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HAZARD AND DISASTER MANAGEMENT                              APRIL 1991
EDITORIAL

This is the seventh issue of what was formerly entitled The Newsletter of the International Hazards Panel. Since the publication of the first issue in June 1987, John Handmer (Centre for Resource and Environmental Studies, the Australian National University, Canberra) and Dennis Parker (with the assistance of Paul Thompson at Enfield and Wendy Chan in Canberra) have been editors. Issues 3 and 6 were edited and produced in Canberra and the remaining issues were edited and produced in Enfield.

The seventh and subsequent issues have a new title - HAZARD AND DISASTER MANAGEMENT - reflecting an agreed and amicable loosening of formal links with the International Hazards Panel based in London and our perceived need to broaden the audience and to encourage contributions from a larger number of practitioners, academics and others engaged in one way or another in hazard and disaster management.

During the coming year we, the editors, will be seeking closer links with research and professional groups in different parts of the world in order to establish an international editorial panel and a broader readership base. We welcome hearing from groups who share our interests and aims of advancing the theory and practice of hazard and disaster management, and we welcome proposals for more formal association.

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HAZARD AND DISASTER MANAGEMENT
APRIL 1991
Emergency and disaster planning and management in the United Kingdom: will the 1990s be any better than the 1980s?

Dennis Parker, Head of School of Geography and Planning at Middlesex Polytechnic.

Introduction

During the 1980s the United Kingdom experienced an unprecedented sequence of quasi-natural, technological, social and transportational incidents, accidents and disasters. So far this sequence has continued into the 1990s (Table 1). These events were more frequent and of much greater impact than expected by the public, policy-makers and politicians. In some cases there has been widespread shock and disbelief and in the wake of accidents and disasters there has been rising public and media criticism of, and concern about, the performance of systems for disaster prevention, and emergency planning and management. As well as increasing legal pressure on corporations through advances in the case of corporate responsibility for much greater attention to safety, there has been mounting pressure upon central government for remedial action from the disaster and emergency planning and management professions. These incidents, accidents and disasters, and the well publicised series of subsequent inquiries, have raised a host of serious questions about disaster management including emergency planning and management in the United Kingdom. These questions include the adequacy of hazard assessments, hazard forecasting systems, disaster warning dissemination, training, safety laws and procedures, inter-agency coordination, and risk communication procedures (Handmer and Penning-Rowsell 1989). These questions extend also to the responsibility and liability for public safety and the financial capability, legal powers of the peacetime emergency planning agencies, and the role of the central government in disaster management.

Definitional issues

The definition of hazards, accidents, incidents, emergencies and disasters has been the subject of much debate. "Hazard" is usually viewed as a "situation that in particular circumstances could lead to harm" (Royal Society 1983, 22), and Hewitt (1983) emphasises that "hazard" refers to the potential for damage that exists only in the presence of a vulnerable human community. "Incidents" usually refers to accidents and emergencies of a minor type, although in the United Kingdom the emergency services distinguish "major incidents" according to the perceived scale and severity of the event. "Accidents" and "emergencies" are both quantitatively and qualitatively different to "disasters". They involve different numbers of people and damage. An accident is an event which can be handled by local resources, whilst disasters cause more disruption and, at least temporarily, exceed the

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capability of local resources. In disasters the emergency and rescue services might themselves be involved as victims, whereas in accidents this is not usually so. Disasters usually attract hordes of national and international reporters whereas accidents and emergencies mainly only attract the local press (Table 2) (Auf der Heide 1989, 54).

A "disaster" decade

Thirty six "major incidents" including road, rail and air crashes, ship sinkings, terrorist bombings, fires, riots, explosions, and a mass shooting, occurred in the United Kingdom, or on sea routes to Britain, between January 1984 and December 1988 (Walsh 1989). Selected incidents, accidents and disasters are listed in Table 1 which includes the period to March 1990. In terms of loss of life the most serious of these incidents were the 1988 terrorist bombing of a PanAm jet over Lockerbie in which 270 passengers died and 200 were rendered homeless, the 1988 Piper Alpha oil rig explosion in the North Sea in which 156 people died, and the 1987 Zeebrugge ferry sinking in which 180 people died and there were 402 casualties. Included is the Chernobyl nuclear reactor accident in the Ukraine which led to variable radiation contamination of large areas of Britain and to widespread criticism of warnings and response from central government, and the so-called "Great Storm" of October 1987 in which unpredicted hurricane-force winds led to the deaths of 19 people and the single largest-ever insurance industry payout (Handmer and Parker 1989). This spate of accidents continued after December 1989 with the River Thames "Marchioness" pleasure boat sinking (56 drowned), the 1989 Hillsborough football stadium disaster in which 95 people were crushed to death, and the March 1990 "poll-tax" riots in central London in which over 150 people were injured. In recent years the most common types of accidents and disasters have been riots, disasters affecting football grounds, and transportation disasters (especially rail crashes, boat sinkings and accidents involving aircraft) and terrorist bombings.

