultimately be the main beneficiaries of the project.

Better water management will allow the Mexican government to strengthen ongoing and future initiatives to confront the challenges associated with climate change. It will also help to highlight the importance of this resource internationally.

"Lack of access to water services is still a factor in poverty and exclusion," said Gloria

Grandolini, World Bank Director for Mexico and Colombia. "At a time when water shortages have multiplied as a result of climate change, it is crucial that an adequate water management policy is in place. As a consequence, improving its efficiency to achieve a more equitable and sustainable distribution of this resource will allow millions of Mexicans that still lack drinking water to gain access to it."

"This project supports government efforts to improve the financial sustainability and the efficiency of water service provision, mainly at the municipality level, which is something that should be highlighted." ♦

#### EDUCATION

##### Guyana

Guyana will receive a USD 4.2 million credit from the World Bank to advance the quality of teacher education. The Improving Teacher Education Project will work in partnership with the Ministry of Education to support Guyana's Cyril Potter College of Education and the University of Guyana's School of Education and Humanities to improve the delivery of quality teacher education. The project is aligned with the Government of Guyana's Education Strategic Plan 2008-2013, which aims to increase the number of trained teachers for quality improvement in education.

#### SUSTAINABLE DEVELOPMENT

##### Mexico

The Government of Baja California and its partners showcased their first sustainable city in the United Nations Pavilion at the Shanghai World Expo 2010. Valle San Pedro will be Mexico's first sustainable city designed to encourage economic activity and innovation and will be the largest such site in the Americas. It is planned to house one million residents in the next twenty years. Mexican Vice-Minister for Housing, Sara Topelsson emphasized that a sense of community was of high importance and planned to work with the new residents as the city grew.

#### HOUSING

##### Trinidad and Tobago

Trinidad and Tobago will receive a USD 40 million loan from the Inter-American Development Bank to support home improvements, the building of new homes and squatter regularization. The finance will help improve the living conditions of more than 50,000 people with a neighbourhood housing upgrading project. The programme will regularize the tenure of property for families living in squatter settlements and provide subsidies for home improvements and construction of new housing. An estimated 5,360 families in 25 existing squatter settlements are expected to benefit from the project within six years and at least 8,477 tenants will have their property titles regularized.

#### WATER

##### Latin America

The Latin American Association of Water and Sanitation Operators (Asociación Latinoamericana de Operadores de Agua y Saneamiento, ALOAS) was launched at the 24th Annual Convention of the Mexican Association of Water and Sanitation Operators. The Association will unite the common interests and determination of Latin American operators to conform a broad, inclusive and plural network to discuss and advocate for the concerns that are common in the water and sanitation service provision in Latin America.

# Timor-Leste – a most vulnerable new member of the UN family

By **Abraham Joseph**, Senior Economic Advisor, United Nations Integrated Mission in Timor-Leste (UNMIT), and **Takako Hamaguchi**, Project Officer, UNICEF.



Torrential rains have the potential to wash away coastal and upland human settlements

PHOTO © KOK LENG

**R**ecognized by the United Nations as one of the Small Island Developing States (SIDS), Timor-Leste is one of the most vulnerable countries to the impact of climate change. The rising sea level, along with other effects of climatic disruption, threatens the very survival of many small island states. The Intergovernmental Panel on Climate Change (IPPC) concluded in 2007 that a sea-level rise resulting from a global temperature increase of 4 degrees C would completely submerge low-lying island states like Tuvalu, Kiribati and the Maldives.

In the case of Timor-Leste, climatic conditions characterized with infrequent, but torren-

tial rains pose a great risk as approximately 44 percent of its surface has a slope of 40 percent or greater, where topsoil is often washed away in flash floods, causing damage to agricultural production, human settlements and infrastructure in the upland as well as downstream areas. In recent years, increased flooding which is considered to be linked with the La Niña and El Niño phenomena triggered by climate change, has become a significant problem in Timor-Leste. For example, from the beginning of January to mid-February 2008, two phases of the extreme monsoon storm activity produced severe localized wind, floods and landslides, affecting crops, roads, bridges and homes in all 13 districts. Relatively at the same time, three western



An aerial shot of the beach of Dili, the capital city of Timor-Leste, one of the Small Island Developing States (SIDS)

PHOTO © MARTINE PERRET/UNMIT

districts experienced locust infestations, which can be seen as another sign of intensification of climate disruption.

According to the World Bank, there are additional concerns arising from the increasing impact of climate change for Timor-Leste: (1) threats to food security; (2) forest degradation and related effects on watersheds and slope stability; and (3) vector-, food- and water-borne infections sensitive to sudden climatic changes.

## Protecting human settlements

After independence in 2002, Timor-Leste initially focused its efforts on maintenance of law and order, the rehabilitation of some 200,000 refugees and 500,000 internally displaced persons, and the restoration of its human settlements.

Despite the civil disturbances in 2006 and the assassination attempts on its leaders in 2008, Timor-Leste's non-oil GDP grew at 12.8 percent in 2008, 12.2 percent in 2009. The Asia Development Bank projected growth to be 10.4 percent, with average inflation of 5 percent for the year. The sources of growth were public expenditure and improved



agricultural production. Nearly 95 percent of government revenue is financed by the oil and gas revenue from Bayu Undan oil-field off the coast of Timor Sea.

In its post-conflict reconstruction, Timor-Leste has placed environmental protection and sustainable development high on the agenda. The Constitution of the Democratic Republic of Timor-Leste, which was promulgated in 2002, upholds the fundamental human right of its citizens to a humane, healthy and ecologically balanced environment and declares that protection of the environment and safeguarding of sustainable development is incumbent on the government elected by the people. Timor-Leste is in the process of finalizing the Strategic Development Plan for 2011-2030. The plan is expected to uplift the country from its current status as a conflict-torn, least developed economy to that of a democratic and environmentally sustainable society with an upper-middle income level.

In face of the expected intensification of climate change, Timor-Leste will be required to reinforce monitoring of climate-related environmental risks and strengthening of early warning mechanisms and systems of safety and resilience in human settlements, productive base and infrastructure, while also to minimize possible negative effects on the environment emanating from its development efforts.

The elements outlined below are expected to be included in the Strategic Development Plan and should enhance the protection of human settlements against climate change.

### Renewable energy development

Development of renewable energy is one of the mitigation measures often used to reduce greenhouse gas emissions, a major cause of climate change. Through implementation of SDP, Timor-Leste embarks on an initiative to diversify energy sources while conserving non-renewable resources.

Timorese households in rural areas rely heavily on abundant fuel wood for energy needs at home. In 2007, only 37 percent of households in the country were served with electricity. There exists a great potential in producing a significant level of energy supplies in Timor-Leste in the forms useful to the Timorese population at an affordable cost, such as solar power, wind power, hydropower and biogas. Among them, solar power is seen as a promising alternative

energy source for rural areas with low population densities where extension of the electricity grid is not cost-effective, while hydropower projects are considered for providing electricity in the industrial sector as an alternative to the imported oil.

### Improved land management

Land degradation, particularly when combined with the impact of climate change, has become a major threat to survival. In Timor-Leste, the increased quantity and velocity of water run-off observed in recent years has been attributed to upland deforestation. In response, it is important to secure forests particularly on steeply sloped areas and mangroves along the coastlines as protected zones in order to conserve plant covers in defense against soil erosion, landslides and floods and to secure freshwater supplies. At the same time, efforts should be made to promote reforestation, encourage agriculturists to adopt sustainable practices and to develop human resources in protection and conservation of natural resources.

Improvement in land management will ensure utilization of Timor-Leste's natural resources in land and sea in a most sustainable manner so as to minimize depletion and to prevent pollution while supporting a desired level of economic and other human activities. In this context, human settlements in urban as well as rural areas should be positioned so that people can benefit from the resources available to them.

