



PART VI
**SUMMARY OF
CASE STUDIES**

INTRODUCTION

A series of case studies was commissioned by UN-Habitat specifically for this Global Report on each of the three threats to urban safety and security addressed in the report (i.e. crime and violence, insecurity of tenure and forced evictions, and natural and human-made disasters). For each of these threats – covered in Parts II, III and IV of the report, respectively – case studies illustrate empirical conditions and trends; as well as effective policy responses. An attempt has been made to ensure adequate coverage of all of the world's geographic regions.

This part contains summaries of 25 of these case studies. The original case studies may be found, in full, at UN-Habitat's website (www.unhabitat.org). Many of the illustrative boxes contained in the different chapters of this report are based on these case studies, while some of the experiences described in the case studies – including related empirical evidence – are also directly integrated within the text of the chapters.

A typical illustrative box in this report uses only a portion of the full case study, so that the 'full story' of the experience on which the box is based may not be apparent to the reader. The summaries contained in this part thus provide the reader with a fuller picture of the experiences described in the illustrative boxes, including the geographical and socio-economic context of the case; the full scope of the experience described; and the main conclusions or lessons from the case.

THE HUMAN SECURITY PERSPECTIVE

Enhancing urban safety and human security in Asia through the United Nations Trust Fund for Human Security

In March 1999, the Government of Japan and the United Nations Secretariat launched the United Nations Trust Fund for Human Security (UNTFHS), from which the Commission on Human Security prepared the *Human Security Now* report in 2003 as a contribution to the United Nations Secretary-General's plea for progress on the goals of 'freedom from want' and 'freedom from fear'. The main objective of the UNTFHS is to advance the operational impact of the human security concept, particularly in countries and regions where the insecurities of people are

most manifest and critical, such as in areas affected by natural and human-made disasters.

Growing inequalities between the rich and the poor, as well as social, economic and political exclusion of large sectors of society, make the security paradigm increasingly complex. Human security has broadened to include such conditions as freedom from poverty and access to work, education and health. This, in turn, has necessitated a change in perspective, from state-centred security to people-centred security. To ensure human security as well as state security, particularly in conflict and post-conflict areas where institutions are often fragile and unstable, rebuilding communities becomes an absolute priority to promote peace and reconciliation.

With the rapid urbanization of the world's population, human security as protecting 'the vital core of all human lives in ways that enhance human freedoms and human fulfilment' increasingly means providing the conditions of livelihood and dignity in urban areas. Living conditions are crucial for human security since an inadequate dwelling, insecurity of tenure and insufficient access to basic services all have a strong negative impact on the lives of the urban population, particularly the urban poor. Spatial discrimination and social exclusion limit or undermine the rights to the city and to citizenship.

In this context, UN-Habitat is coordinating three UNTFHS programmes in Afghanistan, northeast Sri Lanka and Phnom Penh, the capital city of Cambodia, all focusing on informal settlements upgrading. On the assumption that community empowerment is crucial for reconstructing war-affected societies, all programmes have adopted the community action planning method – a community-based consultative planning process – and have established community development councils as the most effective approach to improving living conditions and human security in informal settlements.

■ Upgrading informal settlements in three cities in Afghanistan

The programme's main objective is to improve the urban environment in informal settlements by:

- providing security of tenure and adequate access to basic infrastructure; and
- empowering the communities to directly implement specific projects and to negotiate with central and municipal agencies.

Since its inception in 2005, the programme has been implemented in 48 settlements in Mazar-e-Sharif (Balkh Province) to the north, Jalalabad (Nangarhar Province) to the east and Kandahar to the south, with an average of three projects per settlement. Local projects are carried out with the direct involvement of community development councils and through the community action planning approach.

The programme addresses the issue of human security by improving the conditions of the urban environment, empowering local communities and fostering local economic development.

■ Rebuilding communities in northeast Sri Lanka

The programme aims to restore the human dignity of the urban poor through community empowerment and the provision of basic infrastructure. It was launched in the aftermath of the peace agreements with the Liberation Tamil Tigers (ELT); but its implementation took place after the conflict had resumed. The programme seeks to empower poor communities in improving their living environment through community development councils and their integration within the urban context, following the destruction of the physical and socio-economic fabric from both conflict and the 2004 Indian Ocean Tsunami. The programme has supported a range of physical improvements and social projects, including savings-and-loan operations, drainage and road paving, community centres, public markets, libraries and children's playgrounds. The programme is being implemented in ten settlements in the north-eastern cities of Jaffna, Kilinochchi, Batticaloa and Kattankudy, all conflict- and natural disaster-affected areas largely excluded from government interventions and post-tsunami international aid.

■ Partnership for Urban Poverty Reduction in Phnom Penh, Cambodia

The Partnership for Urban Poverty Reduction was set up to strengthen the self-confidence, enhance the competence and raise the dignity of communities living in the slum and squatter settlements of Phnom Penh by reducing their vulnerability, poverty and social exclusion. A Community Human Security Fund helps the communities to implement a community action plan based on their own priorities. Most projects focus on community-based infrastructure, such as concrete lanes, drainage and footbridges, primarily benefiting the women and children of more than 30,000 families, or approximately 150,000 slum dwellers.

Lessons learned

The contribution to human security, and the dignity upon which this concept is based, in Afghanistan, northeast Sri Lanka and Phnom Penh provided by UNTFHS is grounded primarily on:

- addressing the different aspects of vulnerability in war-affected areas through a multi-sectoral approach and;
- a seamless transition from a protection-centred to an empowerment-centred perspective, through community organization.

CRIME AND VIOLENCE

Effective crime prevention strategies and engagement with the planning process in Bradford, UK

Bradford is a city in northern England that is part of the West Yorkshire conurbation. Its population is just over 475,000 and since World War II it has been characterized by a high rate of inward migration (by UK comparative standards) from the Indian subcontinent and particularly from Pakistan. Just over 20 per cent of the population declared their religion as Muslim, Sikh or Hindu at the 2001 census, with Muslims making up just fewer than 90 per cent of this group.

These characteristics make Bradford one of the UK's most ethnically diverse cities, and this is important in shaping how it approaches issues of crime and violence, especially since major riots in July 2001, which saw significant confrontations between Muslim youths and the police, resulting in considerable property damage and approximately 300 people injured.

As far as the experience of crime is concerned, the evidence appears to suggest that Bradford has seen some improvements during recent years, although in an absolute sense the city's crime rate of about 150 recorded crimes per 1000 people in 2003/2004 would still be regarded as being quite high in many parts of the world. The city's crime audit for 2004 estimated that overall crime levels had fallen by around 16 per cent between 2001/2002 and 2003/2004, once account has been taken of a nationally driven change in the way that crimes were recorded by the police. The city's crime figures suggest that crime rates in Bradford are slightly higher than the average for England and Wales; but they are lower than for most of the other large cities in England outside London when calculated as rates per 1000 people, where the average was approximately 170 recorded crimes per 1000 people.

The trends in relation to the main types of crime between 2001/2002 and 2003/2004 were as follows:

- Domestic burglary fell by 28 per cent. The figure for 2004/2005 was just over 8 per 1000 people.
- Vehicle crime (both theft of vehicles and theft from vehicles) fell by just under 25 per cent. The figure for 2004/2005 was just under 19 per 1000 people.
- Robbery fell by 42 per cent. The figure for 2004/2005 was just under 1 per 1000 people.
- Violent crime apparently increased by 133 per cent, although this figure needs to be treated with caution. It is likely that the true rise in violent crime is very much smaller than this bare statistic would suggest, although it does seem that crimes of violence are on the increase. During 2004/2005 there were 23 incidents of violence and just over 1 of sexual offences per 1000 individuals.

Hate crime (consisting of racial and homophobic crime and domestic abuse) also appears to be increasing, although this is mainly because reported incidents of domestic abuse (which make up 90 per cent of recorded hate crimes) rose by 29 per cent.

Bradford has a partnership approach for addressing issues of crime and violence that follows the model established by the 1998 Crime and Disorder Act, and which appears to have been able to put in place a strategy and a series of action plans that have contributed to the fall in crime. The current strategic priorities for this strategy, which is rolled forward every three years, are visible responses both to environmental quality issues and to the provision in communities of a uniformed presence, support for vulnerable people, the prevention of crime and law enforcement. This is also closely related to the overall community strategy for the city, in which securing public safety for a multicultural community is a major issue.

In addition, Bradford has also taken the British idea of getting the planning system to address crime prevention quite a long way, with a clear policy statement in a recently approved development plan, a commitment to the further development of this thinking in the preparation of more detailed guidance, a history of effective work by the police architectural liaison service, and some solid achievements on the ground (see Box 4.6).

All of these things make Bradford an interesting case of effective crime prevention strategies and of engagement with the planning process. At the same time, this case also demonstrates some of the difficulties involved in going down these roads, since this has by no means always been a smooth journey. In particular, there is still a distance to go before a consensus could be said to have been reached within the city's planning and development community about what constitutes good practice in this field. As a consequence, the case is useful not just as a demonstration of a highly structured approach to tackling crime and violence, but also as an illustration of some of the issues that arise from such an approach.

Effective crime prevention in Durban, South Africa

South Africa experienced soaring crime levels during the last years of apartheid, which continue unabated into the ten years of democracy. Crime in Durban, the largest city in the KwaZulu-Natal Province, increased by 13 per cent between 2001 and 2005, with more than 190,000 cases of crime between 2004 and 2005. Crime statistics from the South African Police Services Information Analysis Centre show that burglary at residential premises, other forms of theft, common assault, robbery with aggravating circumstances, assault with the intent to inflict grievous bodily harm, and theft out of or from motor vehicles are among the leading forms of crime, constituting 60 per cent, 18 per cent, 9 per cent, 8 per cent, 6 per cent and 5.9 per cent, respectively, of the total crime. While total crime, in general, has increased in Durban, there have been noticeable decreases in particular forms of crime, such as theft of motor vehicles and motorcycles, burglary at business premises and arson, which have reduced by 10 per cent, 2 per cent, 1.5 per cent and 1 per cent, respectively, between 2001 and 2005. On the obverse, sharp increases in crimes such as burglary at residential areas, common robbery and drug-related crimes have increased by 47 per cent, 4 per

cent and 2 per cent, respectively, contributing to increased crime in Durban.

As a response, city officials have forged development negotiations, peace pacts and partnerships as mechanisms to prevent crime in Durban. These efforts are an attempt to strengthen community-based involvement in the development process of the new South Africa, a notion that aligns well with the concept of participatory democracy. Key issues in Durban are centred around creating and carrying out partnership processes, the problems (and value) of incorporating the informal sector within crime prevention efforts, targeting programmes for vulnerable groups, and crafting effective social and environmental design initiatives.

The Safer Cities Steering Committee, consisting of city councillors, public officials and South African Police Services and Business against Crime members, was established to guide project development. A research advisory group was established to advise on research, information-gathering, analysis and best practices, mainly in the area of 'social' crime prevention, focusing on violence against women, victim support, youth development and understanding the causes of violence. While most of these initiatives are still in their infancy, results prove to be positive. In 2003, the new Ethekwini Municipality Safety and Crime Prevention Strategy was developed and adopted by council as part of a five-year strategic plan of action. The Durban Safer Cities Strategy brings different role-players together in a prevention partnership. Three pillars of the strategy include:

- effective policing and crime prevention;
- targeted 'social' crime prevention; and
- crime prevention through environmental design.

These initiatives also include:

- community police forums;
- business against crime partnerships;
- education, including a strategy on school safety;
- extensive inner-city CCTV networks monitored by municipal police;
- Durban suburban crime prevention strategies; and
- use of women's safety audits.

While these initiatives have not eradicated crime, they have, to a greater extent, contained it. Clearly, the challenges are overwhelming and, to have any impact at all, there is a strong need to coordinate exceedingly well and to build strong alliances across society. This should include strong links with relevant government departments, business, media, civil society (including churches), traditional leaders and healers, as well as communities.

Several lessons have emerged from Durban's experience, the most notable of which include the following:

- There is still a lack of coordination between government departments on safety and security. Consequently, developing mechanisms for coordinated action is a necessary step if crime and violence prevention programmes are to be implemented effectively.

- The effective implementation of crime prevention programmes is necessary if confidence in public authorities is to be achieved and maintained.
- Despite government's commitment to prioritize crime, there are still no timeframes or performance indicators in place to monitor service delivery. Measurement of performance is crucial in programme delivery and evaluation.
- The importance of directly involving the business community in crime prevention and reduction programmes, such as the Business against Crime initiative, is clear. This initiative has created an alliance with various business sectors in the Durban area so that their different safety needs can be identified and presented to the South African Police Services and the Durban City Police.
- It is important to harness the strong points and value of the informal sector and unemployed youths as part of local crime prevention efforts, such as the Traders against Crime and youth car guards initiatives. The Traders against Crime initiative has been quite successful: traders and street vendors know their areas very well and, as such, can easily spot criminal elements and criminal activity and report these to the relevant authorities.
- It is important to target vulnerable groups, such as women and children, in crime and violence prevention programmes.
- Women safety audits for the purpose of obtaining first-hand knowledge about crime and violence are also important: such knowledge affects specific groups.
- While the problems of crime in transitional or emerging democracies are significant, they can be tackled by concerted public and private initiatives.

Crime and violence in Hong Kong, China

Hong Kong has become one of the world's safest metropolises. Compared to other cities, Hong Kong's crime rate is very low, especially for offences such as burglary, car theft and robbery, as well as offences notable for their sensitivity to environmental and situational determinants. This low rate of crime is supported by the results of the periodic crime victimization surveys undertaken by both the government and the United Nations. Hong Kong's anti-crime efforts and support of law enforcement are reflected in the relatively high incarceration rate (176.8 per 100,000 individuals in 2005) and a large police service (486.6 police per 100,000 individuals in 2000). The police force has long been equipped with extensive 'stop and search' powers since the colonial period. An average of 10 per cent of public expenditure is devoted to security.