Central government response

During 1988, and in response to growing public concern about the frequency of accidents and disasters during the 1980s, the Home Secretary circulated a public consultation document on civil emergencies in Britain (Home Office 1988). Many individuals and organisations submitted views to the Home Secretary on the organisation of disaster planning and management, and in June 1989 central government published its "Review of arrangements for dealing with civil emergencies in the United Kingdom" (Home Office 1989). Despite the misleading title of this document it includes arrangements for dealing with disasters.

A major cause of concern amongst the disaster and emergency planning and management profession in the United Kingdom is that whilst central government expects the response to accidents, emergencies and disasters to come primarily from local agencies, including the
local authorities, these authorities do not have a statutory duty to make plans for emergencies and disasters (Sibson 1990). Although statutory emergency planning duties have not been entirely ruled out by the Home Secretary, the 1989 "Review" did nothing to alter the position of local authorities. Thus, during a period when local authorities finances have come under great pressure because of central government public expenditure constraints, local authority emergency planners find it difficult to successfully argue for budgets for emergency planning when the local authority has no statutory duty for such. Consequently standards, including the degree to which preparations and plans for peacetime emergencies are made, vary greatly between local authorities.

Much of the emphasis in United Kingdom emergency planning has been upon wartime planning or "civil defence" rather than planning for "civil" or "peacetime" emergencies. This was modified in some ways by the 1989 "Review" including the renaming of the Civil Defence College to the Emergency Planning College. However, funding arrangements remain the same: civil defence is grant-aided by central government whilst civil emergency planning must be funded by local authorities.

One of the main consequences of the "Review" was the appointment of a Civil Emergencies Advisor and since 1989 the Home Secretary has received his assistance. His task is to assist those with operational responsibilities to achieve the highest standards of coordination and compatibility between their contingency plans.

The 1990s: another disastrous decade?

Whether or not the spate of accidents and disasters that affected the United Kingdom during the 1980s, and which appears to have been continued into the 1990s, indicates a genuine increase in the frequency of occurrence of such events, or simply a clustering of such events to be expected from time to time, remains to be seen and researched. Whether or not we will witness a similar or worse spate of accidents and disasters during the 1990s also remains to be seen. Some believe that United Kingdom society is not organised in a way which reduces over time our vulnerability to disasters: indeed we may becoming increasingly vulnerable over time because of some pervasive cultural, organisational and technological characteristics and trends (see Horlick-Jones 1990).

An encouraging feature of United Kingdom emergency planning and management is that there is a growing, and an increasingly organised, constituency advocating improved disaster management including more effective arrangements for emergency planning and management. The emergency planning profession now has an annual conference based at the University of Bradford where academics, practitioners and professionals are able to openly discuss central issues. Moves are being made towards establishing further professional qualifications for emergency planners in the United Kingdom.
However, there are strikingly different views about the role of central government in emergency planning and management. In England and Wales the Home Office is emerging as the most likely coordinating agency for emergency and disaster planning and management. For sound reasons central governments policy is that all central government departments have a role in managing emergencies which are closest to their activities, and that local agencies have the principal role in responding to emergencies and disasters. However, many emergency planners working in local agencies expect central government to give them a statutory duty and to play a much higher profile in organising and coordinating emergency planning and management. Currently the linkages between central, regional and local agencies are perceived as highly problematic as are the links between regional and local agencies and the European Community where more disaster management initiatives are likely to originate in the 1990s.

1990 marked the commencement of the United Nations designated International Decade for Natural Disaster Reduction (IDNDR). Many within the United Kingdom are quite rightly concerned about initiatives and measures to reduce the impact of major disasters in the underdeveloped world, but also let us not forget the challenges which exist on our own doorstep.
References


Table 1 Selected major accidents and disasters affecting Britain (1980 to 1990)