### Disaster risk management

Climate variability, one of the well-known consequences of climate change, increases the risk of climate-related disasters, particularly for geographically vulnerable regions like Timor-Leste. Without better management of disaster risks, the result would be a greater loss of life and livelihood, destruction of a larger number of homes, properties and infrastructure facilities and a more severe damage to the environment. In 2008, the Government of Timor-Leste adopted the National Disaster Risk Management Policy in a shift from the traditional crisis response to a more comprehensive management of disasters. It provides a framework for its efforts to reduce disaster vulnerabilities while building readiness when a disaster strikes. The National Directorate of Natural Disasters, a branch of the Secretariat of State of Social Assistance

## Timor-Leste

Timor-Leste gained its independence in 2002 and is one of the newest members of the United Nations. Situated at the eastern end of the Indonesian archipelago, the country occupies the eastern half of the island of Timor, an enclave in the northwest of the island called Oecussi (Ambeno) and the islands of Pulau Atauro and Pulau Jaco, which represent a total surface area of 15,000 km<sup>2</sup> consisting primarily of rugged terrain. The population of Timor-Leste was estimated at 1.1 million in 2009. At 5.7 children per woman, Timor-Leste has one of the highest fertility rates in the world and the population is growing above 3 percent each year. About 74 percent of the population lives in rural areas, out of which 95 percent is engaged in agriculture. Although the country receives large revenues from petroleum exploitation off the coast along the Timor Sea, Timor-Leste is ranked 162 out of 177 countries in the 2009 Human Development Index with GDP per capita of less than USD 2 a day.

and Natural Disasters, was established to coordinate the work of government ministries and international organizations in this area. In addition, Disaster Management Commissions have been set up at district level and are given principal decision-making responsibilities during crises.

### Main achievement

Timor-Leste's main achievement in fighting climate change so far has focused on institution building. In 2007, the country acceded to all three Rio Conventions, namely, United Nations Convention to Combat Desertification, United Nations Framework Convention on Climate Change and United Nations Convention on Biodiversity. It has just embarked on translating them into action through implementation of SDP and other development programmes in a hope to build a prosperous nation based on the principles of ecological balance and sustainable development. ♦



# Nature's siege: the Pakistan floods, 2010

The past five years in Pakistan have put the country on the map in more ways than one, writes **Ghazala Siddiqui**, UN-HABITAT's Public Information Officer in Islamabad. From the earthquake of 2005, to the crisis of those internally displaced, the people of Pakistan have suffered tremendously.



Untold destruction: rebuilding homes and lives in the aftermath of Pakistan's devastating floods is going to take years

PHOTO © G. SIDDQUI / UN-HABITAT





In 2010, once again, Pakistan was devastated, this time by its worst floods ever. Triggered by monsoon rains, the floods swept through the north and washed over portions of the entire country along the Indus River. Gushing into the Arabian Sea, the floods travelled some 3,180 kilometres to their final destination damaging or destroying everything in their path.

Initially the damage seemed to be material, and confined to the northern areas. But the unrelenting waters knew no boundaries. It started in the province of Gilgit Baltistan, then spilled to the provinces of Khyber Pukhtunkhwa and Punjab, and twisted south to Baluchistan and Sind. Under nature's siege, the country declared an emergency and disaster management teams were dispatched to assist the people.

Only those who visited the areas truly witnessed the mass scale of destruction caused by the raging waters. UN-HABITAT Senior Engineer Hamid Mumtaz was part of the damage assessment team dispatched to Sind: "When we saw the conditions there, we thought that the people would not be able to survive. People were begging for water. Infants had no milk.

Mothers would put their babies on our laps and beg us to bring milk for them."

Such conditions were widely witnessed throughout the affected areas of Pakistan. A few weeks after the floods, when the water started receding, I visited some areas in the Khyber Pukhtunkhwa province. It was humbling to see how people were managing in the aftermath of the disaster. As we drove by, temporary tents were erected on the divider between the motorway. On the left and right side of the road, I could see the remains of homes scattered about the marshy landscape. There were thousands of tents with no amenities. One tent had seven to eight people living in it. Children were running around on the motorway.

The UN-HABITAT staff arrived to still standing flood waters, with tented camps set up by the army. They were now home to about 100 families.

The province of Sind had some prior warning before the flood waters reached the south. The evacuation had started and people were leaving their homes. The story of Zarina, a 35-year-old woman from Sajawal speaks for itself.

She was told to evacuate with her family

immediately. Her sister of 18 was sick, and they had to borrow a car and risk all along flooded and mudded roads. By the time they reached a temporary camp, her sister died. There were many stories about people leaving behind sick, handicapped or very old family members who are yet unaccounted for.

The UN-HABITAT teams faced a mammoth task, as unlike the earthquake, where only the northern regions were affected, the floods impacted the entire country.

Initial damage assessments by the National Disaster Management Authority reported more than 1,300 lives lost, 1.7 million homes destroyed or damaged, and a total of 14 million people affected by floods of whom 7 million were yet to be assisted.

Such is the enormity of the situation that still prevails in Pakistan, more than three months after the flood disaster.

During the relief and emergency phase UN-HABITAT provided adaptable shelters to address the immediate housing needs.

The sheer number of people involved make this the worst natural disaster to have hit Pakistan. ♦

# Flood response: housing needs and hopes

The earthquakes which hit Pakistan prior to the 2010 floods gave the authorities a chance to set up institutions for disaster management. They introduced the concepts of disaster preparedness, risk and vulnerability appreciation, mitigation, strengthening of local institutions, skills development, and the empowerment of communities, including women. Here **Simiak Moghaddam**, the UN-HABITAT Country Programme Manager in Pakistan, analyses a grim situation.

One could argue that this situation is a 'window of opportunity' for the country to regenerate and rebuild itself, elevating Pakistan to a higher level of development and social advancement. It is an opportunity to institutionalize disaster preparedness and management with still greater zeal. It should be

remembered that the federal government set up the Earthquake Reconstruction & Rehabilitation Authority (ERRA), after the 2005 earthquake.

The floods came at a time of institutional change with a number of functions of the federal government being devolved to the provinces, which now have an opportunity to de-

velop and institutionalize their new responsibilities in the light of the huge demands placed on them by the 2010 floods.

Interestingly, the floods have not only washed away homes, livelihoods and infrastructure, they have also exposed the vulnerability of a great number of the population. Indeed, the floods have been an eye-opener ►



Some 1.74 million households lost their homes in the floods

PHOTO © G. SIDDIQUI / UN-HABITAT

and shown that a sizable population still lives in extreme poverty and backwardness, lacking basic social facilities or services. Surely this time round, these people should not be ignored if Pakistan is to rise above this disaster and regenerate itself.

I raise this point to emphasize that the 'Build Back Better' concept relates both to the physical reconstruction and rehabilitation, as well as paying attention to the socio-economic infrastructure, so that the most vulnerable can find at last the opportunities to come out of the misery to which they have been subjected.

### The housing sector - what have we learnt

According to government figures, some 1.74 million households have lost their homes. The level of investment and effort for reconstruction of this sector is gigantic and runs into billions of dollars. The task ahead seems daunting and impossible.

However, it could be argued that Pakistan has proven once before that it can rebuild its housing sector and that it can do it again if the right policies and strategies are adopted.

The 2005 earthquake hit a population who mostly owned their land, and mostly lived in isolated communities or small settlements in areas with difficult weather, terrain and

accessibility. The floods have affected rural areas and settlements as well as towns and entire cities. Further, a significant flood-affected population does not have the land to rebuild their homes and lives. Therefore the issue of land is of paramount importance for the government, or the provincial administration, to address in both rural and urban areas.

### Other lessons

Looking back at the response to recent disasters could also lead to other lessons for application to the current flood response. In the reconstruction strategy of the Kashmir earthquake, a staged assistance package of PKR 175,000 (USD 2,000) was allocated to each household. It included free training on earthquake resistant designs as part of an extensive technical assistance programme. The people were central to the decisions on their own housing and fully involved in the reconstruction of their own homes. Women were actively engaged in the decision making process at the household level. At the end of the Rural Housing Rehabilitation Programme (2009) 436,543 new homes were completed of which 97 percent were deemed compliant with ERRA safety standards.