Hong Kong has not always been safe and suffered several civil disturbances during the 1950s and 1960s, and crime rates for homicide and robbery were not particularly low compared to other countries in the same period. Indeed, Hong Kong's crime rates continued to rise throughout the 1960s and 1970s as the colony underwent rapid modernization and the proportion of the youthful population surged.

Positive attitudes to the reporting of crime have been associated with the demise of the symbiosis between organized crime (triads) and elements of the police, following special anti-corruption measures. This also contributed to increases in the *reported* crime rate during this period. Crime rates, however, reached a plateau during the 1980s and thereafter have generally declined.

The labour- and Cultural Revolution-inspired disturbances of the 1950s and 1960s initiated social welfare responses from the British colonial government, which hitherto had long upheld a 'minimal state doctrine' and unfettered 'free trade'. The 1970s marked the start of genuine localization and transformation of the Hong Kong Police from an alien force that served British colonial hegemony to one that served the Hong Kong community. After the transfer of sovereignty to the People's Republic of China in 1997, the Hong Kong Police operated in the context of the 'one country, two systems' arrangements for the new Hong Kong Special Administrative Region of the People's Republic of China (see Box 4.8 for details).

Cultural factors such as utilitarian familism, Confucianism and extended kinship structures are often cited as contributing factors to the low crime rates in Hong Kong. The pervasive family-oriented traditions of the Chinese and public attitudes favour a government hostile to crime and corruption and are generally supportive of severe punishment to adult offenders. Familism also amplifies the shaming effect of offending because it is shared by the entire family. Confucianism also privileges order over individual rights and thus promotes *communitarianism*, where the emphasis is on collective interests.

Although the death penalty was abolished in 1992, Hong Kong had been a *de facto* abolitionist jurisdiction since the 1960s. Nevertheless, many offences, such as firearm-related offences, often result in lengthy sentences when compared to sentences given in Western countries. Furthermore, strict gun laws have effectively reduced firearm robbery to fewer than five events per year, and not a single incident of domestic violence was perpetuated with a firearm during the past five years.

The overall reduction in official crime matched the declining population group aged 15 to 29 – the age group that usually accounts for the majority of the crime committed. The proportion of the 15 to 29 age group decreased by 15 per cent in 2005, while overall crime and violent crime decreased by 25 per cent and 43.1 per cent, respectively.

The densely populated nature of urban high-rise living in Hong Kong also provides higher levels of natural or informal surveillance by facilitating the presence of capable guardians and reduces the opportunity for crime. The availability of attractive wealthy targets within the city has a limited stimulus on crime opportunity due to the large numbers of private security officers employed (1872 per 100,000 individuals). In addition, advanced crime prevention technologies, including CCTV, are installed in public housing, public recreational areas and crime hotspots, and these serve to reduce a potential offender's willingness to commit crime.

Various measures that attempted to bring the public and state together in fighting crime have been successfully

implemented since the late 1960s. The continual localization and professionalization of the Hong Kong police also overcame the challenge caused by the rising proportion of at-risk youths during the 1970s and the cross-border crime wave that struck during the late 1980s and early 1990s.

Hong Kong's service-oriented policing, however, faces new challenges. The challenges are not only about the threat of transnational crime and traditional crime and its evolution in cyberspace, but about the demand for proactive action on domestic violence – where the would-be guardians may be the perpetrators. This requires balancing the role of state intervention in family disputes with heightened respect for civil rights, while at the same time ensuring that social services and police collaborate. However, with an increasingly ageing population, more attention will be needed to curb the growing incidence of crime against the elderly.

The low crime rate observed in Hong Kong is a result of a complicated mixture of cultural traditions, proactive crime prevention and the emergence of a legitimate 'consensus' style of law enforcement. Thus, family-oriented Confucianist values, a large professionalized and localized police force that focuses on a client-services approach, strict gun laws, successful cooperative suppression of cross-border crime, high levels of formal or informal supervision, proactive efforts against organized crime and corruption, and severe punishment for the convicted all serve to reduce opportunity for crime.

Trends in crime and violence in Kingston, Jamaica

Kingston is the capital of Jamaica, with a geographic coverage of 430.7 square kilometres. The 1991 population census showed that 538,000 persons lived in the Kingston Metropolitan Area (KMA), and in 2001 that number had increased to 651,880. At the end of 2005, Jamaica's population stood at 2,660,700. In other words, the KMA accounted for 21.52 per cent of the population in 1991, compared to 24.5 per cent in 2001, which represents a population growth rate for the KMA of 2.3 per cent – more than four times higher than the overall population growth rate for Jamaica. The KMA has limited access to land, leading to environmental problems such as squatting and the unsustainable use of natural resources. There are considerable strains on the environment resulting from rapid population growth, inadequate housing, waste management and improper drainage in some areas.

The KMA is characterized by many inner-city communities and informal settlements with predominantly high unemployment levels, inadequate infrastructure and social services, proliferation of gang violence, and drug use and trafficking, as well as poverty. The greater KMA remains the most criminally active and dangerous area in Jamaica. It experiences various forms of violent crimes, such as murder, assaults, shootings and robberies. Kingston has the highest rate of murder of the three major urban areas in Jamaica.

Over the past three decades there has been a general increase in murders in Jamaica. In 1970, the country's homicide rate was 8.1 per 100,000 individuals. By 2002, it

had increased to 40 per 100,000, and by 2005, it had risen to 64 per 100,000, making Jamaica one of the countries with the highest murder rates in the world. Between 1998 and 2005, the Jamaican police reported 8993 murders – approximately 76 per cent of these murders occurred in the KMA.

In view of the escalating levels of crime and its destabilizing impacts, the Government of Jamaica has initiated several social programmes at the national, parish and community levels in partnership with several international agencies such as the IDB, the Canadian International Development Agency, DFID, USAID, the EU and the World Bank.

Utilizing a collaborative approach, the Jamaican government, in conjunction with several international and local partners, has developed various initiatives and programmes to address the policy-making process, social problems and crime and violence in the country. A multilevel approach has been employed by the Ministry of National Security involving police crime-fighting initiatives and numerous community safety and security programmes that operate mainly in Kingston. At the national level, *Operation Kingfish* was launched in 2004 as a major anti-crime initiative. With the assistance of international partners, *Operation Kingfish* has been successful in its mandate of dismantling gangs within the Kingston corporate area and has recovered numerous firearms and ammunition and equipment used in drug trafficking.

At the community level, two success stories particularly stand out. These are Fletcher's Land and Grants Pen, where social intervention programmes include initiatives such as remedial education, mentoring programmes, identifying job and skills training, dispute resolution, homework programmes, continuing education services and parenting workshops. These initiatives have brought about some short-term success. For instance, the community of Grants Pen had not recorded a single murder during 2006 until the point when this case study was drafted, whereas previously it had been regarded as one of the most volatile communities in Kingston.

One of the key lessons from crime fighting and crime prevention initiatives in Kingston is that the people should be the key focus of such initiatives. Furthermore, a collaborative approach with international agencies, government institutions and non-governmental organizations (NGOs) can prove effective in reducing crime and violence. While it should be noted that Kingston's programmes cannot be applied, as a whole, to all other urban areas since these programmes have not been assessed, the approach used can be duplicated by other urban areas by using the following principles:

- Use crime prevention approaches that operate at the grassroots level, where the common citizen can see, feel and react to issues. Generally, Jamaica had success at the tactical and conceptual levels, but it was not much felt by the citizenry.
- Utilize a prescriptive approach rather than a reactive approach, which fails to attack the root of the problem. Community needs must be assessed through consulta-

- tions with key stakeholders and solutions must be determined with inputs from the relevant stakeholders.
- Engage the community in all levels of planning and development to ensure the successful implementation of policing strategies and social intervention programmes/initiatives. Communities must buy into the process and be recognized as partners in maintaining their own security.
 - Invest in human capital. The outcomes of many social interventions programmes indicate that investing in the individual bears greater results than investing in structures. Evaluating investment in people might be difficult; however, it serves to reinforce the work of social intervention programmes in countries that face economic and social challenges such as Jamaica.

Crime and violence trends in Nairobi, Kenya

Over the last two decades, violent crimes such as armed robbery, murder, mugging, car jacking, housebreaking, physical and sexual assault and other forms of violent crime have been on the increase in Nairobi. Other forms of offences include commercial and property crimes such as burglaries. Firearms trafficking – a consequence of civil wars in neighbouring countries – is a major contributor to crime and violence in Nairobi.

Criminal youth gangs are increasingly becoming a growing phenomenon in Nairobi. The largest proportion of crime in Kenya is committed by youths, and over 50 per cent of convicted prisoners in the country are aged between 16 and 25 years. This makes it imperative to address youth crime as a special focus of crime prevention strategy. Two groups have been identified for illustrative purposes in this respect. These are the *Mungiki* movement and youth who live and work on the streets (see Box 3.5). While these groups are not necessarily criminal in all their interactions with the broader society, their association with crime, both real and perceived, is such that they warrant special attention.

The *Mungiki* movement, with membership said to range between 200,000 and 2 million, is one of the most significant youth groups in Kenya in terms of its propensity for extreme violence and the potential for developing into a highly disruptive force in society. The group came into the limelight during the late 1990s, when media reports highlighted groups of youths donning dreadlocks, taking unusual oaths and engaging in traditional prayers that involved the sniffing of snuff. *Mungiki* then posed as a traditional religious group interested in reintroducing and promoting the traditional way of life among the Kikuyu people. The group unmistakably drew its inspiration from the Mau-Mau movement of Kenya's struggle for independence from Britain during the 1950s. With time, it has transformed itself into probably the most organized and feared criminal group, with deep anti-establishment characteristics.

In order to put the violence unleashed by the movement in proper perspective, a few examples are provided:

- In March 2002, *Mungiki* was implicated in the massacre of 23 people in Kariobangi (Nairobi) and were also involved in stripping women wearing mini-skirts and trousers naked.
- In January 2003, the movement was linked to the death of 23 people in the outskirts of Nakuru.
- Thereafter, in April 2003, over 50 armed *Mungiki* members allegedly attacked a *matatu* (minibuses) crew in Kayole estate in Nairobi and killed five people in the same area.
- In November 2006, there was a resurgence of *Mungiki* violence in the Mathare slums of Nairobi. This resulted in several deaths and scores of injuries, the displacement of many people, the wanton destruction of property and the disruption of livelihoods.

The violent confrontations of November 2006 were a good pointer to *Mungiki's* transformation into an organized crime group with considerably deep roots in its areas of operation.

The feeling that the movement is, in part, motivated by economic gain is rife. While accurate information of the economic activities of the movement are not available, owing to its covert nature, several indicators point to the movement being engaged in lucrative 'business' activities. Among these activities are the forceful management of *matatu* stages, levying illegal taxes and extorting protection money from large sections of Nairobi's informal settlements. Working in a tight, disciplined manner, *Mungiki* has taken over the provision of security, water and electricity in various slums in Nairobi. By 'taxing' residents of informal settlements, 'providing security', presiding over kangaroo courts and meting out their own form of justice, *Mungiki* has, in effect, been functioning as a parallel government at the local level.

In addition to the *Mungiki* movement, the growing population living and working in the streets of Nairobi and other Kenyan urban areas is a matter of major security and general development concern for the affected areas (see Box 3.2). Over the years, the number of street children has been on the rise. There were approximately 115 street children in 1975. By 1990, this had grown to 17,000. In 2001, the number of street children countrywide was estimated to be 250,000. With older street dwellers included, the total number increases to 300,000. The bulk of such street dwellers are found in Nairobi, which, at present, has a conservative estimate of 60,000 street people.

The issue of street families as an important factor in the city's security is both real and perceived. It is real in that street families are involved in criminal activities, which include drug peddling and prostitution, as well as theft of mobile phones, vehicle lights and side mirrors, and other valuables from pedestrians and motorists. Older street persons are also known to be involved in more serious crime, such as muggings and rape. Consequently, the public generally perceives street persons as criminals, thieves, drug addicts and eyesores who should be removed from the streets.

In an effort to address the challenge posed by street people and the pressure from city residents for the govern-

ment to act regarding this challenge, the Kenya government established the Street Families Rehabilitation Trust Fund. The trust's mandate is to coordinate rehabilitation activities for street families in Kenya, educate the public, mobilize resources and manage a fund to support rehabilitation activities, among other functions.

The fund has made important progress in its mandate during the period of its existence. Among its key achievements are:

- spearheading the establishment of affiliate committees in major towns to oversee local activities of the rehabilitation of street people;
- overseeing capacity-building initiatives among service providers in providing basic psycho-social rehabilitation services;
- facilitating entry into school for rehabilitated street children; and
- facilitating the provision of vocational training for rehabilitated street youth.

Although an important headway has been made in the period of the fund's existence, there is still plenty of work to be done before proper mechanisms for managing the challenge of street people can be put in place.

Effective crime prevention in New York, US

New York City, following a national trend, has had declining crime rates for 30 years. Midtown Manhattan, once a popular entertainment district in the city, started a period of decline during the late 1960s that led to neglect, abandonment and increased criminal activity. Successive city administrations implemented policies to improve law enforcement with good results; but other aspects needed to be addressed, as well. During the 1980s, private non-profit groups decided to get involved and a period of redevelopment, restoration and revitalization was initiated. Bryant Park was one of the catalysts for this process.