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Type of accident or disaster</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>December</td>
<td>Ferry sinking</td>
<td>European Gateway: 6 lives lost.</td>
</tr>
<tr>
<td>1984</td>
<td>May</td>
<td>Explosion</td>
<td>Abbeystead, Lancashire, in water treatment works receiving visitors: 17 died and others injured.</td>
</tr>
<tr>
<td>1985</td>
<td>May</td>
<td>Fire</td>
<td>Major fire at Bradford City football ground, Yorkshire, in which 56 people died and many were injured.</td>
</tr>
<tr>
<td>1985</td>
<td>August</td>
<td>Aircraft fire</td>
<td>Aircraft caught fire during take-off at Manchester airport: 55 died.</td>
</tr>
<tr>
<td>1985</td>
<td>September</td>
<td>Riots</td>
<td>Handsworth, Birmingham. 2 died and 137 injured, property damaged.</td>
</tr>
<tr>
<td>1985</td>
<td>October</td>
<td>Riots</td>
<td>Broadwater Farm, Tottenham, over 250 injured, 1 death, property damaged.</td>
</tr>
<tr>
<td>1986</td>
<td>April</td>
<td>Radiation</td>
<td>Chernobyl nuclear reactor accident, Ukraine, USSR.</td>
</tr>
<tr>
<td>1987</td>
<td>March</td>
<td>Ferry sinking</td>
<td>The Herald of Free Enterprise ferry capsized shortly after leaving Zeebrugge harbour in Belgium. The ferry carried many British and was bound for Britain. Nearly 200 died and many were injured.</td>
</tr>
<tr>
<td>Year</td>
<td>Month</td>
<td>Type of accident or disaster</td>
<td>Details</td>
</tr>
<tr>
<td>-------</td>
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</tr>
<tr>
<td>1987</td>
<td>August</td>
<td>Shooting</td>
<td>Lone gunman shot dead 16 people and wounded 16 others at Hungerford.</td>
</tr>
<tr>
<td>1987</td>
<td>October</td>
<td>Storm</td>
<td>Hurricane force winds swept Britain following failure of Meteorological Office to accurately forecasted the storm. Over 20 people killed. Huge insurance payout for damage incurred.</td>
</tr>
<tr>
<td>1987</td>
<td>November</td>
<td>Fire</td>
<td>Kings Cross underground station, London. 30 people died, over 50 others were injured.</td>
</tr>
<tr>
<td>1987</td>
<td>November</td>
<td>Terrorist bombing</td>
<td>Enniskilllin, Northern Ireland. 11 died and over 50 injured.</td>
</tr>
<tr>
<td>1988</td>
<td>July</td>
<td>Oil rig explosion</td>
<td>Oil rig Pipa Alpha exploded in North Sea, 167 people killed.</td>
</tr>
<tr>
<td>1988</td>
<td>July</td>
<td>Water supply pollution accident</td>
<td>Lowermoor water treatment plant near Camelford. Aluminium sulphate tipped into wrong tank. 20,000 people affected with a range of short and possibly long term health effects.</td>
</tr>
<tr>
<td>1988</td>
<td>August</td>
<td>Terrorist bombing</td>
<td>In Omagh, Northern Ireland. 8 died and 21 injured.</td>
</tr>
<tr>
<td>1988</td>
<td>December</td>
<td>Rail crash</td>
<td>Three trains collided near Clapham railway station in London. 34 people died and many were injured.</td>
</tr>
<tr>
<td>1988</td>
<td>December</td>
<td>Terrorist bombing</td>
<td>PanAm jet exploded over Lockerbie, Scotland killing all 270 passengers and crew and 11 people on the ground.</td>
</tr>
<tr>
<td>Year</td>
<td>Month</td>
<td>Type of accident or disaster</td>
<td>Details</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>------------------------------</td>
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</tr>
<tr>
<td>1989</td>
<td>January</td>
<td>Air crash</td>
<td>Aircraft crashed onto M1 motorway near Kegworth in Leicestershire. 39 people died at the scene and 70 were seriously injured (one died later).</td>
</tr>
<tr>
<td>1989</td>
<td>January</td>
<td>Crowd crush</td>
<td>Hillsborough Stadium in Sheffield, Yorkshire. 95 people died and 400 received hospital treatment.</td>
</tr>
<tr>
<td>1989</td>
<td>August</td>
<td>Pleasure boat sinking</td>
<td>The pleasure boat the Marchioness sank in the River Thames in London after colliding with another vessel. 56 people died.</td>
</tr>
<tr>
<td>1990</td>
<td>February</td>
<td>Storm</td>
<td>Hurricane force winds swept Britain, on this occasion accurately forecasted by the Meteorological Office. Over 40 people killed and massive damage incurred.</td>
</tr>
<tr>
<td>1990</td>
<td>January/February</td>
<td>Flood</td>
<td>Thames valley especially Maidenhead. Over 200 properties seriously flooded for over one week. Large property damage incurred.</td>
</tr>
<tr>
<td>1990</td>
<td>February</td>
<td>Flood</td>
<td>Sea wall at Towyn, North Wales breached by high tide and storm surge. Warning issued late. Many elderly evacuated and large amount of property damaged. Many evacuees still not returned to their homes many months after the event.</td>
</tr>
<tr>
<td>1990</td>
<td>March</td>
<td>Riots</td>
<td>Hundreds rioted in central London over the community charge (poll tax). Several died and many injured.</td>
</tr>
</tbody>
</table>
### Table 2   Differences between routine emergencies and disasters  
*(Auf Der Heide 1989, 54)*