However, in the Baluchistan earthquake in 2008, those households whose homes were

destroyed were given a one-off cash grant of PKR 350,000 (USD 3,500), while others whose homes were partially destroyed were given PKR 50,000 (USD 600) without further assistance. Today, two years later, the result in Baluchistan has been poor compared to the quality of housing built in the Azad Jammu Kashmir region (see table).

Organizing the communities and letting people, particularly women, make informed decisions on their own housing through awareness campaigns, training of skilled and semi-skilled workers, and use of local materials and techniques, ensures ownership and increases self-esteem and national pride.

Given the magnitude of the current floods disaster and financial implications, the decision makers surely do not have an easy time in arriving at the right policy or strategy, particularly in the housing sector, as this is one of the hardest hit and the most expensive.

Political devolution also makes this process certainly more complicated. However, it is possible to seize the opportunity and rebuild the affected areas, and indeed the country, in line with the dreams of Pakistan's founders.

Pakistanis are clearly resilient people and Pakistani capabilities have been proven in the case of the 2005 earthquake. There is indeed hope. ♦



## A comparison of post-quake reconstruction in the Azad Jammu Kashmir (AJK) region and Balochistan

Description	AJK	Balochistan
<b>General</b>		
Year of event	2005	2008
Magnitude	7.6	6.4
<b>Damage and losses</b>		
People injured	130,000	170
Houses damaged	600,000	9,881
Houses severely damaged/ collapsed	463,000	5,188
Area affected in km <sup>2</sup>	30,000	-
District affected	12	3
Population affected	3,500,000	117,500
<b>Topography</b>	Mountainous, rugged terrain with difficult accessibility	Mountainous terrain with ease of accessibility
<b>Climate</b>	>33 percent snow bound  Extreme cold and moderate summer in most districts	<33 percent snow bound  Extreme cold and moderate summer in Ziarat
<b>Housing cash grant for reconstructed houses</b>		
Housing cash grant	PKR 175,000	PKR 350,000
Installment	4 including 25,000 for immediate shelter	Single installment
<b>Housing reconstruction</b>	175,000	350,000
Houses completed after two years	42 percent*	2 percent
Under construction	58 percent	3 percent
Rate of construction	42 percent	5 percent
Quality of construction	95 percent met the seismic standards	Nil (Extremely poor)

Source: UN-HABITAT Pakistan

\*The construction rate after three years is 95 percent (i.e. 436,543 of destroyed houses)

## WATER

**South Korea**

UN-HABITAT launched its successful Global Water Operators' Partnership Alliance in Seoul, South Korea, at the 15th meeting of the UN Secretary General's Advisory Board on Water and Sanitation (UNSGAB). More than 70 participants including representatives from academia, utilities, local governments and unions in South Korea attended the launch. The alliance presented the seminar Korea's Potential Role in Water Operators' Partnerships in cooperation with the International Center for Urban Water Hydroinformatics Research & Innovation (ICUH).

## INFRASTRUCTURE

**Samoa**

Samoa will receive financing totalling USD 11.8 million from the World Bank to support the reconstruction of vital infrastructure following the devastating tsunami that hit the country in September 2009. The Post-Tsunami Reconstruction Project will support the relocation and rehabilitation of communities on the island of Upolu, affected by the tsunami, by providing new access roads and rebuilding damaged roads and sea walls. The tsunami caused an estimated USD 124 million worth of damage and loss.

## EMPLOYMENT

**Bangladesh**

The World Bank has approved a USD 150 million IDA (International Development Association) credit to Bangladesh to create employment opportunities for the extreme poor in rural areas. One-third of the employment opportunities will benefit poor women. The Employment Generation Program for the Poorest Project will provide short-term employment to vulnerable households in extreme poverty, and especially to women. The project will support the existing programme run by the Government of Bangladesh that builds on previous successes.

## DISASTER MANAGEMENT

**Pakistan**

UN-HABITAT's team in Pakistan has completed a survey of housing needs for victims of the devastating July 2010 monsoon floods. The team used participant observation, community interviews and detailed analysis of individual houses to provide an overview of the damage, and, more importantly, an initial estimate of the capacity of households and communities to participate in the reconstruction. The UN-HABITAT team assessed the housing situation in all five provinces and Pakistan-administered Kashmir.

**Urban safety****UN-HABITAT to launch new programme dedicated to safer cities for women**

At the third international conference addressing the theme, *Women's Safety: Building Inclusive Cities*, in New Delhi, UN-HABITAT and UNIFEM announced that they plan to launch a new programme aimed at stopping sexual harassment and violence against women and girls. The Global Safe Cities for Women and Girls Programme will start in the five cities of Quito, Cairo, New Delhi, Port Moresby, and Kigali.

"A major section of slum dwellers in cities are women, and reducing urban vulnerability needs to be integrated with urban planning and policy making," said Axumite Gebre-Egziabher, the Director of UN-HABITAT's Global Division.

"Every day, women and adolescent girls face sexual harassment and violence as they go about their daily routines — whether on city streets, in buses and trains, or in their own neighbourhoods," said UNIFEM Executive Director Inés Alberdi. "This limits their freedom and rights to education, work, recreation and participation in political life."

All five cities have strong support from local authorities, the potential for far-reaching engagement of civil society groups, and partnerships with agencies involved in ending gender-based violence, community safety, urban planning and development. They are committed to



UN-HABITAT wants to make cities safer for women and girls  
Photo © UN-HABITAT

rigorous evaluations to determine which course of action brings the best results.

Rajiv Kale, Director in Delhi government's Department of Women and Child Development, said the women of the capital felt insecure in public spaces and crowded public transport, adding that the problem needed a long-term change in mindset.

"A baseline survey conducted by Jagori (the government resource centre) very clearly highlighted that being a woman is in itself a risk factor in the capital and that women feel insecure in crowded public places, due to poor lighting on roads and a lack of clean public toilets."

Potential measures may include stronger laws and policies against violence in public spaces; training for urban planners, grassroots women's groups and police; special audits to identify unsafe areas; mass media campaigns on 'zero tolerance' for violence against women; activities to engage local communities, men and adolescents of both sexes; and reviews of public sector budgets so that adequate resources are spent on making public areas safe for women and girls. ♦

**Sustainable building**  
**Construction of sustainable apartments begins in Kolkata**

Living Steel, the worldwide, collaborative programme designed to stimulate innovative and responsible housing design and construction worldwide, has announced that Restello, the winning design from their 2006 International Architecture Competition, has begun construction in Kolkata, India.

As previously reported in *Urban World*, Restello, selected as the winning design

from an international field of 18 shortlisted entries, is an innovative residential block comprising of 12 luxurious boutique apartments that combine stunning design with a groundbreaking approach towards sustainability. The 3 and 4 bedroom apartments, 342 and 495 square metres respectively, are designed with large, flowing, open-plan living spaces. The building's exterior is wrapped in perforated steel shutters, designed to filter sunlight and provide natural ventilation that fold back to reveal double-height terraces between the façade and a second glazed 'skin'.

"We're delighted that the first of the Living Steel competition-winning designs is now on



## Water and sanitation

### Nepal launches National Sanitation Programme

The Government of Nepal has launched a new National Sanitation Programme (NSP) supported by the Global Sanitation Fund (GSF) of the Water Supply and Sanitation Collaborative Council (WSSCC). Following a competitive selection process, the United Nations Office for Project Services (UNOPS) on behalf of WSSCC, asked UN-HABITAT to be the Executing Agency for the GSF in Nepal, where it is estimated that less than half the population has access to toilets.

In Nepal, it is estimated that 43 percent of the population has access to toilets and amongst the poor sanitation coverage is only 12 percent. As a result, open defecation is rampant with frequent outbreaks of diarrheal diseases. The rapid growth of population in urban and peri-urban areas further aggravates the problem of poor water supply and environmental sanitation.

UNICEF estimates that more than 13,000 children below five years of age die of diarrheal diseases annually. The economic consequences are also severe with an estimated loss of over USD 140 million every year in terms of health expenses, loss of productivity and adverse impacts on tourism due to poor hygiene and environmental sanitation.