The redevelopment of Bryant Park was entrusted to a non-profit group formed especially to restore, maintain and manage the park. The city, private sponsors and businesses in the area formed a partnership, providing channels for public input regarding redesign and redevelopment. Certain areas within the park had been appropriated by criminals. Most tourists, business people working in the area and patrons of the adjacent library, particularly women, avoided the park. The park's design detached it from its surroundings with the intention of providing a place of respite from the urban chaos; however, this isolation turned it into the perfect hiding place for derelicts.

Several public-private partnerships were established during the 1980s to aid in revitalization efforts. Some groups opposed these management agreements even though local government retained its authority over the public areas. Despite these concerns, these partnerships proved effective in not only restoring public areas, but also in maintaining order and, thus, working in the public interest to increase security for everyone. Using a Business Improvement

District Strategy whereby commercial property owners imposed a surtax on themselves to pay for such things as security and physical improvements, two public-private coalitions supported the regeneration of the park over a sustained period of time. The effort included a redesign of the many physical elements of the park that were thought to have contributed to its demise as a public place. This included natural and built surveillance obstacles, pathways, obstructed entrances and the generally enclosed nature of the site that cut it off from the surrounding city. This effort was also supported by New York mayors and by the police, who had made it a policy to reclaim public space for public use.

Even though Bryant Park had been an important public place in the city for more than 100 years, its periods of decline had prevented citizens from enjoying it and had allowed part of the public realm to become a breeding ground for criminal activities. Today, the park is a desirable destination; it has also become self-sufficient since it is the only park in the city that does not receive any public funding. The existence of public spaces such as the restored Bryant Park confirms that even large and dense urban places such as New York City can offer their citizens the opportunity to enjoy public spaces. These opportunities are part of what makes cities sustainable in the long term.

Bryant Park is, indeed, a success story. Reclaiming a public space that had been hijacked by drug pushers and users and making it accessible to thousands of people on a daily basis is a considerable achievement. The decline in crime afforded by the restoration of Bryant Park is undeniable and is verified by police data and citizen reports. Evidence suggests that city administrators would not have been able to accomplish this feat on their own. By most accounts, the participation of private businesses and citizens made it all possible. Public-private partnerships proved efficient and effective in restoring and managing not only Bryant Park, but several public spaces in New York and elsewhere.

The spatial changes in the park have made it welcoming to any citizen or visitor passing by. The homeless continue to be welcome as long as they abide by park regulations and behave in a manner that is acceptable to the majority of the people benefiting from the public space. In terms of physical and design-induced changes, Bryant Park also serves as a model. Inspired by William H. Whyte's philosophy of urban space and his understanding of how social behaviour is influenced by it, the park's design proves that simple elements can be used to great effect.

A combination of physical changes and increased law enforcement can be credited with Bryant Park's rebirth. An important lesson to be learned is that a better understanding of all the issues that factor into making not only public space, but entire cities, safe, comfortable and desirable is needed. When people are willing to be creative, tolerant and innovative, institutional and economic barriers can be surpassed.

The Bryant Park experience also shows that sustained efforts are necessary. Restoration projects that only address one aspect of the myriad of problems usually comprising degraded areas do not yield the same benefits. The physical

environment is an important component of any redevelopment project; but urban design can only create the enabling environment for a successful public space. Other initiatives that ensure economic vitality, absence of crime, continued sources of revenue, and close attention to maintenance and management are indispensable. Only by combining design ingenuity with other continuous efforts can a public space be created and sustained.

Crime and violence trends in Port Moresby, Papua New Guinea

Port Moresby is the capital city of Papua New Guinea – the biggest developing country in the Pacific region. The city is infamously known for its high crime rate. The escalating high levels of rape, robbery and murder have earned Port Moresby the dubious distinction of being the worst city in which to live in the world by the *Economist* magazine for 2002 and 2005.

The main types of crimes committed in Port Moresby, in order of frequency, are burglary, petty crime, assault, car jacking, drug dealing, property crimes, rape, violence and vandalism. About 48 per cent of crimes in Port Moresby involve a high level of violence, compared to other cities in Papua New Guinea where violence is used in 25 to 30 per cent of crimes. The use of violence in crime creates a feeling of fear among the population. Nearly one quarter of crimes committed involve the use of weapons such as guns, knives, swords or blades. Young people are the main perpetrators of crime, as most of the first offences and the relatively serious offences are committed by young males between the ages of 15 and 20. The most common type of first offence is petty crime (which includes theft, pick pocketing, shoplifting and bag snatching). The widespread substance abuse, especially among the youth, often contributes to increased levels of criminal activities and street brawls.

Apart from the types of crime noted above, domestic violence, particularly against women, is endemic. Gang rape and assault on women are rapidly increasing. However, most communities and households view violence against women as a private matter and therefore very few victims report them. Consequently, very few cases are prosecuted even though domestic violence is regarded as a crime in Papua New Guinea. Even when victims of domestic violence report such assault to relatives, it is usually frowned upon and the victim does not receive any sympathy.

The impact of crime and violence on Port Moresby affects the whole of Papua New Guinea. The surge in crime causes residents to feel very unsafe: entire suburbs in the city are known to be unsafe and even the police are reluctant to respond to calls for help. The cost of crime to the nation in terms of its impact on tourism, cost of security and health services is enormous.

The causes of escalating levels of crime in Port Moresby are many and varied. But there seems to be a general agreement that crime and violence in Papua New Guinea are caused by five main factors – namely, a general lack of economic opportunities; the drive to acquire material wealth; the inability of law enforcement institutions to

address criminal behaviour in the city effectively; a general decline of traditional cultural practices that assist with conflict resolutions and the maintenance of law and order; and the abuse of the *wantok* system and the impact of urbanization – *wantok* literally means ‘people who speak your language’.

It is estimated that the formal sector provides fewer than 10 per cent of jobs in the country. In addition, Papua New Guinea as a country has adopted the laws and regulations of the State of Queensland (Australia) – its colonial power. The supplanting of laws and regulations that are much suited to developed economies has made it impossible for the informal sector to develop effectively. The strict enforcement of regulations relating to public health, building codes and taxation have stifled the growth and expansion of the informal sector.

Migration to Port Moresby and internal urban growth have contributed to the growth and expansion of squatter settlements; yet, the relevant authorities have failed to give due recognition to squatter settlements in the city and provide basic services and support to enable the migrants to integrate within the city. This has, in part, given rise to discontent and resentment of authority, and the flourishing of organized gang activity, which provides support and ‘employment’ opportunities for many migrants in the city.

The declining use of conflict resolution mechanisms in urban areas compels individuals to use their *wantoks* to resolve disputes. It is not uncommon to hear *wantoks* using community justice (a payback system). Abuse of the *wantok* system has created an environment that breeds ethnic tensions, especially within the squatter settlements, and often results in increased violence.

Law enforcement and the criminal justice institutions are largely unable to cope with the level of criminal activities in the city due to lack of equipment and poor training, which contribute to them being considered unprofessional and incapable of stemming the tide of criminal activities in the city.

The complexity of the causes and types of crime shows that policies and programmes aimed at addressing crime and violence in Port Moresby should foster a strong partnership between the government, NGOs and the community. The international community also has a key role to play in providing better training and equipment, and in supporting partnership approaches. In addition, there is the need to systematically approach crime reduction and prevention from a holistic framework with maximum support from the grassroots level. The challenge facing the city with regard to dealing with crime and criminal behaviour is enormous; but it is not insurmountable. It requires strong commitment and collective determination to tackle the problem and to instil confidence among residents, investors and tourists alike.

Crime and violence trends in Rio de Janeiro, Brazil

The city of Rio de Janeiro, Brazil’s former capital between 1688 and 1960 and second major city, exhibited a remark-

able increase in crime rates from 1980 onwards, despite decreases in population growth of 2 per cent in 1980 and 0.4 per cent in 2000. While there were some improvements in urban infrastructure in some of the poorest areas of the city – the shantytowns – these continued to grow at a rate of 2.4 per cent in 2000. Then, the city had 5,857,904 inhabitants, of which 1,094,922 lived in subnormal urban agglomerations, an official definition for the popular term *favelas*, where a heterogeneous, but mainly poor, population resides. This has been a common scenario in major Brazilian cities since the early years of the 20th century due to accelerated and chaotic urbanization, or urbanization without industrialization or sufficient economic development to provide employment for the migrants.

Rio de Janeiro's homicide rate tripled from 20.5 per 100,000 individuals in 1982 to 61.2 per 100,000 in 1989, when it reached its peak, following the expansion of cocaine trafficking and use. From then on, it has been around 50 per 100,000 individuals, with the lowest rate in 2001 being 45.3 per 100,000, but up again in 2002. While homicide rates for young men aged 14 to 25 escalated from 30 per 100,000 in 1980 to 54.5 per 100,000 in 2002, the rate among older men remained stable, from 21.3 per 100,000 to 21.7 per 100,000 during the same period. Nationwide, 90 per cent or more of murder cases involve males, while 10 per cent or less relate to women.

Violent crimes, particularly homicides, are more common in *favelas* and distant poor districts. This corresponds to differences in inequality within the city, and the lack of social and state control, especially policing, in the more distant areas. It is, however, difficult to compare official rates of homicides in different districts or *favelas* of Rio de Janeiro because the lack of property rights translates into the lack of addresses. Fearing being discriminated against as *favelados*, people give non-existing addresses or addresses in adjacent districts. Moreover, since police repression is stronger against *favelados*, bodies are dumped in neighbouring districts, thereby increasing their homicide rates remarkably. Murder rates in Rio de Janeiro often vary with socio-economic and racial characteristics. For instance, blacks, low-income households and less educated people have a greater proportion of relatives, friends and neighbours killed.

Vulnerability, especially for young men who have the highest unemployment rates, growth of the informal sector and irregular dwellings do not fully account for the growth of homicides during the 1980s and 1990s. New forms of criminal business affected informal markets, transforming them into gateways not only for selling stolen, smuggled or counterfeit goods, but also for trafficking illegal drugs. This increased the number of murders in so far as the illegality of the drug business made the use of guns inevitable. During the 1980s, trafficking gangs started to dominate some *favelas*, and traffickers expanded their operations. As armed mobs appeared, death squads or militias were formed in order to eliminate those identified as bandits.

Although the proportion of people who have handguns is small in Brazilian cities, criminal groups defy the rule of law because guns can be easily obtained. Drug gangs

have transient skirmishes to dispute the territory where their markets are located. As a result of the ensuing military local control, the drug lords restrict the movements of dwellers and governmental agents.

Possession of guns follows the dynamics of small networks of peers. Youths display firearms to gain the respect and admiration of their peers and to avoid being victimized by those who carry them. Using guns is a learned behaviour. Where there is a high concentration of handguns, youths believe that they will have military, juridical and personal protection inside the gangs, where they learn to be ruthless and to kill.

Policing with a focus on the control of illegal gun use could diminish homicide rates. But the foci of prevention policies are improved schooling, providing stipends to augment family income, and sponsoring sport and cultural programmes. The idea behind the latter programmes is that the symbolic dimensions of belonging and identity are more important to youths than income. Yet, these social programmes remain fragmented and low scale. Their main impacts on youths who become involved with them are to increase personal health and grooming, to increase paternal responsibility, to increase dialogue within the family and to increase pride in those who are working hard to make progress.

Multi-age neighbourhood projects should be encouraged as much as the new projects that develop global identities related to hip hop and funk music. Traditional forms of community association, such as Schools of Samba, Carnival Blocs and soccer teams have always fulfilled a socializing function. Since trauma resulting from violence is collective, mobilizing families and different generations will be more successful.

But cultural projects will thrive if there are public policies creating more jobs and employment for youths, and reducing access to guns with gun-oriented patrolling. New prevention strategies should link police and neighbourhoods, including those inside *favelas*, based on respect for civil rights.

Effective crime prevention in Toronto, Canada

Toronto, with a population of 2.7 million people, is Canada's largest city. It lies on the north-western shore of Lake Ontario, the easternmost of the Great Lakes. One of the most ethnically diverse cities in the world, Toronto is home to people from over 200 nations who speak more than 100 languages and dialects. It is also one of Canada's primary immigrant reception centres, welcoming nearly 70,000 newcomers each year. The resulting cultural diversity is reflected in the numerous ethnic neighbourhoods and enclaves in the city.

Although Toronto is a relatively safe city, it is facing challenges with crime and violence in some neighbourhoods and among some segments of the population. For example, while the overall risk of homicide victimization in Toronto has been relatively stable over the last decade, the city has become more dangerous for some people and less so for

others. Over this period, female victimization rates decreased, while male rates increased slightly, and the average age of homicide victims declined. Toronto's black population has faced much higher rates of homicide victimization than non-blacks since at least the early 1990s. Just as there is evidence indicating that the risk of homicide and other serious violence in Toronto is unequally distributed across social groups, there is also some evidence to suggest that incidents of serious violent crime tend to cluster in particular neighbourhoods.

The changing nature of who is at risk of homicide victimization and the contexts in which this violence tends to occur have guided the development of a host of crime prevention and violence reduction policies in Toronto over the past several years (see Box 4.7 for details).

For example, in early 2004, the City of Toronto established its Community Safety Plan (CSP), a toolbox of crime prevention initiatives designed to improve public safety in those neighbourhoods where violent crime is thought to cluster. The CSP emphasizes collaborative efforts that work across authority and agency boundaries with respect to the development and evaluation of social policy. The CSP is based on a strategic model that rests on the twin pillars of crime prevention through social development and CPTED. While recognizing the central role that policing plays in the control of crime, the CSP also argues that in order to be successful, enforcement-based strategies must be balanced with preventative approaches that address the root causes of crime and violence.