<table>
<thead>
<tr>
<th>Routine emergencies</th>
<th>Disasters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction with familiar faces</td>
<td>Interaction with unfamiliar faces</td>
</tr>
<tr>
<td>Familiar tasks and procedures</td>
<td>Unfamiliar tasks and procedures</td>
</tr>
<tr>
<td>Intra-organisational coordination needed</td>
<td>Intra- and inter-organisational coordination needed</td>
</tr>
<tr>
<td>Roads, telephones and facilities intact</td>
<td>Roads may be blocked or jammed, telephones may be jammed or non-functional facilities may be damaged</td>
</tr>
<tr>
<td>Communications frequencies adequate for radio traffic</td>
<td>Radio frequencies often overloaded</td>
</tr>
<tr>
<td>Communications primarily intra-organisational</td>
<td>Need for inter-organisational information sharing</td>
</tr>
<tr>
<td>Use of familiar terminology in communicating</td>
<td>Communication with persons who use different terminology</td>
</tr>
<tr>
<td>Need to deal mainly with local press</td>
<td>Hordes of national and international reporters</td>
</tr>
<tr>
<td>Management structure adequate to coordinate the number of resources involved</td>
<td>Resources involved often exceed management capacity</td>
</tr>
</tbody>
</table>
The work of the National Poisons Unit

Virginia Murray, National Poisons Unit, Guys Hospital, London

Introduction

The chemical and pharmaceutical industries have undergone massive expansion over the last four decades, and at least 70,000 chemicals are available in the United Kingdom alone. Chemical releases occurring during manufacture, processing, storage and transport, have exposed humans to chemicals with acute or chronic health effects. As a result, the emergency planning and the management of chemical incidents have become increasingly important issues for Poisons Centres.

What are poisons centres?

Poisons Centres have been established in most industrialised countries and in many developing countries during the last thirty years, following a growing awareness of the potential immediate and long term risks to the community from the availability and use of chemicals.

Their function, as defined by the International Programme on Chemical Safety (WHO/ILO/UNEP), 1990, is to provide toxicological information, laboratory and medical services to help in the diagnosis and management of suspected poisoning. This includes, in addition to their traditional roles and responsibilities, "toxic alert" and toxicovigilance¹.

National Poisons Unit

In 1962, an official report of the Ministry of Health was published under the title "Emergency Treatment in Hospital of Cases of Acute Poisoning" (HMSO, London, 1962). One of its recommendations was that "an information service on poisoning should be set up with central arrangements for co-ordination". This recommendation was implemented in 1963 and the service received some 3,000 calls in its first twelve months.

¹ toxicovigilance is the identification, investigation and evaluation of the various toxic risks in the community with a view to taking measures to reduce or eliminate these risks (IPCS/WFACTPCC/CEC, 1989)
The National Poisons Unit (NPU) has since developed and expanded and now provides toxicological laboratory and clinical services in addition to the information service, all of which operate on a 24 hour basis. The NPU collaborates with Regional Poisons Information Services in Belfast, Cardiff, Dublin and Edinburgh, and centres at Birmingham, Leeds and Newcastle. Currently, however, these centres are less well resourced than the NPU.

The number of enquiries to the Units information service has risen dramatically and last year 76,531 emergency telephone enquiries were received. Recent figures show that 82% of enquiries come from hospitals, particularly from accident and emergency departments, 10% from general practitioners, 1% from veterinary surgeons, 1% from emergency services, with less than 1% from other poisons centres. Other sources such as occupational health services and government agencies together make up the remaining 5% of enquiries.

The information and advice provided by information staff and, where relevant, the medical staff take into account factors such as the age of the patient, the route of exposure, the dose and the toxic effect. The information service has access to many specialist toxicology databases compiled both by the Unit and by other centres of expertise, which contain evaluated information on toxic and non-toxic substances and products, including:

* drugs
* household products
* industrial products (and intermediates)
* agrochemical products
* plants and venomous animals.