As the Executing Agency of the Global Sanitation Fund, UN-HABITAT will build on its ongoing experience, and support the government of Nepal to implement its national Sanitation



UNICEF estimates that more than 13,000 children below five years of age die of diarrheal diseases annually  
PHOTO © UN-HABITAT

and Hygiene Master plan, increase sanitation coverage and establish good governance in the sanitation sector. The Global Sanitation Fund will support proven approaches such as participatory hygiene promotion, community-led decisions and actions, and sanitation marketing involving the private sector. Funds amounting to USD 5 million will be provided by the WSSCC to UN-HABITAT to implement the programme over the next five years. The programme will concentrate on five districts and will potentially impact the lives of three million people.

Since, 2005, through its Water for Asian Cities Programme, UN-HABITAT has worked with the government and civil society partners in Nepal to improve water supply and environmental sanitation in urban and peri-urban areas. UN-HABITAT's support also complements Asian Development Bank assisted projects, implemented under the aegis of a collaborative framework between UN-HABITAT and the bank. ♦

its way to being realized," said Scott Chubbs, Living Steel Programme Director. "The innovation and beauty of Restello has the capacity to help meet the demand for luxury housing in the rapidly expanding New Town. We have an outstanding team working on this project and it is through this collaboration with developer Bengal Shrachi, architects Piercy Conner, Tata BlueScope Steel and Tata Steel that we are able to bring this beautiful, groundbreaking building to life."

Due for completion in late 2011, Restello, India's most modern steel residential project, will set a new standard for residential construction with steel that has good environmental

benefits, not just throughout the developing area of Rajarhat in New Town, Kolkata (West Bengal), but throughout India. Each apartment will cost approximately USD 224,000 and are marketed towards the flourishing 'high-income group' of Indian workers and entrepreneurs capitalizing on the world's second fastest growing economy.

"Bengal Shrachi is extremely proud that the technological and aesthetic creativity of Restello is now part of our portfolio. We are confident that the project will set a new standard in residential construction within the area," said Rahul Todi, Managing Director of Bengal Shrachi Housing Development Ltd. ♦

#### URBANIZATION

##### China

The new Permanent Representative of the People's Republic of China to UN-HABITAT, H.E. Mr. Guangyuan Liu, has stated that his country attaches great importance to the role of UN-HABITAT in the world but also that China is still in need of support from the organization. Mr. Liu told the Executive Director, Joan Clos; "We still need your expertise. We want to mobilize our rural areas. Urbanization is a very important task for the Chinese Government." Dr. Clos praised the Chinese people for their commitment to excellence, as an example to the rest of the world.

#### RURAL DEVELOPMENT

##### Solomon Islands

The World Bank is to provide additional funding of USD 3 million for the Solomon Islands Rural Development Program (RDP). The RDP aims to raise the living standards of rural households by improving local level infrastructure, by increasing the capacity of the Ministry of Agriculture and Livestock to improve agriculture extension services, and by supporting rural business development. The additional funds will help consolidate promising progress particularly in providing essential rural infrastructure and services to communities, and improving agricultural services at the provincial level.

#### HOUSING

##### Nepal

City dwellers in Nepal are finding it increasingly hard to afford housing due to rapid price rises in land, according to a new UN-HABITAT report. *The Nepal Housing Profile Study*, published jointly with the Ministry of Planning and Physical Works in Nepal, shows that urban land prices have risen by 300 percent since 2003, making housing increasingly out of reach for lower income residents. Presenting the findings Ester van Steekelenburg, International Advisor to UN-HABITAT, said that the country was urbanizing rapidly due to an expansion of urban areas and high rates of rural-urban migration.

#### DISASTER RESPONSE

##### Indonesia

The Asian Development Bank (ADB) is providing a USD 3 million grant to Indonesia to assist the aid efforts in the wake of the Mount Merapi volcano eruptions, which destroyed homes and displaced hundreds of thousands of people in the Central Java province and Yogyakarta Special region. ADB's assistance will be used to build temporary shelter, normalization of public facilities (schools, health care, water and sanitation) and the setting up of a cash-for-work scheme for refugees to clear debris. More than 300 people were killed and over 400,000 people were forced to flee their homes because of the eruption.

# EDUCATION

## MENA region

Seventeen Arab states have agreed upon the urgent need to improve the quality of education across the region and implement a system of evaluating the performance of schools, teachers and students. Results are to be made public and shared among participating countries. The steps towards the improvement of education quality are to be formalized through the Doha Declaration on Education Quality in the Arab world.

# ENERGY

## North Africa

GL Garrad Hassan, the world's largest independent renewable energy consultancy, is teaming up with the Desertec Industrial Initiative to provide support to all stages of solar and wind projects with a special focus on bringing costs down to a competitive level. The Desertec Industrial Initiative (DII) calls for a vast array of wind farms, photovoltaic parks, and concentrating solar power projects to be built across North Africa, capable of providing 15 percent of Europe's electricity requirements by 2050.

# CONSTRUCTION

## Egypt

Ninety percent of 1,043 construction professionals have indicated they want to learn more about maximizing the environmental benefits of new building construction in Egypt in a recent survey conducted by International Quality and Productivity Centre (IQPC). In the same survey, 70 percent of respondents identified the need to expand their knowledge of green building design and performance, air quality, water conservation and waste minimization. Sixty percent also wanted to learn from experts about the latest developments in sustainable design and materials.

# ENERGY

## Egypt

Egypt and the World Bank signed two new loan agreements worth USD 820 million, in the largest financing provided by the institution to the country's electricity sector. The two agreements are for the construction of a 1,500 megawatt combined cycle gas turbine power plant in north Giza, near Cairo, worth USD 600 million, and the development of a wind power project worth USD 220 million.

# Environment

## Help needed to restore Iraqi marshlands



Mr. Joan Clos (r) receives the credentials from Dr. Adel Mustafa K. Al-Kurdi

Photo © UN-HABITAT

The new Permanent Representative of the Republic of Iraq to UN-HABITAT, H.E. Dr. Adel Mustafa Kamil Al-Kurdi, has appealed to the organization to help restore the marshlands in the country. Dr. Al-Kurdi made the appeal while presenting his credentials to the Executive Director, Mr. Joan Clos.

The Iraqi marshlands constitute the largest wetland ecosystem in the Middle East, but they were considerably damaged as a result of conflict and poor conservation.

The envoy stated that Iraq is a rich country, but because of the war the country has not been able to achieve its full potential.

Noting that the occasion was "a good opportunity to strengthen the relationship between UN-HABITAT and Iraq," Dr. Al-Kurdi invited

the Executive Director to visit Iraq to see for himself the situation in the country and how UN-HABITAT can help.

Mr. Clos accepted the invitation and said that UN-HABITAT has several projects in Iraq to make the management of public affairs in the country more effective.

UN-HABITAT has more than 13 years experience working in Iraq. The UN-HABITAT Iraq Programme relies on non-earmarked resources to implement its programmes and projects. By 2003, the total cost of the programme stood at more than USD 100 million, distributed among 30 projects and programmes, mostly funded through the United Nations Development Group, and to a lesser extent through bilateral channels. ♦

# Energy efficiency

## Gaza goes green

UN-HABITAT with the HABITAT Partner University of Westminster, organized a three-day inter-active workshop with key housing actors from universities, international and national non-government organizations, the United Nations, private sector and members of the Gaza Shelter Reconstruction Working Group.

The Workshop was hosted by UNRWA and opened with a speech by John Ging, Director

for UNRWA in the Gaza Strip. Participants explored affected neighbourhoods and exchanged ideas on how to make the design, construction and use of the traditional concrete houses for extended families more energy-efficient, keeping in mind existing self-help building practices, daily habits and socio-cultural and economic realities; exploring also how changes to everyday living practices can save on resources and cut down energy consumption.

The Israeli blockade of the Gaza Strip, which started in 2006, makes it impossible to supply the local market with legitimate building



## Education

### Yemeni girls to receive education boost



One part of the initiative aims to improve school enrolments

PHOTO © DANA SMILLIE / WORLD BANK

The World Bank wants to expand to Yemen an international public-private initiative that helps adolescent girls and young women improve their lives and economic prospects, World Bank Group President Robert B. Zoellick announced.