Among the more prominent policy developments have been the introduction of spatially targeted or area-based interventions aimed at specific neighbourhoods in Toronto. The privileging of such initiatives stems from the recognition that the causes of crime are rooted in a complex mix of social and structural factors that can vary across urban neighbourhoods. As such, the CSP emphasizes that solutions cannot be of the 'one-size-fits-all' variety, but rather that resources and support be tailored to address the specific needs of each neighbourhood.

It is, as yet, difficult to comment on the efficacy of recent crime prevention initiatives implemented in Toronto's neighbourhoods for the simple reason that many are new and have yet to be subject to evaluation. Criminological research has consistently highlighted the importance of evaluating and monitoring the effects of crime prevention initiatives to ensure that they are having the desired impact. Careful programme evaluation and monitoring are also important in light of the limited resources that are available for investment in crime prevention and reduction programmes – thus, an understanding of what programmes and interventions are the most effective use of scarce resources is important from a cost-benefit perspective.

Furthermore, although a multi-agency or 'partnership' approach to community safety has been widely endorsed in Toronto, it appears that crime prevention strategies and initiatives are more segmented and compartmentalized than they are collaborative. Research on partnerships and crime prevention has demonstrated that conflicts and tensions often emerge among different parties incorporated within

partnership structures. Therefore, policy-makers in Toronto will face some challenges with respect to fostering an environment that is conducive to the development of inter-organizational trust and collaboration.

On the whole, crime prevention initiatives in Toronto appear to be one facet of more generalized public policy aimed at empowering 'distressed' neighbourhoods and fostering the growth of healthy and self-governing communities. Research has shown that 'non-crime' policies – for example, building neighbourhood-level social and economic capital, increasing levels of community cohesion, and promoting collective action among residents – may, in fact, have important effects on crime. As such, if the obstacles to interagency collaboration outlined above are addressed early on, it may well be that the integration of crime-targeted interventions with more general policies that address social and structural deficits will have lasting effects on crime and violence in Toronto's neighbourhoods.

SECURITY OF TENURE AND FORCED EVICTIONS

Positive policies and legal responses to enhance security of tenure in Brazil

Brazil is one of the most urbanized countries in the world, with 85 per cent of its population, or some 162 million people, living in cities or towns. According to official statistics, some 30 million people migrated from rural to urban areas between 1970 and 1990. The lack of available urban land forced millions of Brazilians to live in cardboard or tin shacks in the urban slums known as *favelas* or *vilas*. Many other low-income Brazilians live in *cortiços*: collective, often dilapidated, multi-family buildings with poor access to basic sanitation and infrastructure.

This was the situation when the period of military dictatorship ended in 1984. The 1988 Brazilian constitution introduced institutional and legal processes for the democratization of the state. The new constitution recognized the right of citizens to participate in formulating and implementing public policy. It thus opened up possibilities of resolving a range of problems stemming from social inequality in Brazilian cities. The constitution also recognized the municipalities as autonomous members of the federation, alongside the states and the union itself. The case of Brazil during the last two decades is thus a story of decentralization and increased participation of social movements and NGOs. This is framed in a historical context where democracy and human rights are increasingly being considered by the national government and its institutions. From the perspective of increasing security of tenure, this gave rise to national policies and programmes aimed at regularizing and upgrading urban slums, including issues related to the utilization of vacant public and private land, the occupation of vacant buildings, the acquisition of informal land, etc.

The City Statute – the Federal Law on Urban Development, adopted in 2001 – introduced a range of legal instruments that address landownership regularization and slum upgrading (see Box 11.8). It also guaranteed protection

against forced evictions through the adoption of the legal instruments of urban adverse possession and the 'special social interest zones'. The latter recognize informal settlements as part of the city and provide special regulations for land use and occupation.

Many social movements, NGOs, academic institutions, professional entities, workers' unions and social organizations have actively engaged in the processes made possible by the new constitution, the City Statute and other new legislation. These range from the elaboration of participatory municipal master plans to the implementation of national public policies. As a result, many programmes and investments have been discussed, implemented and monitored with the direct participation of a range of civil society organizations.

The main policy initiatives arising out of these new pieces of legislation were the National Programme to Support Sustainable Urban Land Regularization (*Programa Papel Passado*) and the National Social Housing System, which identified the limits, possibilities and challenges to implementing comprehensive and integrated social housing projects (see also Box 6.27). Both programmes were designed in accordance with the principles and guidelines contained in the City Statute, and provide for the implementation of the instruments regulated by this new legislation.

The former programme, created in 2003 to provide support to states and municipalities and to regularize union property, seeks to grant landownership titles to households living in informal settlements. The programme also attempts to provide financial and technical support to states and municipalities for the purpose of implementing land regularization and social housing projects. The National Social Housing System was created to regulate an institutional and financial scheme designed to support different social housing projects, including the participation of states, municipalities and NGOs. Its introduction implies that Brazil now has a comprehensive social housing system that can support and fund social housing and land regularization projects.

However, even with the introduction of these two programmes, the achievement of concrete results – such as the provision and registration of landownership titles, the effective support from states and municipalities to housing projects, and the empowerment of communities and social movements – is still a challenge. Many institutional, legal and political obstacles still need to be removed, both at the national and at local levels, before the integration of socio-environmental policies and legislation can adequately benefit the regularization of urban informal settlements.

Brazil has enshrined in its national legislation most housing rights laid down in the international human rights instruments. Even so, this has not always resulted in more or better access to adequate housing and land for the poor. It is thus appropriate to call on the courts to protect the right to adequate housing more effectively, and to consider and apply international human rights law directly when deciding cases involving rights of possession, forced evictions and land conflicts affecting vulnerable urban residents. Within the Brazilian legal system, the civil code has traditionally been

applied by the judiciary to give privilege to full ownership rather than possession in those cases where there is a conflict between the two. These decisions undermine the fulfilment of the social function of property and the application of instruments to protect security of tenure, which are enshrined in the City Statute.

For housing rights to be fully respected, it is essential to obtain recognition from public officials that consideration of human rights is a key objective in the application of urban and housing policies. The Brazilian experience shows that social participation is possible and that it results in fruitful outcomes, when all relevant stakeholders engage together in actions based on a consistent and strategic urban-political platform.

The struggle for tenure in Cambodia

In October 2006, the Australian television network ABC aired a piece on mass evictions occurring in Phnom Penh, which recorded this observation from the US ambassador to Cambodia:

There's too many land disputes, too many rich people, greedy companies. Property is really the key to prosperity and freedom and once people are not secure in what they own, everything else falls apart.

This statement is a good summary of the importance of land to the poor in Cambodia. If the growing disputes over land and the resulting evictions of thousands of households from the city are to end, efforts must be made to better understand the motivation and pressures creating these tragic events. From this, possible alternatives may be found.

In assessing these events it is also essential to understand the legal context of urban settlements in Cambodia since everyone who returned to Phnom Penh after the collapse of the Khmer Rouge regime was a squatter (see also Chapter 5). Thus, among the important revisions to the 1992 Land Law adopted in 2001 was a clarification of adverse possession rights. Under the revised law, Article 30 allowed any person who had occupied a piece of land peacefully and without contest for five years or more to request definitive title to the land. While this provided the prospect of title for many urban residents, there were still many obstacles for them to overcome. These included a general lack of awareness about the process of requesting title; the cost of such requests; the process and costs of appeals; the corruption of the bureaucracy and the courts; and the lack of access to the legal process, particularly when disputes occurred.

Throughout 2006 and early 2007, evictions took place at a rapid rate in both urban and rural areas of the country. There was a pattern to these evictions: companies, often owned by prominent national and local politicians, used the police and the army to evict people from land that, under the 2001 Land Law, should have been theirs. In urban Cambodia, particularly in Phnom Penh, additional pressure came from companies demanding land for development

purposes. In general, increasing competition for land, increasing land values, and urban planning pressures linked to beautification and gentrification were all involved.

The residents of 'Group 78', who faced eviction in 2006, were just one of many examples (see Box 5.6). In their case, many residents already had documents issued by the local authorities recognizing their legal occupation of the land. Despite this, they were to be relocated to the outskirts of the city because the land was needed to 'contribute to city beautification and development'. In order to fight for their security of tenure, such urban residents need support.

However, such support has not come from any level of the Cambodian government – national or local. Nor has this support come from international funding agencies. Support was provided by United Nations agencies and from individual embassies in Phnom Penh, such as that exemplified by the US ambassador's statement. The bulk of support for the potential evictees did, however, come from local NGOs and, to some extent, international NGOs, such as Human Rights Watch and the Asian Human Rights Commission. Human Rights Watch, for example, sent an open letter to development agencies pointing out that they needed to do a better job of providing benchmarks for international assistance. These benchmarks would include the observance by all levels of the Cambodian government of human rights, transparency and good governance. They also pointed out that the agencies forming the consultative group for Cambodia should also support civil society directly.

In addition to the recommendations made by Human Rights Watch, there are a number of other steps that could be taken by communities under threat of evictions to enhance their security of tenure:

- *Awareness-raising.* There is a need to enhance the access of all urban residents to information on procedures for registration of tenure rights, for appeals and for redress. Information is also needed about available land, urban planning proposals and private development proposals.
- *Planning alternatives.* Once information is available to them, communities can begin to formulate alternative plans to those presented by local authorities or private developers. Such alternative plans are an essential negotiating tool.
- *Coordination.* The Housing Rights Task Force requires greater support in coordinating the efforts of local and international NGOs.
- *International support.* There is potential for increased leverage based on international support, particularly where the media can publicize activities widely.

In all of this, it must be emphasized that information and the process of information-gathering itself can be a powerful tool for organizing communities.

Security of housing tenure in the People's Republic of China

Within five years after the founding of the People's Republic of China in 1949, a rural land reform and the nationalization of the urban building stock had virtually solved the historic problem of endemic insecurity of tenure to land and housing. With the deepening of economic reforms, begun in 1978, problems of insecure tenure have gradually re-emerged in both urban and rural areas.

In the cities, newly installed governments commandeered the building stock and apportioned it, in a largely egalitarian manner, to meet the most pressing needs of the local economy and population. Crowding, including bathrooms and kitchens shared by multiple (and sometimes dozens of) families were endemic in large cities such as Shanghai, Guangzhou and Tianjin. On the positive side, however, rents were affordable and evictions were rare. Low rents did, however, make it almost impossible to maintain the quality of the housing or to invest in upgrading of infrastructure or new housing. By the early 1980s, a consensus emerged within government on the need to make housing self-financing (i.e. to remove it from the urban employment welfare package).

Yet, this did not change the fact that housing remained a resource drain for most cities. Neither state, nor collective enterprises, nor government agencies could pay wages that allowed rents to cover the full costs of improved housing. Gradual salary and rent increases during the 1990s helped to lay the ground for the 1998 instruction to halt the distribution of housing as a welfare good. Instead, occupiers of publicly owned housing were required to buy the apartments they occupied or to pay the market rent. With much of the existing state-owned housing stock being offered at bargain prices, housing sales soared by the year 2000. In parallel, purchases of commercial real estate, including luxury housing, grew rapidly, in step with China's burgeoning economy.

In the meantime, reforms in the agricultural sector dating from the late 1970s helped to kick-start what was to become a massive exodus of workers from rural areas. Many of these moved into the fast-growing coastal cities filling the ranks of construction workers, maids, street sweepers, factory hands in export industries, and most of the other hard, dirty and low-paid jobs that permanent city residents frowned upon. Numbering just a few million in the early 1980s, migrant workers in the cities today may total as many as 200 million. Many of these have been forced off their land, often illegally and violently, to make way for growing cities and new economic activities (see Box 5.11).

Once in the cities, migrant workers' security of tenure became and remains the weakest of any group of Chinese citizen (see also Box 5.17). While they may comprise as much as one quarter of the long-term population in China's major cities, only about 2 per cent of them own their housing. Many such migrants are housed by their employers, enjoying shelter only for the duration of their work. Others rent rooms in illegally constructed or dilapidated buildings that are likely to eventually be demolished by authorities. Even for migrants with steady jobs, average incomes of US\$2 to \$4 per day do not permit access to

formal housing arrangements, leaving them vulnerable to forced evictions.

In contrast to the situation of urban-based migrants, 77 per cent of the officially registered urban residents had become homeowners by the year 2000. Many among them had been moved, sometimes forcefully and/or illegally, from older housing units that were to be destroyed to make way for grand-scale urban renewal. Formal tallies of forced evictions do not exist; but those for 'demolition removals' often do. In Shanghai, over the ten-year period ending in 2003, the housing units of some 820,000 households were torn down, directly affecting 2.3 million people. In Beijing, between 1991 and 2008, the corresponding figures were roughly 673,000 and 2 million. To a lesser extent, these experiences are repeated in fast-growing cities across China (see also Box 5.7).

Massive urban redevelopment is one of the drivers of rapid economic growth in China. With the privatization of housing, urban households with formal-sector employment have moved from spending approximately 1 per cent of their, albeit, low incomes in 1990 to more than 40 per cent of their much higher incomes today. However, the incomes of the elderly, infirm, low-skilled and large numbers of workers laid off from state enterprises have not kept pace with those in formal employment. These comprise a significant part of the new urban poor. Even if they receive compensation when they are evicted from their old substandard, but affordable, accommodation, they cannot afford to live in a new one. Instead, they move to another low-rent apartment in the private market. Here they compete with migrants for the shrinking stock of substandard, but affordable, housing. If they live long enough, they may even be evicted again.