The analytical service undertakes urgent, rapid analysis for toxicological diagnosis and management, non-urgent analyses for diagnosis and monitoring of body burden and effects of toxins, and for research, using samples collected from biological, environmental and suspect material sources.

The clinical service works with the information and laboratory services and is also concerned with the diagnosis and management of acute and chronic poisoning cases. The expansion of the clinical work to include the pro-active toxicological investigation of chemical incidents has occurred only recently, following the meeting discussed below.

The NPU's principal research aims to improve the quality of human toxicological information, and is undertaken either by special project work or by analysis of data collected during routine assessment of cases and incidents.

However, these aims are currently being revised in response to the Guidelines produced by the International Programme on Chemical Safety (1990), which emphasised the need for Poisons Centres to expand their roles and responsibilities to include "toxic alert" and
toxicovigilance. To determine the type of response such an activity requires, the NPU organised a meeting on "Major Chemical Disasters: Medical Aspects of Management" in collaboration with the Section of Occupational Medicine, Royal Society of Medicine.

Major chemical disasters: medical aspects of management

The medical management of chemical incidents is fundamental to the assessment of incidents on humans, but has been given little attention in comparison to planning and response procedures organised by emergency and other non-medical services (Taylor et al 1990).

The meeting set out to identify the current state of knowledge in the planning and management of chemical incidents, whilst recognising where other agencies have a bearing on the medical aspects of management. The papers covered such issues as:

* problems identified in previous incidents and legislative response
* likely causes of future incidents and their environmental impact
* immediate response by emergency services, accident and emergency departments and poisons centres
* planned response by occupational health services, local authority emergency planning officers and civil defence, using the nuclear power industry example to show the value of communication
* problems of definition, toxin identification and risk assessment
* medical management of inhalation, ophthalmic and skin contamination and ingestion
* epidemiological follow-up
* psychological impact

Many important issues were raised and these are elaborated in the summary of the conclusions and recommendations of the meeting (see below). Some of the issues most relevant to the work of poisons centres are discussed, including assessment of the chemical(s) involved in an incident, medical preparedness for the emergency management of cases affected by an incident, and the roles and responsibilities of poisons centres in the event of a chemical incident.

Chemical assessment

In order to make a realistic assessment of risk to humans exposed in a chemical incident, many speakers found it necessary to consider a variety of issues including the nature of the chemical, the exposure conditions and site factors.
Previous human exposures provide the most relevant information on the toxicity of a chemical (Baxter 1990, Volans 1990), but for most chemicals there is a little or no information available on their direct toxicity to man (Bridges 1990). Storage and mixture factors complicate assessment (Jerrom 1990). Information on the persistence and degradation of the chemical, including factors such as advocate/bulk dilution, and dispersive, diffusion and partition processes, and chemical, biological and temperature degradation are all important (Graham-Bryce 1990).

Information on quantity and duration of release, including the dispersal mechanisms and release location, are essential to provide probable exposure period with route of exposure. Meteorological influences, such as winds, rain, temperature variation, atmospheric stability, fluvial and tidal flow, need to be considered in conjunction with topographic and population distribution data (Stealey 1990). Valuable information is provided by animal sentinels and from environmental assessment.

The totality of this information can then be used to define the size of the population at risk with an assessment of the severity of risk. However, little information is usually available at the time of the incident (Volans 1990).

Medical preparedness

Most emergency plans suggest that once a patient has reached a hospital and has been given medical advice, little more action needs to be taken. However, standard medical practice does not provide many medical and paramedical staff with the experience and training needed for managing patients after chemical incident exposure.

Various professional associations have started to review the problem, and some have prepared guidelines such as the Guidelines on the Early Management of Contamination by Toxic Chemicals (CSA 1988). Using the standards contained in these Guidelines, Dallos (1990) reviewed ten of the major accident and emergency departments and reported that the arrangements for the reception and management of victims of toxic hazards is variable. For instance, she found that:

* only four departments had a hospital protocol for reception, isolation, decontamination and treatment, and six had none;

* only four had protective clothing and breathing apparatus for on-site use, five had none and one did not go out to site;
none of the ten had decontamination facilities as set out in Health Building Note 22 (1986). However, eight departments did have a shower room for one or two well patients, but one hospital had none and one hospital used to have one but now it was allocated to a different purpose.

When asked "Do you feel confident to treat toxic gas inhalations, ophthalmic and dermatology complications?", all ten stated that they were confident, even though not one of the accident and emergency departments were properly trained or equipped.