"We have secured initial funding for an expansion of the Adolescent Girls Initiative (AGI) and we are hoping that one of the first countries to benefit will be Yemen," said Mr. Zoellick. "Adolescent girls and young women living in poor homes have a hard time making the school-to-work transition. So investing in their skills development and job prospects will contribute to break the inter-generational patterns of poverty in their communities."

Mr. Zoellick said that work is also about to begin in Yemen through an existing World Bank-funded cash transfer programme. In Yemen, the AGI will evaluate transfers that aim to get adolescent girls to school, and help them complete their education.

Previous experience with cash transfer programmes to adolescent girls in Malawi has shown improvements in school enrolment, declines in teen marriage and pregnancy, and decreases in risky sexual activity and in the prevalence of HIV/Aids.

Evidence also shows that investing in adolescent girls is one way to break inter-generational poverty. Young women that are more educated and have greater access to reproductive health are more likely to delay marriage and childbirth, have healthier babies and attain higher literacy rates. An extra year of secondary schooling, for instance, can raise their future wages by 10 to 20 percent.

Some examples of the achievements of the AGI include the training in Liberia of more than 1,000 young women in business development or job skills from sectors with high demand, such as hospitality or office/computer jobs. In Jordan, the AGI is providing subsidies to firms to hire new graduates with no experience. ♦

materials, preventing affected families from reconstructing their houses. Families across the Gaza Strip also cannot expand or build new housing units to deal with natural growth. Limited quantities of building materials are being smuggled at high prices through tunnels under the Egyptian border, which also closed itself for imports. The real housing needs, estimated at over 60,000 units, now exceed the need for reconstruction tenfold.

The poor economic situation, the lack of space to build within the Gaza Strip, which already has a very high urban density, and

the demanding climate conditions, are pushing Gazans to become ever more creative in pursuing a sustainable urbanization of the Gaza Strip.

The participants also made a case not to dissociate the house from the neighbourhood, looking at cost-effective ways of re-using grey-water to make neighbourhoods greener, more productive and child friendly, using green on roofs, facades and streets to create a less harsh micro-climate. The event was timed with the World Habitat Day celebrated in Shanghai on 4 October. ♦

## TRANSPORT

### Dubai

More than 600,000 passengers used Dubai's mass transit system during the Free Transport Day, on 1 November, initiated by the Roads and Transport Authority (RTA) to mark its fifth anniversary. Of the 606,390 passengers counted by RTA, 205,965 took the Dubai Metro compared to a daily average of 140,000 on a normal day. A total of 394,325 passengers used public buses compared to around 296,000 passengers recorded on Sunday. The number of passengers who took the waterbus reached 6,100 compared to 700 on any normal day. Around 437,000 passengers use all three modes of public transport on normal days. The Free Transport Day will be held every year on 1 November.

## DISPLACEMENT

### Iraq

A UNHCR poll of Iraqis who have returned to Baghdad from neighbouring countries found that physical insecurity, economic hardship and a lack of basic public services has led the majority to regret their decision to return to Iraq. The survey included 2,353 Iraqis, or 537 families, who returned to the Baghdad districts of Resafa and Karkh between 2007 and 2008.

## WATER

### Lebanon

The Arab Forum for Environment and Development (AFED) held its third annual conference in November, in Beirut, where the results of a ground-breaking report on the state of water in Arab countries, prepared by AFED, with the participation of leading researchers and scientific centres was released. A highlight of the conference was the presentation by the Director of the Center of Remote Sensing at Boston University (CRS-BU) Dr. Farouk El-Baz, about locating possible groundwater sites in the Arab desert via satellite images.

## ENERGY

### MENA region

Mitsui Engineering & Shipbuilding Co. and general contractor Taisei Corp. are joining forces on power plants that use the sun's heat to generate electricity. Mitsui Engineering will design the plants, and Taisei will build them overseas, in desert areas where land is cheap and sunlight plentiful. Mitsui Engineering's plant design consists of a central tower surrounded by a field of mirrors. The mirrors concentrate sunlight on the top of the tower, boiling water to create steam that drives generator turbines. The shipbuilder has already set up a 100 kilowatt testing facility in Abu Dhabi.

## RENEWABLE ENERGY

**Bosnia and Herzegovina**

The European Bank for Reconstruction and Development is continuing to promote energy efficiency and renewable energy projects in Bosnia and Herzegovina with a EUR 5 million (USD 6.57 million) credit line to UniCredit Bank, for on-lending to local private companies undertaking sustainable energy investments. The proceeds of the loan will be used to support companies investing in industrial energy efficiency, small renewable energy production and energy efficiency in commercial buildings with loans worth up to EUR 2 million.

## WATER

**Serbia**

The first set of Water Operators' Partnerships has been launched in southeast Europe, under the Water Operators' Partnerships-South East Europe (WOP-SEE) platform. During the Sajam Voda (Water Exhibition) 2010 in Belgrade, Serbia, the Governor of the South Backa District, Ms. Darija Sajin, launched the twinning project that will see waterworks employees and municipal officials getting practical experience in water loss reduction from other water providers. Utilities from 11 municipalities will be exposed to the approaches of Croatian utilities, which have made great strides in reducing their water losses.

## INFRASTRUCTURE

**Georgia**

Georgia is to receive EUR 33.7 million in Additional Funding (AF) from the World Bank for the Regional and Municipal Infrastructure Development Project (RMIDP). The Additional Financing has been requested by the Government of Georgia to scale up the Project activities through rehabilitating additional municipal services and infrastructure throughout the country, and preparing strategic development plans for a number of selected cities. Technical support will be provided to participating municipalities to ensure sustainable services.

## TELECOMMUNICATIONS

**Hungary**

Magyar Telekom will receive a EUR 150 million loan from the European Investment Bank (EIB) to further develop telecommunications infrastructure in Hungary to meet the increasing demand in terms of population coverage and quality of services provided. The EIB loan will co-finance the development of Magyar Telekom's mobile networks, 3G and Long-Term Evolution (LTE), and fixed line telecoms infrastructure. The project will support the roll out of the LTE network in Hungary, and fixed broadband will enable very high-speed services for over 1 million Hungarian households.

**Urban planning****New UN-HABITAT report highlights its activities in eastern, southern and central Europe**

UN-HABITAT have released a 2010 Regional Bulletin highlighting the organization's activities in eastern, southern and central Europe, with a view to promoting better urban planning, stronger local government, climate change measures and decentralization.

"The 2010 Regional Bulletin is published at a time when many of the countries of this region are facing serious flooding, subsidence and brush fire related problems," said Krzysztof Mularczyk, Director of UN-HABITAT's regional office in Warsaw. "What these natural disasters have brought to the fore is the role of spatial planning in protecting people from future disasters. It is clear that in many cases development was mistakenly allowed on flood plains and in areas where subsidence was likely. Urban sprawl as a phenomenon has contributed to this as these areas tend to be on the outskirts of cities."

In his introduction to the report, Mr. Mularczyk says it is increasingly difficult to deny that the downgrading of planning has contributed to the problems being experienced.



2010 Regional Bulletin highlights UN-HABITAT's activities in eastern, southern and central Europe  
Photo © UN-HABITAT

"Not only does that lead to development which does not include adequate provision for public space or even infrastructure, but it also can contribute to sustaining heavy material and human losses as a result of natural disasters."

UN-HABITAT has consistently advocated the need to ensure that planning takes account of the risks of natural disaster and that cities should be compact rather than sprawling. The

agency has also argued for cities to prepare for climate changes with investment in adequate drainage and air corridors to ensure a natural cooling effect.

Local government, as it acquires additional powers and resources will increasingly be the decision maker on these issues. Decentralization has brought with it many benefits and helped in building the civil society that everyone desires.

