

Community Participation Reduces Vulnerability to Floods

Drought and conflicts in South Africa have triggered many people in rural areas to move to cities for personal and employment security. These people are most likely to settle in dried swampy areas, close to rivers and streams, or too close to industrial installations – places that local authorities consider “unfit” for human settlement.

These precarious living conditions cause several problems:

- ▶ Poor building materials (plastic sheeting, wood, cardboard, hardboard) catch fire quickly.
- ▶ No phones are available to call the Fire Department.
- ▶ Firefighting squads get lost on the way to the fire, because streets and addresses are not on township plans.
- ▶ During floods, muddy waters gush through the flimsy structures, carrying away household belongings and damaging the remaining ones.
- ▶ Health, education and other services are rarely available, creating further problems for already disadvantaged communities.

Fires, floods and winds devastate these communities regularly. (In 1994, for example, the South African Red Cross and the government assisted 50,000 people in informal settlements.) 1995 floods in Kwa-Zulu-Natal left thousands homeless; 150 people died when a river burst its banks, close to where informal houses were built.

Mandisa Kalako-Williams, head of operations and programmes for the South African Red Cross, believes there is only one realistic solution to make people in informal settlements less vulnerable to disasters: community participation that includes cooperation from local authorities and NGOs. “Because of the problems underlying our type of urbanization (poverty, unemployment), we can only hope for the success of an inclusive and inter-sectoral approach to manage disasters. This would bring together stakeholders such as authorities for housing, health, land issues, development agencies, and the affected community,” she says. “This is why the National Disaster Management Committee has such an important role to play in ensuring that the hazards abounding in this land do not become disasters, and that community participation is the only long-term solution.”

She cites examples of the budding process in South Africa where community participation is bringing results. For example, after numerous flood relief operations in an informal settlement in Port Elizabeth, residents, government officials and local NGOs agreed to relocate 500 affected households. They moved to higher land above flood level, clearing the area of bushes, paving streets, allocating bigger plots and using better building materials (galvanized iron).

Several organizations started community and household gardens for food security, and enough was produced for home consumption and sales. Development committees were set up to discuss community needs and aspirations. “The key to success,” she notes, “was community participation in identifying its own vulnerability to floods, coming up with solutions, and mapping a way forward.”

Another example is from Alexandra township, one of the oldest black settlements near Johannesburg, where summer floods occur yearly. Many homes are near the Juskei river, which collects water from various streams and pipes. The river banks are eroded by years of strong water flows, and so the river bursts its banks each year. Some vulnerable families have been moved, but others continue to build new shacks in the vacated areas.

The community is in the process, however, of recognizing its vulnerability to floods. Residents have introduced early warning systems: warning bells, door-to-door warnings, and repeated radio alerts. They are now learning first aid techniques and forming response groups. They have also identified a “safe house” where flood victims can be sheltered in case of emergency, while other arrangements are sought. “Most importantly,” says Kalako-Williams, “authorities and NGOs are consulting communities on relocating people to safer areas.”

Summarized from Mandisa Kalako-Williams, “Disaster and Urbanization South African Examples,” June 1995, paper provided to the IDNDR Secretariat. For more information, contact Mandisa Kalako-Williams, National Director, Operations and Programmes, South African Red Cross Society, PO Box 2829, Parklands 2121, 25 Erlswold Way, Saxonwold 2196 Ph 11 486 1313. Fax 11 486 1092

Community Education Reduces Wildfire Losses

If you were in Victoria on 16 February, 1983, you would remember what you were doing that day. In South Australia we were all shocked by the fierceness and tragedy of the bushfires which ravaged the Clare Valley, the Lower South-east and the Adelaide Hills,” said Barry Grear, an urban planner from the Department of Housing and Urban Development in South Australia. “Lessons learned from Ash Wednesday and applied around Australia are (partly) why fires around Sydney in 1994 were not as tragic as they could have been,” he added.