Other problems exist including the dilemma that the inhalation of toxic chemicals can result in respiratory effects being delayed for six to twenty-four hours (Edwards 1990). However, some doctors and hospitals are not prepared to admit for observation apparently well patients who may develop delayed respiratory effects. The psychological impact of a disaster causes acute and chronic health effects, leading to demands on health care which may be twice the number of the initial casualty list (Thompson 1990), yet little thought has been given to the initial provision of support that could reduce long term care.

The roles and responsibilities of poisons centres

The International Programme on Chemical Safety (WHO/ILO/UNEP) has targeted the development and or strengthening of poisons centre facilities as one of its principal activities in the last few years (Mercier 1990). In several countries, poisons centres are already considered to be essential scientific resources to assist those managing chemical incidents, and currently, they are being developed to fulfil this need in other countries.

The principal roles of a poisons centre during an incident should include the assessment of the toxic incident characteristics, information dissemination, and provision of advice on such issues as decontamination, treatment, case registration and follow-up (Kulling 1990). Throughout the incident the centre should continually update and expand information about the nature of the incident as it develops. Sometimes this should be done via a poisons centre member, often a doctor, attending the site or hospital immediately responsible for managing cases (Tong 1990).

Poisons centres should also play a part in planning for incidents by, for example, developing and expanding their databases of chemical substances and products and their emergency stores of antidotes, and by appropriate education and training.

The resources needed for such activities require planning and organisation, and currently few poisons centres are properly prepared to undertake these responsibilities.
Conclusions and recommendations

The meeting concluded that medical management of chemical incidents should be a central issue in the planning and response phases (Taylor et al 1990). It recommended that a working group should be created under the aegis of the Royal Society of Medicine, which should consider ways of achieving:

* the development of links between national agencies and professional groups, the development of definitions of roles and responsibilities of each and the publication of this data. These agencies and professional groups should include academic and non-academic institutions, emergency services, government, health professionals and professional bodies, industry, poisons information services and support services;

* the promotion and creation of new links with international organisations such as the International Programme of Chemical Safety, the World Health Organisation, the International Labour Organisation and the United Nations Environment Programme;

* the feasibility of developing a centre or centres to provide contacts, information databases, information and advice, toxicological and medical support, training resources, follow-up of exposed populations and possible toxic effects on the environment and evaluation of management of incidents.

Within the Working Group, the NPU has taken a lead in responding to these conclusions and recommendations, and participation in this meeting and others is vital to promote the changes that have become so necessary.
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HAZARD AND DISASTER MANAGEMENT APRIL 1991
Aral sea collaboration: dealing with the threat of an ecological disaster

Edmund Penning-Rowsell, Dean of Social Science at Middlesex Polytechnic and Head of the Flood Hazard Research Centre

Edmund Penning-Rowsell visited Kazakstan at the invitation of the Rector of the Kazak State University in November 1990 to begin discussions about collaborative research. The prospect is for collaboration between the University, through its Faculty of Biological Sciences, and the Kazak Academy of Sciences (with its Institute of Geography), in research on the shrinking of the Aral sea (figure 1).

In Soviet Central Asia the threatened ecological disaster caused by the shrinking of the Aral Sea is a highly political problem. Relations between the Republics of Kazakstan and Uzbekistan have never been easy, and the Kazaks feel that the over-exploitation of the river waters of the Amu Darya river for monoculture cotton growing have so severely limited inputs to the Aral sea that it is shrinking at an alarming rate.

The sea was once the fourth largest inland sea in the world, supporting a thriving fishing industry and many species of animal and plant life. Now the Sea is ranked only sixth in the world and has become highly saline as a result of reduced inputs from its feeder rivers.

The effect is that now only four of the original 24 fish species and 38 of the original 173 animal species remain. Fishing catches have virtually ceased and the reduction in area covered by the lake is having an adverse effect on the climate of surrounding areas (by increasing climatic extremes).

Research collaboration will be explored further in a meeting in London in April 1991 and a further visit from British scientists to Alma Ata, capital of Kazakstan, in the autumn. The focus of the research is likely to be the institutional constraints on checking the pace of environmental deterioration, and an analysis of the economic, legal and administrative instruments that could be used for promoting improvements. This is a long term research project and will sit alongside ecological and water resources engineering projects sponsored by the Soviet Academy of Sciences and the UNDP.
Figure 1  Aral sea

Aral Sea facts
- Shores receded 800kms leaving 27,000 sq.kms dried seabed
- Sixth largest lake in the world from being the fourth largest
- Projected volume in 2000 10% of 1960 levels
- Projected salinity in 2000 500% of 1960 levels
- Salinity of remaining water 27%, from 10%
- Lost 600 cu.km of water in 25 years
- Only four of 24 fish species remain
- Four-fifths of surrounding forests have disappeared
- Only 38 of 173 animal species remain

The changing profile
- 1960
- 1971
- 1976
- 1987
- 2000?