"However, there must be room for a legal and supervisory framework to protect both individuals and communities from unsustainable forms of development. Let us hope that this is the positive lesson that will come out of the problems our countries have experienced this year," said Mr. Mularczyk. ♦

**Information and Communication Technology  
Armenia to upgrade ICT sector**

Armenia will receive a EUR 18 (USD 23) million loan from the World Bank for its E-Society and Innovation for Competitiveness (EIC) Project. This highly innovative project will assist the Government of Armenia in its ongoing efforts to address constraints to competitive e-Society and enterprise innovation in Armenia by strengthening the underlying infrastructure and enabling environment.

"This innovative project seeks to unleash ICT as a new driver for growth and job creation in Armenia," said Asad Alam, World Bank Regional Director for the South Caucasus Countries. "Improved access to comput-

ers and high speed Internet connectivity will help boost economic productivity, spur innovation, raise incomes of families and small businesses, and help create jobs."

The Project is specifically designed to address the numerous challenges in the Information and Communication Technology (ICT) sector in Armenia and promote enterprise innovation. It supports measures aimed at increasing access to affordable broadband services for citizens, businesses and public institutions (through development of Nationwide Broadband Backbone and Government Network); equipping citizens and businesses with a tool for



## Water

### Romania to modernize its water utilities

The European Bank for Reconstruction and Development (EBRD) is supporting the further modernization and regionalization of water utilities in Romania with a EUR 200 (USD 263) million co-financing framework that will allow municipalities to utilize grant funding from the European Union's Cohesion Fund.

"The EBRD's new Regional EU Cohesion Fund Co-financing framework builds on the Bank's track record in supporting water sector reforms in Romania, as well as its long and successful partnership with SC Raja SA Constanta," said Jean-Patrick Marquet, EBRD Director for Municipal and Environmental Infrastructure. "This project will support the completion of regionalization of water and wastewater services in Constanta and Ialomita counties. Most importantly it will facilitate further availability of safe and quality water services in the country."

Through the new facility, Regional EU Cohesion Fund Co-financing Framework (R2CF), the Bank will create a financing instrument to support critical investments in Romania's water and wastewater infrastructure, helping the country's utilities to align their services with EU environmental standards.

Under the framework, the EBRD will provide financing to water utilities on a non-recourse basis, demonstrating its strong confidence in the sector. It is estimated that the EUR 200 million framework will mobilize additional investments of close to EUR 1.5 billion in Romania's water and



The project will help protect the Black Sea coast in Constanta  
PHOTO © JACK MALONE

wastewater infrastructure. The EBRD will work with the Romanian Water Association to promote sector-wide performance monitoring and service improvements through a benchmarking programme for water operators in Romania.

"This project marks another important step for SC Raja SA Constanta to improve water and wastewater services for the people in our beautiful city, the Black Sea coast and the counties of Constanta and Ialomita," said Mr Felix Stroe, General Manager and President of Administrative Board of SC Raja SA Constanta. "The project will help to protect our environment for future generations and is the recognition of all the hard work by the company, the city, the county, the Intercommunity Development Association, the Romanian Water Association, the Ministry of the Environment and the European Union."

SC Raja SA Constanta, one of the largest water utilities in Romania, operating in the counties of Constanta and Ialomita, is the first beneficiary under the new framework. The company provides water and wastewater services to over 500,000 people in the southeastern part of the country. ♦

authentication of electronic transactions (Digital Citizen Program); and increasing access to affordable computers as well as e-services for citizens (Computer for All Program).

The EIC Project will also promote the creation, growth and competitiveness of knowledge and technology driven enterprises while, at the same time, encouraging traditional sectors to adopt new technologies. This will stimulate the rate of technology absorption, innovation and commercialization in the private sector, foster collaboration between research and industry, and promote the development of new knowledge and technology driven companies across Armenia.

"Despite the promising developments in the last few years, major challenges remain

for the sector," said Juan Navas-Sabater, Head of the World Bank Team that designed the project. "The level of internet penetration, or access to broadband, is currently at an insufficient level to achieve the government's aspirations of a modern information society. The inequalities in access to modern ICTs between the capital city and rural areas are compounded by high prices for advanced services, due to the lack of competition in access to international telecommunication networks and a lack of investment in domestic backbone networks."

Total financing of the project is EUR 22.5 million, of which the Government of Armenia will finance EUR 4.5 million from its own resources. ♦

#### WASTEWATER

##### Montenegro

The European Bank for Reconstruction and Development is supporting the modernization of water infrastructure in the Montenegrin municipality of Danilovgrad with a EUR 5.35 (USD 7.05) million sovereign loan to Montenegro to finance the construction of a wastewater network, a treatment plant and to upgrade the water supply. Located in the central part of the country, in the valley of the Zeta River, Danilovgrad is a rapidly expanding urban municipality in need of an improvement in its wastewater services to meet increased water demand.

#### TRANSPORT

##### Belarus

The World Bank has approved a EUR 112 million loan for the Republic of Belarus for a Road Upgrading and Modernization Project to help develop Belarusian transport infrastructure on a strategic transit corridor and introduce electronic tolling. The overall programme includes the construction of four-lane motorways between Minsk and all five oblast capitals. In addition, the government envisages relying increasingly on revenues from road tolling for the funding of road maintenance and further upgrading of the road network.

#### INFRASTRUCTURE

##### Czech Republic

The European Investment Bank (EIB) is to lend EUR 78 million to the Moravia-Silesia Region, in the northeast part of the Czech Republic, to improve regional infrastructure. EIB funds will also support investment in transport, health and social care, education, culture and tourism, the environment, and information and communication technologies. The loan will partly finance the bypass of the city of Opava, the modernization of civil engineering schools and development of electrical engineering education centres, and the purchase of emergency rescue vehicles.

#### ENERGY EFFICIENCY

##### Poland

The European Bank for Reconstruction and Development (EBRD) is promoting energy efficiency in Poland with a EUR 50 million loan to Bank BGZ and EUR 35 million loan to Bank Millennium for on-lending to local small and medium enterprises undertaking sustainable energy investments. The loans are part of the EBRD's EUR 150 million Poland Sustainable Energy Financing Facility (PolSEFF). The EBRD financing will support the banks in extending sustainable energy financing to small and medium enterprises operating in the manufacturing, services, retail, agri-business and other sectors.

## Transport

### Google's new drive

Search engine giant Google, has developed the first steps of technology for cars to drive themselves, in a bid to prevent traffic accidents, free-up people's time and reduce carbon emissions by fundamentally changing car usage.

The automated cars have clocked up over 225,000 kilometres, through the streets of San Francisco, including the famous bendy Lombard Street, the Pacific Highway and Los Angeles.

The automated cars use video cameras, radar sensors and lasers to 'see' traffic together with maps so as to navigate the road ahead. A trained safety driver and a software operator sit in each car that can easily take over the controls if required.

Before tests begin, a conventionally driven car sets out to map conditions, lane mark-

ings and traffic signs, so the software, which the automated car will use, becomes familiar with the route.

Sebastian Thrum, software engineer, wrote on Google's blog: "According to the World Health Organisation, more than 1.2 million lives are lost every year in road traffic accidents. We believe our technology has the potential to cut that number, perhaps by as much as half. We're also confident that self-driving cars will transform car sharing, significantly reducing car usage, as well as help create the new 'highway trains of tomorrow'."

"These highway trains should cut energy consumption while also increasing the number of people that can be transported on our major roads," he added. "In terms of time efficiency, the US Department of Transportation estimates that people spend on average 52 minutes each working day commuting. Imagine being able to spend that time more productively."



Google's automated car could cut road deaths by half  
PHOTO © GOOGLE

Although the technology is still very much in its infancy Google hopes it will provide a glimpse of what transport might look like in the future thanks to advanced computer science. ♦

## Environment

### Atlanta aims to become the greenest US city



Mayor Kasim Reed, at the launch of the Power to Change initiative

PHOTO © CITY OF ATLANTA

Atlanta Mayor, Kasim Reed, announced plans to make his city one of the greenest in the US, through the newly launched Power to Change initiative. As part of the plan, Mayor Reed has set the aggressive goal of making Atlanta a top 10 city for sustainability and wants to follow the lead set by Seattle, Chicago and New York, that have pioneering policies on green building, electric vehicle infrastructure and pedestrian-only zones.