Southeastern Australia continues to be one of the most fire-prone areas in the world. The 1983 Ash Wednesday fire claimed 47 lives, over 2,000 homes, and cost about \$200 million. Hundreds of fires occur yearly in the region of Victoria, where many people in urban areas live near forests and are at risk

Local emergency management authorities believe that the most important lesson they have learned from these fires is that in-depth community education programmes make a difference in saving lives and property. Local authorities had already been sending safety messages through mass media channels, but they found that these messages alone didn't make enough of an impact. In addition, these measures were counterbalanced by journalists who reported fire disasters in a way that left the impression that survival was simply a matter of luck.

Consequently, the Country Fire Authority of Victoria developed a community education programme, Community Fireguard, to assist people to develop their own bushfire survival strategies. Community Fireguard used research showing that if people were well prepared, they could protect themselves and their homes. To relay the message, they avoided the “top-down” approach that they had been using, of an agency telling people what to do. Instead, the programme focused on identifying the most vulnerable areas in fire-prone communities. Next, they identified local contacts who could generate interest among residents and encourage them to meet

Using trained facilitators and videos, community residents met in someone's home (rather than a public hall). Through this personalized approach, residents came to realize that they are responsible for their own safety, and needed to develop their own fire survival strategies. Only then did the Community Fireguard facilitators work with the groups to enable them to choose the most appropriate strategies, and develop them for their own use.

In some areas groups focus on developing local warning systems. Others work with land management agencies to ensure that buffer zones are maintained. Some groups have



Photo credit: John Findall/Country Fire Authority of Victoria

In forests near urban areas, community members clear away brush and hazardous materials.

conducted street cleanups, equipment training sessions, or prepared emergency plans.

Since the Community Fireguard programme has been underway, several groups have experienced major wildfires. Local strategies have proved effective in preventing losses and mobilizing people to protect themselves and their property. Melbourne University is currently evaluating the programme to assess its effectiveness in changing attitudes and behaviour among residents in high wildfire risk areas

Adapted from Alan Rhodes, "Community Education to Reduce Losses from Wildfire" June 1996, programme summary for the IDNDR Secretariat courtesy of the IDNDR Australian Coordination Committee

Additional sources

Barry Grear, "Bushfire reduction through planning policy," in Hazard-Wise Saves Lives, ed. DI Smith. Australian National University, Centre for Resource and Environmental Studies, 1996

Pamphlets about Community Safeguard, Country Fire Authority of Victoria

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New Riverside Project Changes Local Attitudes

Floods strike urban areas more frequently than any other natural disaster. Asuncion, Paraguay's capital, is flooded each year along the coastal lowlands of the Paraguay River. Embankments have not been an efficient solution, since poor people continue to settle along the riverside – even though floods sweep away their belongings almost every year.

The Asuncion local government has just adopted an ambitious programme, "The Coastal Fringe," which aims to change attitudes and reduce land use of the city's most vulnerable coastal areas by the year 2000.

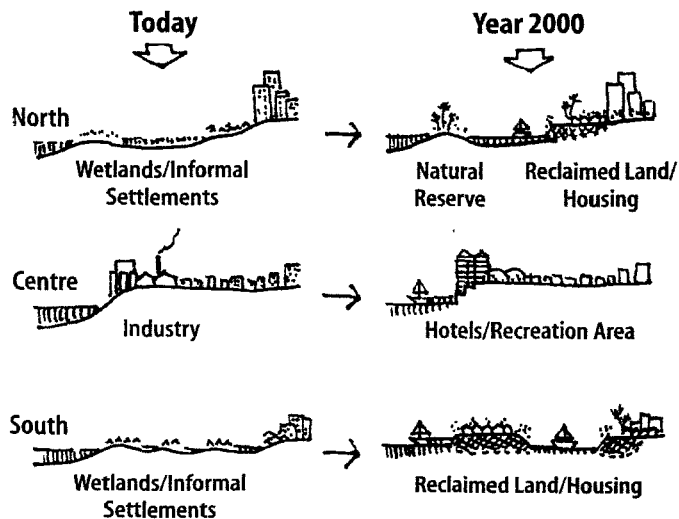
While there is still long way to go, the plan is in place and solutions are in sight. The new urban development plan takes into account vulnerabilities, risks and historic values of the city. This plan was developed with active community participation from risk areas. A household census was carried out to get better socioeconomic and population data upon which to base decisions. Workshops in high risk areas concentrated on solutions that are acceptable for residents and feasible for the city government. A loan from the Inter-American Development Bank is being negotiated to implement the project. So far, the project has generated a spirit of cooperation among public, private and community organizations in a way that has never seen before in Paraguay. Workshops and public information campaigns

has already influenced attitudes and encouraged partnerships within the community.