China's leaders recognize the seriousness of the problem of ensuring adequate housing for all urban residents. The government is seeking to use market and non-market methods to rein in the explosive increases in housing costs, to build or purchase from the market rental housing for the lowest-income strata, and to offer subsidized housing to help middle-income households purchase their first homes. Low-income (rental) housing, along with subsidized commercial housing, will be located adjacent to the major mass transit arteries, as is being planned for Beijing and has been implemented, to some extent, in Shanghai. While such accommodation may be at some distance from city centres, the new communities are being designed to offer convenient access to full health, educational, commercial and recreational infrastructure. Expanding the coverage of the housing provident fund and instituting support to help low-income families obtain mortgages, along with measures to fully integrate migrant worker housing needs within formal urban housing plans, are recognized as important problems, but have yet to see major policy initiatives taken up by lawmakers. Moreover, the supply of affordable housing through formal channels will fall far below the need for at least the next few years.

A place to live: A case study of the Ijora-Badia community in Lagos, Nigeria

In 1973, the residents of a sprawling old settlement known as Oluwole village in central Lagos were evicted to make room for the construction of Nigeria's National Arts Theatre. Following largely uncoordinated protests by the residents, the federal authorities retrospectively paid paltry sums as compensation to some of the evictees for their demolished homes. Other evictees who insisted on resettlement were allocated vacant plots of land in Ijora-Badia, located less than 1 kilometre away.

Except for allocation papers issued to some of the relocated households by the federal government, there was no evidence of their title to the newly allocated lands. By the early 1990s, Ijora-Badia, like many other informal settlements, had become a choice place to live for many who could not afford the cost of living in formal sections of the city. It had also become a highly attractive frontier marked for demolition and eventual upscale development by affluent developers. Ijora-Badia's poor were expendable and undeserving of the land.

In July 1996, residents of 15 Lagos slum communities, with a total population of 1.2 million people, learned of plans by the Lagos state government to forcibly evict them from their homes and businesses as part of the US\$85 million World Bank-funded Lagos Drainage and Sanitation Project (LDSP). In 1997, bulldozers and eviction officials backed by heavily armed police and military personnel invaded Ijora-Badia and demolished the homes of over 2000 people as part of the LDSP demonstration project.

While bulldozers tore down and flattened houses and property, armed security men harassed, brutalized and arrested residents who attempted to salvage personal effects from their homes. These officials also extorted monies from residents desperate to secure their freedom or gain access to pick up their possessions. The terror unleashed on these residents was heightened by the suddenness of the attack that found mostly women, children and old people at home to bear the brunt.

Prior to the July 1996 eviction announcement, a civil society organization, the Social and Economic Rights Action Center (SERAC), was already working within the Ijora-Badia community, providing basic human rights education and helping the community to strengthen its capacity to communicate with various government institutions.

In an effort to address the eviction threat, SERAC increased its support to Ijora-Badia and other targeted slum communities. Working with community leaders, women, youth and associations, the organization designed and implemented various initiatives and activities, including outreach and sensitization meetings; focus group discussions; onsite legal clinics and training workshops; the creative use of local and international media; as well as posters and handbills that were widely disseminated within and beyond the target communities. More experienced leaders and organizers from similar communities – such as Maroko, which was demolished in July 1990 – were brought in to share their organizing and mobilizing knowledge and experience, and to inspire the leaders and people of Ijora-Badia.

These efforts helped many in the community to gain a new perception of themselves as persons imbued with certain rights that are protected by both national and international law. They also learned that the government and the World Bank had certain legal obligations to them whether or not they had valid legal title to their lands. They learned that the World Bank and the government were under duty to consult with them and to ensure their active participation in the LDSP's design and implementation, as well as to provide adequate notice, compensation, resettlement and rehabilitation to them should forced eviction become inevitable in order to accomplish the project's purposes.

Following a series of consultations and investigations, the government of Lagos renewed its effort to forcibly evict the Ijora-Badia community in July 2003. Now, however, the residents were better organized, mobilized and determined to keep their homes. On 29 July 2003, a demolition squad escorted by heavily armed police officers destroyed a part of the Ijora-Badia settlement, but had to pull back momentarily due to vehement resistance.

On 1 August 2003, SERAC filed a lawsuit on behalf of the Ijora-Badia residents seeking to enforce their fundamental rights, as well as an order of injunction restraining the relevant authorities from continuing with the community's destruction pending a resolution of the matter by the courts. On 19 August 2003, the court granted leave to the applicants to apply to enforce their fundamental rights.

In disregard of the pending lawsuit and the order of leave, the Lagos state government again attacked Ijora-Badia on 19 October 2003. Bulldozers backed by heavily armed police officers destroyed houses and other structures and left over 3000 people homeless, mostly women and children.

In a dramatic turn of events, however, research revealed that a significant portion of the Ijora-Badia lands had been acquired by the federal government of Nigeria in 1929 for the use and benefit of the Nigeria Railway Company. This finding had profound implications for the community and the Lagos state government. In a SERAC-backed petition to the federal minister for housing and urban development, the Ijora-Badia community ascribed responsibility to the federal government for the many violations committed against them by the Lagos state government and demanded immediate action to save their homes and land. In an uncharacteristically swift reaction, the minister notified the Lagos state government of its legal ownership of the Ijora-Badia land and directed the Lagos state government to keep away from Ijora-Badia while accepting responsibility to upgrade and redevelop Ijora-Badia for the benefit of its people.

An urban slice of pie: The Prevention of Illegal Eviction from and Unlawful Occupation of Land Act in South Africa

The first democratically elected parliament of South Africa adopted a constitution with a bill of rights in 1996. The bill of rights included a range of justiciable socio-economic rights, including the right to housing, all of which were to be 'respected, protected, promoted and fulfilled'. The adoption of the new constitution offered hope to thousands of

homeless and landless South Africans, who looked forward to the fulfilment of their rights to land and housing (see also Chapter 6).

After the abolishment of apartheid, millions of people were able to move about freely for the first time, leading to a rapid increase in the level of urbanization. Furthermore, the democratically elected government committed itself to return land to those who had been dispossessed on the grounds of their race and local government, and pledged itself to deliver basic services to the majority of the poor. The government made it clear that South Africa's history had for too long been one of dispossession and dislocation. In excess of 3 million people had been forcibly removed to enforce spatial racial segregation. The apartheid regime had bulldozed black communities and moved them away from the centre of every one of its cities and most towns.

Shortly after the introduction of the new constitution, the courts started grappling with its impact on tenure issues. The key court cases centred on evictions: the new constitution, in effect, banned evictions without a court order made out after considering all relevant circumstances. In a dramatic shift from old cases – where an assertion of ownership was sufficient to obtain eviction – a new court ruling held that landlords/owners had to plead all relevant circumstances, otherwise cases were to be dismissed by the courts.

As a result of the new constitution, the new parliament adopted a series of new legislation (see Box 6.25). Prominent among these was the Prevention of Illegal Evictions from and Unlawful Occupation of Land Act (PIE), which was passed in 1998. In fact, most of the land-related cases that have reached the higher courts in South Africa during the last decade have dealt with PIE's impact on the lives of people living illegally on land in urban areas. The new act protected illegal occupants from the evictions of old and prescribed new procedures for carrying out evictions.

A flurry of cases followed across the country, adopting or rejecting the greater burden being placed on the owner, and the new legislation, particularly PIE, came to play a significant role. Further statutory interpretations ensured that, in all cases, potential evictees (often previously evicted without ever having seen court papers) had to be advised expressly of their right to legal representation; furthermore, the courts ruled that they were entitled to legal representation whenever they faced substantial injustice. Landlords (and courts) initially believed that this legislation regarding 'illegal evictions and unlawful occupations' dealt only with the hundreds of thousands of people living in desperate conditions in informal settlements. However, after a long series of court cases, it was clarified that this protective approach should be applied to all unlawful occupants, including those who had not paid rent or their mortgage, and who had therefore become unlawful occupants. These new court cases were, in fact, developing a substantive rights jurisprudence and were not merely interpreting procedural protections.

The next key shift occurred with the *Grootboom* case (see also Box 6.26), where the Constitutional Court, while not following the High Court's order that shelter should be mandatory for children – held that in failing to provide for

those most desperately in need, an otherwise reasonable local authority housing policy was still in breach of the constitution.

The Grootboom community had brought an application to the High Court in Cape Town seeking an order that the government provide 'adequate basic temporary shelter or housing to them and their children pending their obtaining permanent accommodation; or basic nutrition, shelter, healthcare and social services to the respondents who are children'. The High Court ordered that the children (on the basis of children's rights enshrined in the constitution) and their parents were entitled to housing and certain services. On appeal by the state, the Constitutional Court did not follow the lower court's approach. It confirmed the justiciability of socio-economic rights contained in the constitution. Secondly, it declined, on the basis that there was insufficient evidence before it, to determine a minimum core in respect of the right to housing. It then considered the City of Cape Town's housing policy and held that it appeared reasonable, save that it did not provide relief for those 'who have no access to land, no roof over their heads, and were living in intolerable conditions or crisis situations' – and thus declared the policy to be unconstitutional.

The *Grootboom* decision was greeted with great acclaim, and pressure was brought to bear on all local authorities to ensure that housing policies as set out in the integrated development programmes of each of the local authorities would make provision for those most desperately in need. The Constitutional Court has since considered these issues in even greater depth in the *Port Elizabeth Municipality* case and the *Modderklip* case (see Box 6.26).

The PIE undoubtedly made it more difficult for owners, in general, and authorities in urban areas, in particular, to evict people 'in desperate need with nowhere else to go'. It has strengthened legal protections for poor people and has also enhanced their bargaining position when faced with nowhere else to live, other than on someone else's land without permission. The new legislation has protected poor people against mass evictions and has put extra pressure on local governments to develop policies for those most 'desperately in need', and, accordingly, has ensured that more land is made available for low-cost housing. There have been significant policy advantages to the poor flowing from these court cases. Property owners and lending banks have been less than enamoured with the courts' interpretation and have brought pressure for amendments. The Department of Housing has recently announced plans to amend the PIE and other housing legislation.

Strategies for survival: Security of tenure in Bangkok

The story of the Pom Mahakan community in inner-city Bangkok (Thailand) and its fight against eviction exemplifies one of the major threats to security of tenure for poor and marginalized people all over the world (see also Box 11.6). The threat is urban planning, or, more specifically, development pressures that include tourism, gentrification and the regulation of land use. The Pom Mahakan case also exempli-

fies how communities can develop strategies to counteract such threats. It highlights how it is important to understand the source of a threat in order to respond effectively to it.

For the last 150 years or more, this community of nearly 300 people had existed at the edge of Rattanakosin Island – the original settlement of Bangkok, dating from the mid 1700s – between the *klong* (canal) and one of the last remaining pieces of the old city wall. The community is also located just next to two of Bangkok's other major tourist attractions: Wat Saket (Golden Mount Temple) and the old fort (Pom Mahakan).

When a master plan was approved for Rattanakosin Island in 2002, the impetus was to improve the prospects for tourism in the area. In doing this, the plan called for a dramatic increase of parklands, particularly around existing monuments, temples, the royal palace, the canals and the Chao Phraya River.

Because of its location, the Pom Mahakan community, living on a piece of land some 50 metres wide and 150 metres long, had been facing the threat of eviction long before the Rattanakosin master plan. The city had always seen this location as a future park where tourists could sit and view Wat Saket from across the *klong*. With this view surrounded by the historical setting of the old fort and the wall of the city, in the minds of the city planners, it had long been an ideal place for a park.

Understandably, then, Pom Mahakan was the first of Rattanakosin's communities to be targeted for beautification. In January 2003, the city planning department posted eviction notices on all the houses in the community. Pom Mahakan was simply going to be the first in a long line of evictions in aid of the master plan to beautify Rattanakosin. Behind it were the forces of gentrification and tourism, as well as arguments about the preservation of national history, environmental protection and economic development.

In November 2002, as a result of the persistent insecurity of tenure faced by the residents of Pom Mahakan, the Community Organizations Development Institute (CODI) brought a group of architecture students from one of the local universities to the community. The idea was that the students, working in close collaboration with the Pom Mahakan residents, should develop alternative planning proposals for their community's improvement. When the city authorities issued the eviction notices, these alternative plans became part of the residents' argument against the eviction process. Their argument, however, needed more than an alternative plan. They had to respond to the master plan and what motivated it – namely, the establishment of a park. The issues that were included in their argument with the city authorities comprised the following:

- *History*: an understanding of how to view history and historical preservation. Is it the artefacts and/or architecture alone, or are people included? Is it only 'official' history, or is vernacular history included?
- *Development*: an understanding of the process of development – how decisions are made and who makes them.
- *Costs/benefits*: an understanding of who benefits from

development and who pays. Was the city authority evicting these people simply for tourism? Should it be the community alone who pays the cost of tourism?

- *Parks*: an understanding of the use of urban parks and how they work. Can parks be designed with housing? There was ample precedent for this.
- *Environment*: the ways in which the basic conflict between green and brown issues is resolved (i.e. parks or housing). Must this kind of choice be made?
- *Rights*: an understanding of human rights and the 'right to the city' – the right to space, to land and access to services.
- *Conflict resolution*: the manner in which conflict can be avoided in the development process.
- *Gentrification*: does the community have the right to be part of overall economic development in the city, and if so, how?

In developing these arguments, the community was able to create alliances with other communities and other interest groups. This proved to be essential to their ultimate success. Along with alliances with other communities facing eviction, the Pom Mahakan residents were able to add academics in a number of disciplines. Along with the architecture students, law, political science, anthropology, landscape architecture, and planning faculty and students were involved, not only locally but nationally and internationally. In addition to the academics, the National Human Rights Commission supported the community's claim to the extent that it pushed the city authority into acceding to the commission's demand that it postpone the eviction process. Furthermore, the Centre on Housing Rights and Evictions (COHRE), an international NGO, helped the community engage the United Nations High Commission for Human Rights.