"I believe the City of Atlanta should be a leading example of how a major urban municipality can take greater responsibility for efficient energy and water use, the conservation of green space, and the promotion of a healthier, cleaner and greener environment," Mayor Reed said. "It is vital we take concrete, measurable actions around sustainability now to protect the future of our city."

Atlanta's Power to Change has outlined goals up to 2050, whereby one of the first steps will be to introduce hybrid and non-petrol vehicles to the municipal motor fleet. By 2012 some 15 per cent of the fleet would consist of alternative-fuelled vehicles.

Other major targets include; to reduce greenhouse gas emissions within the City of Atlanta's jurisdiction by 25 percent by 2020, 40 percent by 2030, and 80 percent by 2050; to reduce energy use for existing municipal operations by 15 percent by 2020, 40 percent by 2030, and 80 percent by 2050; to make renewable energy five percent of total municipal use by 2015; and to bring local food within 10 minutes of 75 percent of all residents by 2020.

The city also plans to increase its use of renewable energy. A grant of USD 7 million from the Georgia Environmental Facilities Authority will be used to install more efficient turbines at a water reclamation centre, reducing its reliance on water from the state of Georgia.

The release of the sustainability plan took place during the city's first ever Sustainability Week, that ran from 25-29 October. Daily activities and programmes focussed on different areas of the plan, including water quality and conservation, energy efficiency, jobs growth, local foods, and electric vehicles. ♦



## Transport

### Scooters make a comeback on London streets

Footpaths across London are being taken over. Not by 'hoodies' or gangs, but by three to five-year old students on mini scooters on their way to school – parents in tow.

The mini-micro scooters feature two wheels at the front and one at the rear – to avoid any nasty spills. Anna Gibson, co-founder of Micro Scooters UK, believes the scooters have revolutionized how kids and parents get to school.

"It's great for children in terms of health and obviously fantastic for the environment," she said. "For a mother it is a bit of a nightmare to get to school. It means ... you are more likely to walk to school because you can get your three-year old, plus your five-year old, on a micro-scooter and your one-year old in a push-chair."

The Royal Borough of Kensington and Chelsea (RBKC) has seen such an increase – 33 percent between 2008/9 and 2009/10 – in the number of children scooting to school that it has introduced a training scheme. Called ScootSurfers, the programme is being



Scooting to school in London

PHOTO © MICRO SCOOTERS UK

offered to all primary schools in the borough where footpath etiquette and safety advice are given, in which 18 schools now participate.

"Scooting to and from school not only helps encourage children to adopt healthier lifestyles but also eases congestion and reduces CO<sub>2</sub> emissions," said RBKC Councillor Nicholas Paget-Brown. "We need to ensure that those using scooters respect other pedestrians and pavement users."

Carbon emissions are reduced as more parents walk to school with their kids on scooters, reducing congestion around schools added Mrs. Gibson.

Asked whether the micro-scooters would soon disappear, as have adult scooters from London streets, Mrs. Gibson said: "It's not a craze, or a fad. It is a means of getting from A to B. In the same way bicycles are a part of our lives, I see scooters even more so. If you're in London in busy streets, you aren't going to send children on their bikes to get to school. I see it as a lifelong product."

Transport for London doesn't see it as a fad either as from September it began to collect data separately for trips made by scooters from schools, which will be available in 2011. ♦

## Environment

### Spanish and French cities named as Green Capitals

The Spanish city of Vitoria-Gasteiz and the French city of Nantes have been awarded as the next European Green Capitals prize for the years 2012 and 2013. These two cities have been selected among a group of six finalists for their commitment to the environment and for sustainable urban planning.

Vitoria-Gasteiz, a regional capital of northern Spain, has made great progress in greening a traditional urban environment. The 'Green Belt' of Vitoria-Gasteiz, a semi-natural green area partially reclaimed from degraded areas, surrounds the centre, ensuring its entire population of almost a quarter of a million people lives within 300 metres of an open green space. Numerous measures are in place to assist and increase biodiver-

sity and ecosystem services. Flora and fauna are monitored and habitat fragmentation is reduced wherever possible. The city is also successfully coping with water scarcity and has steadily decreased its water consumption over the last decade.

Nantes, France's sixth largest city with a population of 285,000, has successfully linked its green and blue urban areas, integrating urban challenges with a location on two major rivers (the Loire and the Erdre), through a sustainable water management programme. Several nature conservation areas border the city, and conservation of flora and fauna are a key concern for its population. Nantes has a long established integrated and sustainable transport policy with a focus on public transport and cycling, and was the first French city to successfully reintroduce electric trams.

The annual award is a new initiative presented to a city in the vanguard of environmentally friendly urban living. The award



Biodiversity and ecosystem services have risen within the city of Vitoria-Gasteiz

PHOTO © AYUNTAMIENTO DE VITORIA-GASTEIZ

panel evaluated the cities on the basis of 11 environmental indicators, judging their record in achieving high environmental standards, and the extent to which they can act as a role model and promote best practice in other European cities.

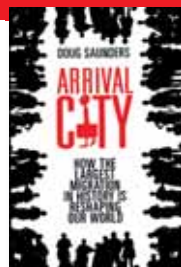
The European Commission Green Capital awards aims at encouraging cities to improve the quality of urban life by systematically taking the environment into account in urban planning. ♦



## 2010 State of African Cities Report

Over the next 40 years, the population of African cities is expected to triple. Cities are spatially growing because of poor land management and weak urban governance. The 2010 *State of African Cities Report on Governance, Inequality and Urban Land Markets* analyses urban land markets and the role of communities in improving urban land governance. The report is a must read as it further delves into the risks faced by rapid

urbanization for African cities such as climate change, urban poverty, urban health, water and sanitation. The report also exposes the vast potential in African cities, including the role of economic corridors in contributing to poverty alleviation. Through improved urban governance and policies, the report presents recommendations to national and local authorities on how to better manage their cities.



## Arrival City

They are 1,100 million (one-fifth of humankind) and they can't wait to join the mainstream urban middle class – if not them, then the next generation. In developing and emerging countries, peri-urban shantytowns epitomize the situation of those first- or second-generation rural migrants caught between the native village and the glittering city of their dreams, and who split their hard-won meagre wages between parents back home and school fees for younger siblings. In his new work on urban migration, *Arrival City*, Doug Saunders, calls it “the largest migration in history” and one that “is reshaping our world”. If anything, this grand phrasing rightly points to this extraordinary sense of tenacious, self-denying

endeavour that speaks to human dignity in the middle of the most undignified working and housing conditions.

As he listens to the stories of slum-dwellers, Saunders does not paint them into heroes or victims. The vivid stories (the author is a London-based op-ed editor of the *Toronto Globe and Mail*) could easily coalesce into a neo-liberal paean to bootstrap one-upmanship in the face of inherent government shortcomings; instead Saunders' home-made concept of the *Arrival City* is based on his own keen sense of reality and his perception of the various factors behind the ‘urban divide’ – including the finer though critical points of land tenure.



## The State of Asian Cities 2010/11

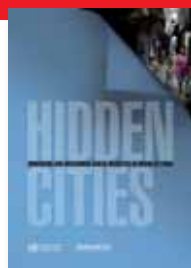
The *State of the Asian Cities* report launched in Shanghai on World Habit Day 2010, is the first in a new series to be published every other year. Written and prepared by some of the foremost experts on the Asia-Pacific region, it is intended as a platform for debate and a handbook for action. It is a most interesting outcome of a cooperative effort between UN-HABITAT, the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), the United Nations Environment Programme (UNEP), and United Cities and Local Governments (UCLG).

The report throws new light on current matters and challenges facing national and local governments, the business sector and organized civil society. On top of putting forward a number of recommendations, this report testifies to the wealth of good, innovative practice that countries of all sizes

and stages of development have accumulated across the region. It shows us that sustainable human settlements are within reach, and that cooperation between public authorities, the private and the voluntary sectors is the key to success.

This report also highlights a number of critical issues – demographic and economic trends, poverty and inequality, the environment, climate change and urban governance and management.