The project has four strategies:

- ▶ **Integrate the city and river in a sustainable environmental solution.** This includes land fill in some areas and sanitary recovery in others (garbage solutions, sewage). A coastal path and parkway is being built to avoid settlements in these areas and to give the population access to the beauty of the riverside.
- ▶ **Improve living conditions in the flooded areas,** including new services and financial credit for the population to resettle on the landfilled areas.
- ▶ **Guarantee ecological sustainability** by creating more green areas (nature reserves and parks).
- ▶ **Generate jobs for those who have resettled from risk areas,** by using local manpower to implement the Coastal Fringe project, promote locally produced materials and products, and provide access to credit.

Asuncion Waterfront



Adapted from papers provided by Gonzalo Garay, Municipality of Asuncion, and Helena Molin Valdes, IDNDR Regional Office for Latin America/Caribbean. For more information, contact the IDNDR Regional Office or Arch. Gonzalo Garay Z., Director, Office of Urban Development, Municipality of Asuncion, Mcal. Lopez y Cap. Victoriano Bueno, 4th floor, Block A, Asuncion, Paraguay. Ph (595-21) 610563 Fax (595-21) 610591

Adapted from Documentos Ambiente, No 3 Serie "Construccion de la ciudad", CEPA Foundation, 1995

Safe Houses for Hurricanes at Low Cost

If community authorities have to prioritize, lifeline structures such as hospitals, utilities and bridges deserve special protection from disasters. But what about measures to protect individual homes? Low-income housing in urban, disaster-prone areas is often at risk to disasters due to bad siting and/or inappropriate construction.

Building codes taking disasters into account are an important start, but they are not enough: builders may ignore the codes, insurance companies don't always provide incentives to build safely, and established housing often has been built without taking disasters into account. What's more, building codes are often too sophisticated for "non-engineered" homes.

One way to ensure safe housing at low cost is by retrofitting (adjusting the building to make it resistant to winds, ash, tremors, etc.)

In the Caribbean, one inexpensive, successful example of retrofitting to protect homes from hurricanes is being carried out jointly by the Organization of American States (CARITAS Antilles) and the National Development Foundation of Dominica. In 1994, the two NGOs trained 100 builders, who retrofitted over 50 homes in Dominica. The total cost per house for a complete retrofit was \$200 to \$700 (building materials and construction costs). The project provided loans of \$185 to \$500. Other costs included the training session in safe construction techniques.

All of the retrofitted homes withstood the impact of Hurricane Marilyn in 1995, and at least one was used as a hurricane shelter by residents.

Local financial institutions are now providing funds to retrofit more houses. The project is now being implemented in Antigua by Antigua's National

Development Foundation and the Caribbean Council of Churches. Finally, insurers in Dominica have indicated their willingness to adjust insurance rates for those individuals who retrofit their houses.

This is part of a wider OAS Caribbean disaster mitigation project funded by USAID. For more information contact Crisabel Charles, National Development Foundation, Dominica, phone 309 448 3240 fax 309 448 862.

Source: Keith Ford, OAS Caribbean Disaster Mitigation Project, program summary provided to the IDNDR Secretariat, May 1996.



NATIONAL DEVELOPMENT FOUNDATION OF DOMINICA

Damaged house in Bangladesh, another cyclone-prone country.



NATIONAL DEVELOPMENT FOUNDATION OF DOMINICA

Workers in Dominica secure the roof before Hurricane Marilyn in 1995.