All of these arguments – historical, economic and cultural – along with the fact that they had an alternative to the official plan, led the city officials, under a new governor elected in 2004, to rethink their plan. Finally, a contract was signed in early 2006 between the city and the community to have the architecture faculty of a local university complete a report that would allow for the community's design to be realized. That report was completed in September 2006, and the renovations of the park and the Pom Mahakan community were expected to begin in 2007.

Security of tenure in Istanbul: The triumph of the 'self-service city'

Turkey is perhaps the only developing country in the world to have successfully accommodated massive rural-to-urban migration through the creation of stable and well-serviced neighbourhoods. The country has done this with no major planning interventions, minimal investment in traditional government-built social housing and, in fact, almost no government action. What is more, these high-quality urban neighbourhoods have grown even though Turkey has a complex system of land tenure. With many basic concepts deriving from the Ottoman era, outsiders often find Turkey's land laws mystifying (see Box III.1).

The key to Turkey's success in housing its new urban arrivals is the fact that some of these vestigial laws give migrants the ability to build on unused or undesirable land on the urban periphery. Squatters in Turkey often build on land that has no single private owner and is held, instead, in either an undifferentiated shared title or by various government agencies. The squatter communities are able to survive and thrive because inhabitants have been particularly savvy in using two obscure local laws that help them to prevent their homes from being demolished. The first – Turkey's so-called '*gecekondu* law' – guarantees that people who build overnight without being caught cannot be evicted without due process of the law. In other words, they cannot be evicted without a court fight. To make use of this law, many squatters engage in a cat-and-mouse game with local authorities, building and having their homes demolished several times before succeeding in surviving the night and therefore gaining the right to a court hearing. Over the years, the Turkish government has issued periodic amnesties, essentially making many of the original 'built-overnight' communities quasi-legal (see Box 6.5).

The second law gives communities of more than 2000 people the right to petition the federal government in order to be recognized as legal municipal entities. Communities can register as a *belediye* (municipality) or an *ilçe* (district). The technical requirements are different, but the result is the same: access to politics. When squatter communities become a *belediye* or an *ilçe*, they gain the right to organize elections and create a local government. In a giant city such as Istanbul, every resident – in legal as well as 'illegal' neighbourhoods – is actually a citizen represented by two elected governments: the *Büyük Şehir*, or 'big city,' and the *belediye*. Every resident has two mayors: one from the big city and one from the small. The local government, in turn, can exert control over many aspects of land use, can pass and implement local plans, and can even collect revenues to fund government services. And if the local politicians are particularly savvy, they can negotiate with the bigger cities in which they are located to expand infrastructure and city services. This 'access to politics' has allowed squatters to create self-governing cities that are often more desirable places in which to live than the 'housing projects' built by the government for low-income groups.

Sultanbeyli, far out on the Asian side of the city, is a good example. A mere cluster of a few dozen houses three decades ago, Sultanbeyli today is a full-fledged squatter city of 300,000 residents led by a popularly elected mayor who heads a city government that provides many essential public services. Sultanbeyli became a *belediye* in 1989 and an *ilçe* in 1992, and using those powers, the district has successfully negotiated with one of the big city government's agencies to fund a US\$90 million project to run water and sewer pipes to every home.

This squatter area has declared that it will seek to recreate itself as a legal community through selling private titles to its residents. But some squatters fear that establishing private property in land will increase costs and, ultimately, destabilize their communities (see Box III.1). Without squatting, many of the inhabitants in such commu-

nities would either be homeless or hungry. Rents in Asian-side areas of Istanbul near Sultanbeyli and Sarıgazi are close to US\$62 per month. This is more than half the income of many of the squatters and, at that price, they would not have enough money to feed their families. With Istanbul continuing to grow, it is quite possible that selling private titles could set off a frenzy of speculation in Sultanbeyli. Illegal ownership, while perhaps legally precarious, is possibly safer for poor people because they don't have to go into debt to build their houses. They build what they can afford and when they can afford it.

Today, Turkey is under pressure to modernize its land tenure system as it seeks to join the EU. Perhaps in acknowledgement of this, the government has intensified efforts to demolish certain squatter neighbourhoods in Ankara and Istanbul and to replace them with social housing. Nevertheless, the country should not ignore the successes of the 'self-service' system pioneered by the squatters. Without landownership, squatters have nonetheless built stable and desirable modern neighbourhoods. Their achievements should be studied closely to see if they offer a much more cost-effective and desirable form of urban development.

With its experiment in sensible self-building, Turkey is perhaps the only country in the world to have successfully integrated urban migrants and squatters within the maelstrom of its cities. As many countries around the world are facing massive urban expansion, Turkey's squatters could become a model for developing nations around the globe.

NATURAL AND HUMAN-MADE DISASTERS

Lessons in risk reduction from Cuba

Cuba sits squarely in the path of hurricanes blowing up from the Caribbean into the Gulf of Mexico. According to the Cuban National Information Agency, Cuba faced 48 hydrometeorological disasters between 1985 and 2000. A major hurricane hits the country every few years, as a result of which homes are destroyed, coastal areas flooded and agricultural production damaged; but very few people die. Between 1996 and 2002, six hurricanes hit Cuba: Lili (a category 2 hurricane) in 1996, Georges (a category 3 to 4) in 1998, Irene (a category 1) in 1999, Michelle (a category 4) in 2001, and Isidore and Lili in 2003 (both category 2). The total number of fatalities in Cuba for these six hurricanes was 16 people out of the total 665 deaths they collectively caused in the affected countries. Despite being a small poor country with few resources, Cuba has successfully curtailed the number of deaths from frequent and violent hurricanes.

Central to Cuba's successful risk reduction is the government's stated priority to save lives during a hurricane (see also Box 8.15). The country's risk reduction system supports this commitment through a range of disaster mitigation, preparedness and response activities. Disaster mitigation at the national level is facilitated through laws and legal frameworks, as well as land-use regulations, building codes and physical planning. The research and monitoring

activities of the Cuban Institute of Meteorology further reinforce disaster mitigation initiatives. Disaster preparedness is coordinated at the national level by the High Command of the National Civil Defence. Preparedness activities successfully build on governmental and administrative structures already in place. Moreover, Cuba has developed an effective communication system for disaster preparedness that emphasizes:

- a clear decision-making structure for disaster preparedness and response that everyone understands;
- political will to act on and disseminate information to the general population through designated public communication channels;
- a clear, consistent and easily understood package of information on the progress of a hazard and the measures to safeguard lives;
- alternative systems of communication in case power lines are affected by a hazard.

A particularly noteworthy aspect of Cuba's disaster risk reduction system is its emphasis on enhancing community-level disaster risk reduction capacity through cultivating a 'culture of safety'. Key aspects of Cuba's community-level risk reduction efforts include:

- *Education*: the Cuban government constantly reinforces education on risk reduction through the formal education system, the workplace and public education. Disaster prevention, preparedness and response are part of all school curricula and many university curricula. Routine training on risk reduction is provided in institutions and workplaces. The media runs programmes and broadcasts regular messages about risk reduction, disaster mitigation and preparedness.
- *Community organization and social capital*: Cuba is a highly organized society with dense social networks that provide ready-made networks of communication. People may have memberships in several mass organizations and professional organizations that intersect and cross over neighbourhood, professional and workplace spheres. Such social organization builds knowledge and creates cohesion among different groups and actors, which strongly enhances cooperation in times of emergencies.
- *Community risk mapping*: community-level risk mapping is the mortar in the wall of Cuba's risk reduction system. It is undertaken by people who live in the neighbourhood, such as the family doctor or representatives of mass organizations. It involves identifying those who will need additional assistance during evacuation and persons who could provide such assistance. The Committee for the Defence of the Revolution at the neighbourhood level collates this information for incorporation within annual community emergency plans. In turn, information gathered at all levels is used to update Cuba's national emergency plans every year.
- *The national simulation exercise (the Metereo)*: risk reduction capacity is reinforced by the annual simula-

tion exercise. Once a year, at the end of May, before the hurricane season starts, Cubans participate in their respective ministries, schools, workplaces and hospitals in a two-day training exercise in hurricane risk reduction. The first day consists of simulation exercises to rehearse disaster scenarios, while the second day focuses on preparation activities.

Cuba's disaster response is organized into four phases: 72 hours before the disaster; 48 hours before the disaster; the hurricane period; and recovery in the post-disaster period. The government packages messages and information relevant to each phase in clear, consistent and easily recognized formats. For each phase, there are consistent instructions about what measures to take and what to expect. These have been clearly assimilated by the entire population, including school children. These are taught in schools and workplaces, explained in Red Cross training activities and reinforced through the media.

Within a context of limited resources, the Cuban risk reduction system has been very effective, as demonstrated by the surprisingly low numbers of hurricane-related deaths. This calls for a reassessment of the often assumed advantage of wealthy countries in protecting lives during emergencies. There are increasingly compelling reasons for other governments and organizations to learn from the Cuban example, especially those with fewer resources and in need of an effective, low-cost, low-technology risk reduction system.

Vulnerabilities exposed: The 2004 Indian Ocean Tsunami

The Indian Ocean Tsunami of 26 December 2004 transcended the world's imagination for natural disaster. Just before 8:30 am local time on 26 December 2004, tsunami waves with maximum heights ranging from 2 to 15 metres began to hit coastlines in the Indian Ocean. The Sumatra–Andaman earthquake, of magnitude 9.0 on the Richter scale and with an epicentre off the west coast of Sumatra (Indonesia) set off the waves that directly hit 12 countries. From Southeast Asia to Africa, tsunami waves consumed entire towns, infrastructure collapsed, response plans fell apart and millions of survivors were left unaided to search for food, water, shelter and loved ones. More than 180,000 people died, over 40,000 went missing and in excess of 1.7 million were displaced. Total estimated economic damage from the tsunami exceeds US\$10 billion. Losses in fishing, agriculture and tourism industries, as well as informal-sector economic activities, paralysed livelihoods among affected populations, with serious negative impacts on national economic growth. In the agricultural sector, the tsunami affected close to 130,000 farmers in Aceh (Indonesia); ruined 39,035 hectares of cropped area and killed over 31,000 livestock in India; and flooded over 23,000 acres of cultivated land in Sri Lanka. In Thailand, the tourism sector lost more than 120,000 jobs and estimates suggest tourism industry losses of around US\$25 million per month.

During the tsunami, staggering human losses were recorded among specific sub-groups due to socio-economic

factors. Women made up one such vulnerable group (see also Box 7.6). Children are another group hit hard by the tsunami and for whom efforts are being made to 'build back better'. For example, Zahira College in southern Sri Lanka saw 100 students, the principal and 5 teachers die, and 90 students lost one or both parents. Although the school is operating on relief supplies, by 2007 a new facility with more space for recreation and computing, a library, separate girls' and boys' bathrooms, and boarding facilities for teachers will provide more support and prospects for students.

The over-reliance on a few economic sectors worsened economic vulnerability during the tsunami. Dependence upon a few large industrial sectors – fishing, agriculture and tourism – for the majority of employment in tsunami-affected localities, and the lack of protection of those industries against such a hazard, compounded the devastation – not only causing large economic losses, but also reducing capacities to regain normalcy and recover afterwards. For instance, almost 75 per cent of the total fishing fleet was damaged or destroyed in Sri Lanka, where artisanal fishery is an important source of fish for local markets and industrial fishery is the major economic activity. Environmental damage to reefs and changes in winds, currents and populations of fish were also reported.

The phenomenal physical damage that occurred as a result of the tsunami was also a consequence of poor physical preparedness in affected areas. The built environment could not resist the tsunami's force, leaving victims unprotected – without shelter, safe water, communication or access to help. In Indonesia, for example, the tsunami severely damaged already poor infrastructure, increasing the event's casualties, and hindering relief and recovery. Before the tsunami, 67 per cent of roads were damaged, increasing to 72 per cent afterwards. Infrastructure damage in Thailand, including of piers, bridges, culverts, roads, dikes and public utilities, amounted to more than US\$26 million. Total shelter losses across India, Indonesia, Sri Lanka and the Maldives numbered over 580,000 houses (severely damaged or destroyed).

Inadequate institutional preparedness further exacerbated loss from the tsunami in several contexts. Although the tsunami was identified, early warning information either failed to reach communities at risk or was transmitted too late. For instance, lives could have been saved in India as the tsunami took two hours to make land there after striking Indonesia; but there were no established communication networks or organizational infrastructure to deliver the warning to the people at the coast. In some places, such as Kanyakumari district in Tamil Nadu (India), the situation was made worse by the fact that concerned officials were away for Christmas.

In response to the colossal destruction of the tsunami, the world is implementing the largest ever reconstruction effort, involving 124 international NGOs and 430 local NGOs, as well as donor and United Nations agencies. Tsunami aid across the world reached over US\$13.5 billion. The international community's response received praise for the unprecedented aid sent to assist tsunami relief and recovery. However, it also drew criticism for lack of coordi-

nation, supply-driven irrelevant or redundant activities and inputs, competitive 'bidding' for client victims, and poor understanding of community needs. In many cases, local populations were never consulted on what and how they wanted the resources spent, as a result of which misunderstandings on needs and strategies to meet them ensued.

Fortunately, international and national bodies from governments, the private sector and NGOs are responding to these criticisms, including those resulting from failures in coordination. The development of international aid tracking systems is one method that seeks to streamline and improve accountability in international assistance. In Thailand, the Thailand International Development Cooperation Agency, with support from the United Nations Development Programme (UNDP), has implemented the Development Assistance Database. This government-owned clearinghouse for information on technical assistance projects in the country is designed to aid long-term recovery by keeping updated information on technical assistance projects. By improving information availability and consolidation, the Development Assistance Database provides the opportunity to identify unmet needs and redundancy, make informed decisions about priorities and coordinate among actors at different levels.