The *State of the Asian Cities* stimulates new thinking and fresh approaches to inclusive, sustainable urban development in the Asia-Pacific region. Packed with the latest facts and figures, it is essential reading for all, whether top decision makers or simply those seeking to keep themselves informed of new trends developments in the world's most populous region.



## Hidden Cities: Unmasking and Overcoming Health Inequities in Urban Settings

This report published jointly by UN-HABITAT and the World Health Organisation (WHO) examines the plethora of health problems in our rapidly urbanizing world. With an estimated 1 billion people around the world living in slums and other sub-standard housing, the problems we face in town can be far greater than anything in the countryside. These conditions include social determinants such as poor and overcrowded housing; unhealthy and unsafe working conditions, a lack of access to safe drinking water and sanitation, a lack of access to health care, and social exclusion. Despite this, health solutions in too many countries around the

world are dominated by disease-focussed solutions. We urgently need more attention paid to the manner in which measures are taking to transform urban living and working conditions as well as the social processes and knowledge that can lead to a sustainable improvement in urban health. This joint WHO and UN-HABITAT report, *Hidden Cities: Unmasking and Overcoming Health Inequities in Urban Settings* is prepared by some of the world's foremost experts in this field. Carefully researched and presented with interesting statistics, this is important reading for all, especially public health officials, city managers and government leaders.

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**14th Annual EUEC 2011 – Energy, Utility & Environment Conference**

31 January - 2 February 2011  
Phoenix, Arizona, USA  
[www.euec.com](http://www.euec.com)

EUEC is an annual energy, utility and environment conference where over 3,000 delegates including environmental business leaders, energy executives, NGO's and government policymakers converge to collaborate on the various issues facing energy generation, the future of utility and its impact on the environment. Over a three day period more than 650 of the world's leading experts will speak on the diverse topics of clean air policy, legislation and technologies, multi-pollutant control, energy and climate policy, wind, solar, EV-PHEV, carbon markets and CCS, corporate greenhouse gas (GHS) strategies, biofuels, biomass, and biogas, sustainability and reliability, energy efficiency and management, renewable energy and operations and management.

**International Green Growth and Environmental Solutions Exhibition**

3-5 February 2011  
Cannes, France  
[www.getisgroup.com](http://www.getisgroup.com)

GETIS 2011, the International Green Growth and Environmental Solutions Exhibition will be held at the Palais des Festivals et des Congrès de Cannes from 3-5 February 2011. One of the main objectives of this exhibition is to promote a new cooperative model for the green growth. This intention raises as much economical, environmental and geopolitical issues as opportunities for a Euro-Mediterranean sustainable development. During this event, workshops will gather researchers from the surrounding area of the Mediterranean Sea as well as from all over Europe to present to communities and to public officials the different methods, approaches and operational tools which will allow them to progress toward an urban sustainable development.

**World Sustainable Energy Days 2011**

2-4 March 2011  
Wels, Austria  
[www.wsed.at](http://www.wsed.at)

New and green energy alternatives are the responsibility of all mankind. The 2010 World Green Energy Symposium and Exposition will bring together government leaders, business leaders, businesses, innovators, university and college students, and consumers at large, in an atmosphere conducive to information exchange on new and alternative green energy possibilities and opportunities. The World Green Energy Symposium's topics include current policy information, new policy ideas and world policy views. It will focus on green technology options available and those already succeeding.

**Gulf Environment Forum**

6-8 March 2011  
Jeddah, Saudi Arabia  
[www.gulfenvironmentforum.com](http://www.gulfenvironmentforum.com)

The Gulf Environment Forum (GEF), the most prestigious environmental event in the region, returns in 2011 to the Jeddah Hilton. GEF provides a unique business platform for industry experts and innovators to demonstrate their expertise and play an active part in establishing a sustainable and environmentally responsible region for generations to come. GEF combines an international exhibition and strategic conference, focusing on: renewable energy – solar, wind, nuclear waste management – recycling, waste to energy water, wastewater – water reuse, desalination environmental technology – green building and sustainable development.

**African Economic Forum 2011**

7-10 March 2011  
Cape Town, South Africa  
[www.petro21.com](http://www.petro21.com)

The 5th Africa Economic Forum 2011 (AEF-2011), taking place in Cape Town's BMW-Imax Theatre, is a landmark conference on Africa and a significant business networking occasion for the top corporate players active and involved in the development of the African continent – Cape-to-Cairo. AEF-2011 will enable Africa's leading entities, industries, companies and state players to interface with senior executives and African government officials, as well as with countries from outside Africa, and connect with the fast-growing core industries and corporations that are driving Africa's economies forward.

**Municipal Waste Management Forum**

17-18 March 2011  
Vienna, Austria  
[www.flemingeurope.com/energy-conferences](http://www.flemingeurope.com/energy-conferences)

Waste is the result of human activities and everyone needs to have a proper understanding of waste management issues. Governments around the world have become aware that waste management should offer sustainable solutions in a world with growing populations. The Waste Management Forum will provide participants with the opportunity to exchange points of view regarding the latest waste management developments. Those attending will be able to learn how to develop effective waste management plans and make preparations for the future.

**International Conference on Future Environment and Energy 2011**

25-27 March 2011  
Sanya, China  
[www.icfee.org](http://www.icfee.org)

The International Conference on Future Environment and Energy (ICFEE 2011) is an international forum for state-of-the-art research in future environment and energy. ICFEE 2011 will be held in Sanya, China, and is one of the leading international conferences for presenting novel and fundamental advances in the fields of environment and energy. It also serves to foster communication among researchers and practitioners working in a wide variety of scientific areas with a common interest in improving future environment and energy related techniques.



## Water mining: the Great Man-made River, Libya

Libya's USD 22 billion Great Man-made River is one of the world's largest water-supply projects. It involves mining ancient groundwater reservoirs under the Sahara desert and piping it to the coast, where most of the country's 6 million inhabitants live. The first and largest two phases have been operating for over 10 years, three more sections are under construction and future phases will bring total deliveries to 6.6 million m<sup>3</sup> a day.



**W**ater is a valuable commodity and its scarcity is becoming an ever-increasing problem worldwide. In North African countries in particular, water supply is limited, the quality is deteriorating and there is an ever-widening gap between availability and increasing demands. All these factors make it imperative serious action is taken now, both to avoid an impending shortage and also to avoid disputes and international conflicts over trans-boundary water resources. The Libyan authorities were aware from a very early stage of the impending water crisis in Libya and in the North African region generally and decided to implement its own national solution. The Great Man-made River scheme – the first two phases of which were completed in 1991 and 1996

– involves conveying high-quality water from groundwater in the southern basins to coastal regions where the country's main domestic, agricultural and industrial demands need to be met.

Groundwater is the primary source of fresh water, accounting for 96 percent of total Libyan demand. Studies have shown that aquifer replenishment to the coastal aquifers is estimated as 500 million m<sup>3</sup>/year, which is small compared with the ever-increasing rate of consumption – currently 4.7 billion m<sup>3</sup>/year. As a result of excessive abstractions, seawater intrusion has taken place in the coastal aquifers with a marked increase in salinity – reaching over 7,000 parts per million in the Tripoli region. To overcome this deficiency in supply, there has been a concerted effort to develop additional sources of water. The rapid depletion of coastal aquifers and the widening gap between available water resources and the ever-increasing demands constitute a serious water shortage crisis in Libya.

Subsequent investigations have proved the reserves available and defined the limits of a number of

potentially vast aquifers at Kufra, Murzuk and Hamadah. Aquifers with water levels lying at depths of less than 100 metres below ground surface were recharged by tropical rain, 14,000 to 38,000 years ago. Each of these basins contains reserves amounting to 3,000 km<sup>3</sup> of economically extractable fossil water. The aquifers targeted in these basins are mainly the phreatic type with high 'storativity'. Storativity is defined as the amount of water released or added to aquifer storage through a vertical column of aquifer having a unit cross-sectional area, due to a unit amount of decline or increase in average hydraulic head.





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May 20-21, 2011

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*opera*  
in the park  
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# Tel Aviv-Yafo

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