Emergency Planning: Key to Smooth Evacuation During Floods

In December 1993, heavy rains in France, Belgium and the Netherlands caused flooding in the southern part of the Netherlands. Thirteen months later, in February 1995, a new flood struck an even larger area in the south. This led to the evacuation of 250,000 people, the largest evacuation in the Netherlands since World War II.

Each emergency situation requiring evacuation is unique. In all mass evacuations, however, the risk of panic and chaos exists. The element in this Dutch case which stands out as a model for others is its emergency plan: it stressed coordination among municipal services, and placed a high emphasis on a communications strategy.

Why the Evacuation Succeeded

As in any emergency, successes were due to a mix of good planning, good implementation, improvisation and some luck. Among the factors that led to a smooth evacuation

- ▶ **An updated, approved emergency plan for the city and region** Nijmegen developed an emergency plan in early 1994, right after the December 1993 flood. It was approved in early 1995, weeks before the second flood. The plan served as a model for other nearby areas.
- ▶ **Tailored evacuation plan and successful first evacuation** Nijmegen police developed a sub-plan specifically for evacuation as soon as 1995 high water levels approached those of 1993. 60,000 citizens in the Nijmegen area were the first to evacuate; the successful operation gave confidence to others in the province.
- ▶ **Integrated communications strategy** Communications strategies were part of the emergency plans developed in 1994. Steps had been taken so that information officials were part of the decision-making crisis management team. Good planning ensured that the public and press were informed on a regular basis about the threat of flooding and when and why evacuation was needed. As a result, about 75% evacuated at least 24 hours before the deadline.
- ▶ **Collective memory.** People still remembered the 1993 flood, in which cattle drowned, utilities started to fail, and some businesses flitted with bankruptcy.
- ▶ **Slowly rising waters.** The water rose visibly over a period of several weeks in Europe, giving people time to act without being completely rushed. Before their own waters rose perilously high, people saw large parts of Koblenz and Cologne, Germany, under water. People moved furniture in their homes, and arranged tempo-

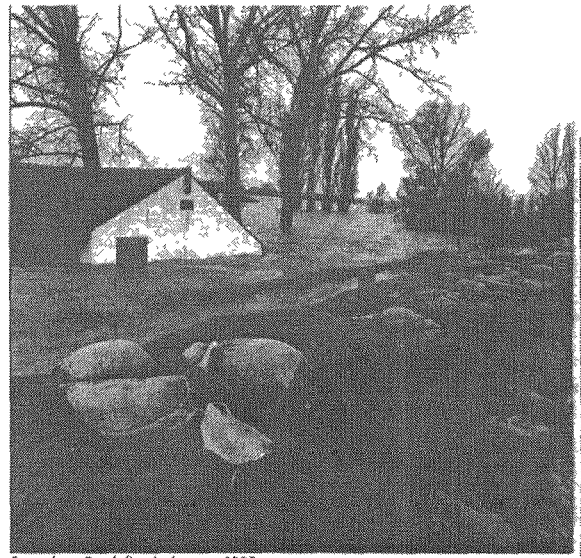
rary shelter with friends and relatives. Only 3% of those evacuated relied on public transportation and shelter (government plans were for 10%) and less than 3% required public temporary shelter.

- ▶ **Cultural homogeneity.** Virtually all inhabitants spoke the same language, avoiding potential linguistic or cultural misunderstandings in a crisis situation.

Sources: *The Netherlands, 2nd Edition*, *Cooperation of Local Authorities*, Coping with a Flood (Nijmegen), 22 April 1996.

1. "Communication with the Public During the Flood in Nijmegen 1995" John De Vroom, *Public Relations in Nijmegen, City of Nijmegen, Postbus 9105, 6500 HC Nijmegen, tel. 31-0243-292579, fax. 31-0243-292378.*

2. "Mass Evacuation During the Dutch Floods" M. J. Beenen and M. van Oort, *Public Relations in the City of Nijmegen*, 1996, 156-160, 161-162.



Scene from Dutch floods, January 1995.