The tsunami illustrated the profound vulnerabilities of human settlements around the Indian Ocean. The disaster was not a catastrophic anomaly, but rather a looming prospect linked to failures in resilience and, more specifically, weak human security, physical and institutional preparedness, and the interaction of these weaknesses. As the tsunami recovery process continues to unfold, efforts increasingly aim to build back better and there are signs of success.

Disaster response and adaptation in Kobe, Japan

Kobe, a city of roughly 1.5 million people, is located in the Hanshin region of western Japan, which produces around 10 per cent of the country's total gross national product (GNP). At 5:46 am on 17 January 1995, an earthquake of magnitude 7.2 occurred on the northern tip of Awaji Island, heavily damaging structures as far away as 70 kilometres. Within this area was much of metropolitan Kobe.

The disaster left 6300 dead, 150,000 buildings destroyed, 300,000 people homeless and caused direct economic losses of US\$200 billion, making it one of the costliest earthquakes on record. The indirect economic losses resulting from disrupted commerce and industry in Kobe and its economic hinterland, which stretches into Southeast Asia, are thought to significantly exceed direct losses. Exacerbating the situation was the severity of damage to the city's lifelines. Transportation, gas and water services were disrupted, and Kobe's power and communication systems were heavily damaged.

While the earthquake itself was of a formidable magnitude, the resulting catastrophe was a combination of several risk factors. Geological conditions exacerbated loss given the soft, water-saturated soils of the city, which led to

structural damage and landslides from soil liquefaction. Kobe is also located on a narrow strip of land between the Osaka Bay and the Rokko Mountains. The collapse of elevated roads and railways severed all major transportation lines within this narrow corridor.

The built environment of the city further aggravated damage from the earthquake. Most lifelines and infrastructure were built prior to the implementation of more rigorous codes and performed poorly during the earthquake. Housing in Kobe was particularly vulnerable to damage since an estimated 60 per cent consisted of traditional wooden dwellings with heavy tiled roofs supported by light frames, a design created with storms in mind but ill suited for earthquakes. Thus, housing constituted 95 per cent of the building damage and accounted for more than 50 per cent of the total value of the damage in the Hanshin region, leaving hundreds of thousands of residents in need of temporary shelter. Like many older cities, central areas had narrow streets with very dense populations – around 6000 to 12,000 people per square kilometre. Moreover, the City of Kobe's development pattern had drawn investment, and people, away from inner areas, thus exacerbating the degree of dilapidation and neglect.

Socio-economic polarization, which had already begun to manifest itself within the geography of the city well before the earthquake, was an additional factor that increased vulnerability in Kobe. The destruction was concentrated in low-income areas of the inner city, where residents tended to be the elderly, working class citizens or students living in low-cost houses. This is reflected in the death rates – 53 per cent of those killed were more than 60 years old, and rates for persons in their mid 20s were also comparatively high. The inner-city areas also had communities of immigrant labourers and *buraku*, a 'historically untouchable caste'. Vulnerability within specific neighbourhoods and communities had been allowed to continue unaddressed by policy-makers, and arguably remained unaddressed throughout the recovery process. Middle-class families tended to live outside the city centre, where newer higher-quality housing existed.

In the period after the earthquake, the government of Japan constructed 48,000 temporary housing units to house 100,000 people. Within the heavily damaged centre, city parks and schools were used for temporary shelters. However, the majority of shelters were placed in the outer areas of the city on vacant land or parking lots, two hours away by bus or train. Preference was given to the elderly and disabled, who accounted for 60 per cent of the population in the camps, as well as to single parents. Despite good intentions, moving the elderly and disabled to temporary housing in the outlying areas of the city separated an especially vulnerable population from their families and services. Temporary shelters officially closed after eight months, although housing needs were still unmet for thousands of displaced persons. As a result, many resorted to makeshift shelters in tents or under tarps, or relocated altogether to other cities. Many could not rely on insurance payments to rebuild their homes due to restricted policies (see also Box 12.15).

Housing recovery in Kobe was, for the most part, left to market forces rather than government programmes. Instead, the government focused on large infrastructural projects. Economic pressures led the poor, elderly and renters to move away from high-value city centre locations by selling their property to speculators rather than borrowing money for rebuilding. Those who did attempt to repair or reconstruct their homes within the inner city faced the difficult task of working within the physical limitations of the area, while also meeting the demands of new building regulations. The government prohibited permanent reconstruction in about half of the heavily affected areas. In lots where reconstruction was attempted, compliance with the Building Standards Act was mandatory. New buildings were required to be adjacent to a road at least 4 metres wide and of a building-to-site area ratio of 60 per cent or less. Because of the density and narrow streets of the area, it was often impossible for the rebuilt structure to match the former house's building area or floor area, and in some instances it was impossible to construct anything at all since more than half of the lots were adjacent to very narrow roads.

While city-wide measures are highly positive, the benefits of the housing recovery programme were not reaped by those most in need. The city of Kobe as a space has recovered in most sectors; but many victims of the earthquake have not recovered. Many of those displaced have never returned. Diasporas of disaster give a false impression of success by eliminating those most in need from the scope of concern. Following such calamitous events, holistic recovery requires recognizing that the city has, at least temporarily, been scattered beyond its boundaries.

Learning from the Mexico City earthquake

A series of powerful earthquakes struck Mexico City from 19 to 20 September 1985. The first tremor hit at 7:19 am, lasting for nearly two minutes and registered 8.1 on the Richter scale. Dozens of smaller but powerful after-shocks continued to consume the city, culminating in a final 7.5 magnitude quake, 36 hours after the first tremor. Even for this natural hazard-prone urban centre, the 1985 earthquake struck with an unprecedented force. The ensuing disaster killed between 3050 and 10,000 people, injured between 14,000 and 50,000, and caused overall economic losses of an estimated US\$4 billion. The earthquakes destroyed thousands of modern and antiquated buildings and damaged 100,000 more. This destruction left 2 million of Mexico City's 18 million residents homeless.

Earthquakes pose an ever-present threat to Mexico City. Mexico is one of the world's most seismically active countries, sitting atop the intersection of five tectonic plates. Located in the centre of the country directly above these faults, Mexico City is particularly vulnerable to any seismic movements and has suffered a recorded 340 earthquakes in the vicinity since Aztec times. Moreover, the city is partially built on a lakebed of unstable saturated mud and clay soils and is responsible for the city's ongoing subsidence of up to 40 centimetres per year in some areas. The city's sinking compromises buildings' structural integrity and

increases their vulnerability to seismic movements. Such geological factors contribute to increased earthquake risk and amplify earthquake impacts.

The housing sector suffered the worst damage from the 1985 earthquake. A year before the earthquake, planners estimated that the city faced a housing shortage equivalent to 30 per cent of the existing stock. High rural–urban migration, low wages, rent control policies and high urban construction costs, among other factors, had resulted in inadequate housing development and maintenance by both the private and public sectors. This forced city dwellers to overcrowd the available housing, thereby rendering it less safe for habitation.

Among housing damaged by the earthquake, large multi-storey apartment buildings that accommodated hundreds of residents and smaller apartment buildings called *viviendas* suffered the most. Multi-storey government buildings constructed during the 1950s and 1960s as low-cost alternatives had offered a solution to Mexico's ongoing housing shortage. Yet, decades later, the oversized structures proved to be among the most vulnerable to the earthquake's force, killing thousands of inhabitants and leaving thousands more homeless. Post-quake analysis revealed that the use of substandard construction materials and loose adherence to building standards contributed to the devastating collapses. The hard hit *viviendas* were typically old and in poor condition, often lacking basic plumbing and sanitation services. The poor state of some of these structures could be attributed to 'absentee' landlords who had long neglected their properties, citing rent-control policies that removed market incentives for landlords to maintain or rehabilitate buildings.

No residential losses had insurance coverage, forcing the government and citizens to bear the brunt of responsibility for financing housing reconstruction. On 4 October 1985, the Mexican government formed the National Reconstruction Commission, which developed four government housing programmes. A total of 94,893 housing units were repaired, upgraded or built anew under these four programmes. However, the public felt that the government response paid greater attention to the middle-class areas of the city, rather than the poorer downtown tenement areas. Some of the reconstruction policies and programmes implemented also reproduced pre-existing inequities that had previously created and perpetuated many of the city's vulnerabilities. Moreover, ambiguities in ownership and tenure and private landlords' refusal to invest in what they considered worthless properties meant that many damaged apartment buildings remained in their state of disrepair.

NGOs partly filled the gaps left by the government in disaster response activities. Community organizations also stepped in to meet citizen's needs and independently contributed over 7000 new housing units (both reconstruction and repair). NGOs and community groups partnered with the government projects to help realize the housing objectives, but opposed those interventions which seemed to work against citizens' interests. These organizations worked to combat the reinforcement of social inequities perpetuated through government-sponsored housing recon-

struction. They also lobbied for rebuilding and rehabilitation within existing residential communities instead of removing citizens to peripheral areas.

In the two decades since the earthquake, Mexico has taken significant steps towards addressing risks related to earthquakes and other hazards. Many of these are technological advancements in earthquake monitoring, plans to improve structural resistance to earthquake tremors and citizen readiness programmes. Motivated by active community involvement during the 1985 recovery, the government has added mechanisms to incorporate citizens' voices within public debate and decision-making. Furthermore, Mexico has established monitoring and warning systems to detect earthquakes, volcanoes and tropical storms, such as the 1991 Seismic Alert System (SAS). The international community has also directed attention to Mexico City's disaster risk. For example, the World Bank is involved in disaster risk assessment in Mexico and supports risk mitigation efforts.

Reducing vulnerability in Mexico City is a perennial challenge. While many risk factors that exacerbated the effects of the 1985 earthquake have been addressed, new vulnerabilities constantly emerge. The rapid spread of informal settlements that do not follow building codes and laws, and spatial polarization of the poor, are some factors that continue to undermine resilience to disasters. If a similarly powerful earthquake hits Mexico City again, it is probable that there will be an enormous death toll and significant structural damage. Despite their dynamism and recurrence, hazards in Mexico City are predictable. The key to increasing the city's resilience is to understand vulnerability as an evolving and interdependent process, which must constantly be reassessed, and to simultaneously mitigate multiple disaster risks at multiple levels.

Living with floods in Mozambique

International media coverage of 23-year-old Caroline Mabuiango giving birth to daughter Rosita while clinging to a tree limb high above the raging waters that had swallowed the earth gave a human face to the devastating flooding that tormented Mozambique from October 1999 into March 2000. Carolina, one of 15 people who sought refuge for three days in a Mafurra tree, was one of the survivors. Others, like her grandmother, could not withstand the driving rains and were swept away by the merciless waters. While flooding in Mozambique was not a new phenomenon, the disaster known as 'the 2000 floods' was the most severe the country had experienced in 50 years. The Mozambican government calculated that the flooding killed at least 700 people, displaced 650,000 and left 1 million in urgent need of nutritional and/or medical assistance. Overall, the floods affected 4.5 million, about one quarter of Mozambique's total population, by destroying land, property and disrupting livelihoods. Moreover, the floods had a devastating impact on several of Mozambique's small but growing urban centres, the location of more than 70 per cent of all related deaths.

As a predominantly rural country with several small- to medium-sized urban and peri-urban centres,

Mozambique's experience emphasized the relevance and interconnectedness of urban safety to wider national and even regional preparedness strategies. While the 2000 floods primarily debilitated rural Mozambique, there were far reaching consequences for the country's urban centres. The floods' destruction of over 66 per cent of Mozambique's crops, 140,000 hectares of farming and grazing land, agricultural equipment and irrigation systems and the death or serious injury of hundreds of thousands of livestock decimated the food supply, drove up prices and made all urban areas, even those unaffected by the floods, vulnerable to hunger. At the same time, by incapacitating the country's transportation infrastructure, the floods prevented the delivery of food to urban areas from neighbouring countries. The floods also caused significant direct loss of life, livelihoods, economic assets and physical infrastructure in Mozambique's urban centres (see also Box 7.2).

Complex risk factors expose Mozambique to the threat of flooding. The country's many rivers, extensive river basins and dams contribute to the physical vulnerability of the country to flooding. More than 50 per cent of Mozambique's territory is located in international river basins so that physical hazards are regional in nature and cannot be managed by the country on its own. Poor land-use practices in areas within and surrounding Mozambique's cities exacerbate the severity of the damage from floods. Extensive deforestation has been identified as a key contributing factor that magnified the impact of the 2000 floods. Disregard of land-use plans led to the construction of buildings in hazard-prone locations. Poor urban residents living in informal settlements were especially vulnerable to the impacts of the floods. Mozambique's vulnerability to flooding should also be seen in the context of extremely low human development, post-conflict reconstruction and high debt accumulated throughout prolonged conflict and the subsequent implementation of structural adjustment initiatives.

Despite its minimal resources, Mozambique has demonstrated a willingness to invest in the mitigation of future disasters and, together with the international community, is responding to lessons learned from the 2000 floods. Post-flood interventions have been both structural and institutional. Since the 2000 floods, additional dams, such as the Moamba on the Incomati River, the Mapai on the Limpopo River and the Mepanda Uncua on the Zambezi River, have been built. Many hydrometric stations have been upgraded and hydrological sites modernized, enabling more data collection and sharing among relevant actors. Institutionally, government departments such as the National Disaster Management Institution and the Coordinating Council for Disaster Management have been expanded and given a stronger mandate to provide emergency response and enforce policies, respectively. The removal of political jurisdictions and increased transparency are expected to help avoid miscommunication and to enable vital information to be shared quickly among relevant departments.