Dennis Parker, Head of School of Geography and Planning, Middlesex Polytechnic

This publication containing 48 contributions and workshop summaries was generated following the Association of State Floodplain Managers (ASFPM) largest ever annual conference at which 360 floodplain managers from federal, state and local governments and other institutions participated, such as the Army Corps of Engineers, the Federal Emergency Management Agency (FEMA), the Soil Conservation Service and the host agency - the Tennessee Valley Authority. The ASFPM was born in Chicago in 1977 and the annual meeting is the principal national forum for floodplain managers to share problems and solutions relating to floodplains and flood hazards. The University of Colorado Natural Hazards Research and Applications Information Center has performed a valuable service in making the conference proceedings widely available.

The theme of the conference - "floodplain harmony" - not only reflects the desire of floodplain managers to ensure the achievement of their expressed goal of reducing or preventing losses to life and property from floods, but also their desire to conserve the natural and beneficial values of floodplains and, where necessary, to restore and enhance the aesthetic and ecological value of the nations floodplains. The conference theme is not strongly developed in many of the contributions but this is comparatively unimportant. Coherence is difficult to achieve in such a large conference event. What counts more is the rich diversity of contributions and the range of ideas expressed.

The volume reflects the organisation of the conference and is subdivided into 10 parts based on conference sub-themes. Apart from the eight plenary addresses, these sub-themes include floodplain conservation; improved flood hazard awareness and flood warning; flood assessment; regulation and floodplain management; community/ regional/state mapping and computational tools; and the status of the nations floodplain management activity linked to workshop summaries. Most of these sub-themes are perennial ones but learning, comparison and experience-passing processes are important ones in long-term management efforts.

The plenary addresses identify a number of important features of the current environment of floodplain management in the United States, and a number of problems inherent in floodplain management. Floodplain managers are not slow to promote their interests, and are no different from others who are keen to achieve their goals. Thus, not for the first time in United States floodplain management history, we are told that indifference and lack of funds...
are important barriers to success. We are told that there is danger of public apathy towards flood problems resulting from recent extended periods of drought throughout the nation. Federal budget deficits are making it difficult to curb ever increasing flood damages and federal funding levels have been reduced. Although project starts are being delayed by lack of funding, the Army Corps of Engineers is seeking to get back into business by contributing to floodplain management with a new streamlined and shortened project construction planning process. We are also told that the United States Decade for Natural Disaster Reduction, beginning in 1990, should offer some hope for raised public and political awareness of flood hazard problems. There is much emphasis upon the need for cooperation, partnership and working together.

What keeps floodplain managers in business the world over is the inherent conflict which exists between economic growth and floodplain development on the one hand, and the need to reduce flood loss potential on the other. In what might be the most thought-provoking of the eight plenary addresses, Dennis Soden of the University of West Florida argues that conflicts over the use of the nations floodplains are likely to be reduced, and possibly resolved, if the public is better involved and informed with policy-relevant knowledge so that they may better understand the choices of options open to them.

Nature conservation and high environmental quality standards in floodplains are being successfully promoted through a number of regulatory and non-regulatory programs, and other projects. For example, designation of Areas of Critical Environmental Concern has led to better protection of coastal wetlands and floodplains. Regional Environmental Impact Statements have been useful in restricting floodplain development and maintaining floodplain-wildlife areas, although we are told that negative impacts include the loss of potential tax base through diminishment of developable land. In some cases serious negative environmental impacts of previous flood control projects, such as loss of floodplain marshland, are being reduced through floodplain restoration projects demonstrating how floodplain management has moved on through the years through the correction of earlier mistakes.

Low levels of public flood hazard awareness continue to dog floodplain management. Brochures, databases, community workshops, decision trees for selecting appropriate flood warning systems and improved warning response systems are all advocated. The reader is left with the feeling that more evidence is needed on the effectiveness of these approaches. For example, although not referred to in the volume, in the United Kingdom post-project evaluation research is showing the reasons from the customers point of view for the failure of flood warning systems, and elsewhere there is evidence on the mixed effectiveness of brochures. Work on flood assessment is progressing through improved identification of flash flood problems, flood hazards on alluvial fans, flood damage reducing effects of floodplain management, losses to state and local government property and losses to basements. The reliable estimation of basement losses is a problem which has bedeviled accurate flood
damage estimation for years.