In 2006, the government reported significant progress in disaster risk reduction efforts. Most notable had been experiences of floods one year after the 2000 floods.

Prolonged and intense rains returned to Mozambique at the end of 2000 and the beginning of 2001, resulting in serious flooding during February and March 2001 in central provinces. This flood affected 500,000 people and displaced 223,000. Before the flooding began, essential government agencies received training and delivered 5100 tonnes of food to flood-prone areas in December 2000 in preparation for the 2001 rainy season. While the flooding itself was less severe than the 2000 disaster, country-level actors, including government agencies, international donors and institutions, and civil society organizations had integrated lessons learned from 2000 within their disaster systems and contingency plans. The international community also responded quickly to calls for aid, providing 93 per cent of the country's appeal by mid 2001.

Vulnerability to monsoon flooding in Mumbai, India

On 26 July 2005, the deep-seated vulnerability of Mumbai's deteriorating infrastructure, weak planning and implementation of the government's disaster mitigation strategy, and overwhelming socio-economic inequalities showed through in the face of disastrous monsoon rains and flooding. As India's heaviest recorded rainfall, Mumbai was battered with 2.89 inches of rain in the city centre and 37.2 inches in surrounding suburban areas in one single day.

The aged and poorly maintained drainage systems throughout Mumbai exacerbate flood risk in the city. The city's centre has an over 100-year-old drainage system with cracked pipelines that frequently leak into drinking water pipelines. During the monsoon season, when the rains raise the sea-water level, these pipelines flood with water, mixing with street sewage and leading to the closing of streets every year. Due to the pressure to create housing for the growing population and incentives of high real estate profits, the development of suburban areas has not been accompanied by the necessary infrastructural facilities. There are open sewers throughout this area that are usually clogged with waste and are closed due to road expansion and construction. This area is home to both new government development and the largest portion of the city's slum dweller population residing on the Mithi River's banks. In fact, 70 per cent of the Mithi River's embankments are occupied by informal settlements.

Growing flood risk in Mumbai is also associated directly and indirectly with rapid urban population growth. The population of the city and its surrounding suburban areas increased by 38 per cent, from approximately 12,420,600 in 1991 to approximately 20 million by the end of 2005. Mumbai alone takes in 350 families every day. While urban populations are expanding, it has become more difficult for state and municipal governments to house and provide services for the growing populations. Thus, over half of Mumbai's 12 million people live in informal settlements or slums.

Due to poor land regulations and policies, the majority of Mumbai's slums are located in areas that are most prone to flooding during times of heavy rainfall and high

tides. Thus, slum dwellers experience the brunt of natural disasters. The encroachment of slums on vital drainage areas further limits the capacity of the city to ensure effective drainage both prior to and following heavy rains. The overwhelming accumulation of new and stagnant rain water inevitably spills over into relatively dry areas of the city. By not addressing chronic drainage and sanitation problems in Mumbai's slums, the entire city is exposed to devastating flooding during the monsoon season.

Mumbai actually had a Disaster Management Plan (DMP), prepared by the Relief and Rehabilitation Division of the Government of Maharashtra, in place prior to the July 2005 floods. The Mumbai DMP provides a risk assessment and vulnerability analysis that recognizes flooding as a major risk to the city and identifies vulnerable locations and communities. However, studies note that the plan was never enacted in a way that could prevent the 2005 floods. In the decade that elapsed since the DMP was developed, no action was taken to alleviate the pinpointed risks and chronic problems that the plan identified. The government had not devised or implemented a plan of action to repair and maintain working drainage systems, new housing options for slum dwellers living in flood-prone areas or sound land policies to address the city's overpopulation.

Following the floods, a committee was set up to manage relief efforts for the crisis. The committee deployed army, air force and navy personnel for search-and-rescue operations, heavily relying on the assistance of non-governmental and community-based organizations. Relief efforts included the removal of 100,000 tonnes of garbage and 15,321 cattle carcasses, in addition to the provision of food grains, chlorine tablets for safe drinking water and oral rehydration solutions. The government released public health advisories and distributed 133 medical teams to prevent the spread of infectious diseases, such as cholera and gastroenteritis. A commitment was also made to provide financial assistance of US\$22 for each of the approximately 842,185 destitute persons. Furthermore, a week after the deluge, the Mithi River Authority was created to address risk associated with the river and the surrounding area. A major component of the authority's responsibility was to remove the encroachment of slum dwellings upon the river and to improve the area's drainage system. However, neither of these responses initiated by the government called for the active involvement of citizens or non-governmental urban planning engineers and professionals.

As a megacity, Mumbai's large physical area, growing population and complex social factors make the development and implementation of disaster management plans inherently difficult. The size and dynamic nature of the city increases the liability to disaster risks. The existing physical hazards and correlating social conditions exacerbate Mumbai's vulnerability to flooding.

The Dutch experience in flood management

Since the establishment of the earliest settlements in the area, the people of The Netherlands have struggled with the ever present threat of flooding in the cities and towns of

their low-lying region. Over half of the land area of The Netherlands is below sea level, and in the south-western part lies the marshy delta of three big rivers: the Rhine, Meuse and Scheldt. Although this geography provides fertile soil and easy access to the seas and waterways, these areas are also subject to the dangers of river flooding and of the ebb and flow of the sea.

Creative innovation and the adaptation of new technologies for water management have enabled the Dutch to successfully mitigate risk, prospering despite the natural hazards posed by the surrounding waters. To protect themselves against flood risks, the Dutch have built an elaborate system of dikes and drainage mechanisms. The earliest forms of water management came about in the 12th century as the Dutch reclaimed, or drained and elevated, land covered by water. Although the vulnerability to flooding of The Netherlands's most important settlements and infrastructure made water management of paramount importance, it was not until the formation of the national water authority, the Rijkswaterstaat, during the late 18th century that water management was handled by a structured government authority. Prior to this time, the task of building dikes and waterways was left largely to individual villages and communities. Local reclamation efforts, at least until the 16th century, consisted of simple technologies, such as building dwelling mounds (higher ground) and basic dikes and polder systems to artificially manage the water flow. Technical innovation, fuelled mainly by trial and error, nonetheless occurred during this time as water management and land reclamation efforts grew to accommodate increased transportation and agricultural demands.

By the late 1930s and early 1940s, there was ongoing research to determine the strength of the next big storm surge and to establish the country's greatest vulnerabilities. The predictions revealed that the barriers in place at the time would not be sufficient and that greater protections would be necessary. These warnings went unheeded. With the disastrous flooding of 1916 having occurred decades earlier, the attention of the government and greater public was instead devoted to rebuilding the dikes that had been destroyed during World War II. On 1 February 1953, a strong storm in the North Sea, coupled with exceptionally high spring tides, led to a breach of the dikes protecting the southwest part of the country. The resulting flooding killed 1835 people. Approximately 200,000 hectares of land (535,575 acres) were flooded, and 26,000 homes and 300 farms were destroyed. The total damage amounted to about 5 per cent of the country's gross domestic product (GDP), a devastating blow to a nation recovering from World War II.

The 1953 flooding was one of the worst disasters ever to strike The Netherlands, and was the result both of an unusually powerful storm and an inability to conceive and prepare for it. The storm was of the strength and severity seen only once every 500 years. The Dutch infrastructure was simply not built in anticipation of such a fierce storm. The government deemed the risk too remote to justify the enormous expense required to raise and strengthen the then existing dikes. Once the storm surge reached The Netherlands, the elaborate system of dikes and pumps gave

way. Entire villages were submerged as water cascaded over the tops of the dikes. In all, 80 breaches were recorded, some of them 180 metres wide. It was later found that many kilometres of dikes needed serious repair or replacement. Just as the Dutch government failed to imagine a storm strong enough to overpower the dikes, so too did the Dutch people, whose unquestioning trust in The Netherlands waterways authority and the dikes led to low levels of preparedness for flooding and the inability to communicate the dangers either before or during the flooding.

The Delta Commission was formed shortly after the floods to determine a course of action. The commission put forth the Delta Act, passed by the government in 1957, which proposed shortening the coastline and called for the construction of a series of primary and secondary dams to strengthen flood defences. The Delta Project was the first comprehensive approach designed to address the vulnerabilities of the nation. The scope and technological vision of the project rank it among the greatest engineering feats ever accomplished by any country. There were two major technological accomplishments of this project. The first was the Eastern Scheldt Dam, which is one of the most highly regarded water management structures in the country. The construction of the dam was met with public protests over negative ecological consequences; but these were resolved through a willingness to incorporate a dialogue on the process surrounding the project. The second major technological accomplishment of the Delta Project was the Maeslant Barrier. Like the Eastern Scheldt Dam, the Maeslant Barrier was a technological breakthrough, capable of mitigating flooding during storms without hindering Rotterdam's commercial linkages to the North Sea.

Whereas the Delta Project aimed to control the waters with human-made barriers, new policies were implemented during the late 1990s that prioritized reducing risks rather than controlling and taming the rivers, as had been done in the past. Risks and vulnerabilities had increased over the years due to weakened river barriers and changes brought by urbanization in adjacent areas. The Netherlands government also realized that cooperation with countries upstream was essential in preserving their own cities and interests.

The Dutch case demonstrates, first and foremost, an ongoing process of institutional learning. The flood of 1953 came from the storm at sea, but later flooding during the 1990s was the result of river levels rising inland. The history of Dutch water management reflects the realization that the security of Dutch cities is contingent upon the management of ecological processes in the hinterlands (see also Box 8.10).

Implementing a national response plan for Hurricane Katrina in New Orleans, US

On 29 August 2005, Hurricane Katrina devastated New Orleans and much of the Gulf Coast of the US. The hurricane unleashed its fury on the Gulf Coast, sustaining maximum wind speeds of up to 195 kilometres per hour and a storm-eye radius of 48 kilometres. Although the storm lost

momentum prior to landfall, a category 3 storm still inundated New Orleans and much of the surrounding region. Within five hours of landfall, several sections of the levee system in New Orleans were breached and 80 per cent of the city was under water. Residents unable to leave the city prior to Katrina's landfall were either stranded in their residences, in temporary shelters, or died. Katrina's estimated death toll in the Gulf Coast region was approximately 1100 people and hundreds of thousands were displaced throughout the country.

Nine months prior to the hurricane, in December 2004, the Department of Homeland Security (DHS) authored the National Response Plan (NRP) that outlined a system of coordination between local, state and federal disaster responses. The plan defined the roles and responsibilities of each key player in the event of an emergency. However, as seen through the Katrina experience, there were major emergency preparation and coordination failures.

Post-Katrina investigations have clearly illustrated shortcomings in implementing the NRP, mostly at the federal (rather than the state and local) level. As was discovered by the Select Bipartisan Committee that investigated preparation for and response to Hurricane Katrina, the federal government failed to recognize the magnitude of Katrina's potential impacts, project future needs, fully engage the president and respond in a proactive and timely manner. The incorporation of the Federal Emergency Management Administration (FEMA) within the DHS and the coordination plan laid out in the NRP created an additional bureaucratic layer separating the president further from direct contact with FEMA and, consequently, with the individuals immediately involved with disaster management. Hence, key decisions became the responsibility of the secretary of the DHS, rather than the director of FEMA. The following are cited by the Bipartisan Committee as key actions that the DHS implemented too late or not at all:

- *The designation of an incident of national significance (INS).* As spelled out in the NRP, an incident of national significance is an impending event, which due to its potential magnitude, requires coordination between the three levels of government to mobilize and implement an effective response that will minimize the impact and help to save lives. As Hurricane Katrina was meteorologically well documented more than 50 hours prior to landfall, and the impact of a category 3 storm in the Gulf Coast region was also widely known, it should have

been considered as an INS. By establishing this disaster as an INS, a better-organized response plan could have been implemented at least two days prior to landfall.

- *The authority to convene the Interagency Incident Management Group (IIMG).* When an INS is declared, the IIMG, a federal-level multi-agency group, convenes. The IIMG acts as an advisory group to the Secretary of Homeland Security and refers information to the White House. The role of the IIMG is to provide the executive branch of the federal government with information pertaining to the coordination and management of a disaster, in addition to acting as a key strategic partner providing guidance to the secretary of homeland security and to the White House. The IIMG did not convene until Tuesday evening after landfall, clearly too late to coordinate a federal response.
- *The designation of the principal federal officer.* A principal federal officer was not designated by the DHS for Hurricane Katrina. This federal officer acts as the local focal person for DHS while an INS evolves. The officer's responsibility is to coordinate and facilitate all managerial responsibilities of the secretary of homeland security on the ground in addition to any federal support/response. Furthermore, an officer is expected to provide real-time insight into the changing events on the ground, in order for the federal government to better monitor the situation. Had a principal federal officer been in position, this officer would have been able to keep DHS and the additional partners at the federal level abreast of the rapidly evolving situation.
- *The invocation of the National Response Plan's Catastrophic Incident Annex.* The annex, which serves to shift the federal response from a reactive response to a proactive one, was not implemented. If the DHS had implemented the annex, the response to Hurricane Katrina would have been very different. The Bipartisan Committee further showed that the government rather responded in a reactive fashion that is not appropriate for disasters of Katrina's magnitude.

The experience of implementing the NRP in response to Hurricane Katrina clearly illustrates the challenges of coordinating disaster risk reduction activities at various levels within a federal system of governance. Where a national disaster management system is over-ridden with multiple levels of responsibilities and bureaucracy, preparedness and response efforts are at risk of being obstructed.