Floodplain management is progressing through encouragement of flood resistant building techniques, building codes, improved software for determining floodplain development permit proposals, property relocation, zoning, floodplain mapping, flood insurance, coastal construction setback lines, and computer modelling of floodwater velocities, coastal storm impacts, and freeze-up events. The use of Geographical Information Systems technology is also explored.

Among the more esoteric and humorous contributions is the analysis of human body geometry and the hydraulic forces required to topple humans making their way through floodwater. Any flood analyst knows that solving this problem is actually important but the flood-prone reader can be forgiven for concluding that human flood resistance may be enhanced through over-eating. The flood hazard world has spawned some obscure institutions in the past, perhaps none more so than the so-called "Tax Ditch Organisations" which we are told are making valuable contributions to local watershed management.

Many contributions are about the nuts and bolts of floodplain management as experienced by the people who are trying to achieve the safe use of floodplains and better floodplain environments. Ultimately this is what floodplain management is about and this is reflected in the workshop summaries. There is hardly any input from overseas participants. This is perhaps understandable given the nature of the ASFPM but floodplain managers the world over are facing very similar problems, and there is value in learning through comparison.

Given the obvious enthusiasm of floodplain managers and the wide range of ingenious methods being employed to achieve their goals, it is extremely important that experience and effectiveness of programs is evaluated. On its own this justifies the annual meeting of floodplain managers. However it is comforting to hear from Frank Thomas of FEMA that a Federal Interagency Floodplain Management Task Force is in the process of evaluating the progress of floodplain management in the United States, usefully linking back to the origins of recent floodplain management policies in the mid-1960s. One wonders what this useful evaluation will find and how progress will be judged. We are told by many contributors that monetarily-measured flood losses continue to rise despite a quarter of a century concerted floodplain management. Some of the contributions describing the recent implementation of flood control projects barely mention environmental impacts and the reader is left wondering whether old mistakes are being made anew. However, floodplain managers are probably nearer than they were twenty-five years ago to maximising the flow of net social benefits to non-monetary, monetary and environmental - from floodplains.
Resettlement in Afghanistan

Jolyon Leslie, UNCHS Kabul Afghanistan, United Nations, Switzerland

The main impact of the war on both urban and rural settlement in Afghanistan has been the displacement of considerable numbers of the population, coupled with the destruction of homes in disputed areas (figure 1). The most visible consequence of this in towns is overcrowding, as a symptom of increasing pressure on urban resources. The result is deteriorating living conditions for many urban families.

Figure 1  Afghanistan: principal zones of war-related damage to settlement (May 1989)

Permanent resettlement by rural families in the towns is likely to continue as a post-war phenomenon. Many of those who settle in the towns have the resources and skills to enable them to build for themselves. There is little to distinguish most new urban house building from the methods traditionally used by rural communities (figure 2). A shortage of affordable land, however, is a major obstacle to self-reliance in shelter for migrants and others.
Figure 2  Afghanistan: typical urban traditional house forms (sections)

Kabul

Kandahar

Herat
A survey was made during March 1990 in the towns of Kabul, Herat, Kunduz and Mazar i Sharif (figure 3). Interviews were held with a total of 987 households, in order to assess their living conditions. Almost three quarters of those interviewed were found to be living in homes damaged by war or suffering deterioration from the weather. Pressure on space is such that more than one home in five had been subdivided to let. Migrants from an increasingly large proportion of urban residents, and more than a quarter of the families interviewed did not own the homes in which they live, while almost half of these occupy rented rooms.

Figure 3  Afghanistan housing survey March 1990: location of towns covered by the survey

Kabul, which shows few obvious signs of war-related damage, has had to absorb a considerable increase in population, with present estimates at about 2 million inhabitants. This growth has manifested itself in overcrowding in existing homes, and a spread of self-built settlements, which now account for four-fifths of the new building in the city. Much of this construction takes place on land to which the builders have no title, with one in five respondents to the survey in Kabul being squatters. Even more marginal sites are being settled, as an indication of the demand for urban land. Official development of land for housing is currently failing to meet even a fraction of the actual needs. The impact of government-sponsored housing developments on overcrowding is negligible, with most low-income groups effectively excluded by the high costs of such schemes.
There has been extensive damage to housing in the western and southern parts of the city of Herat (figure 4), where an estimated 8,500 homes will need to be re-built. The city is now thought to comprise at least 100,000 inhabitants. Significant numbers are reported to have left the city early in the war. Many of those displaced from damaged parts, as well as migrants, are living in overcrowded conditions, in the east of the city. Urban services are limited, and nearly three quarters of surveyed homes had no water or electricity. There is a shortage of land for new housing, most of which is confined to the more secure eastern parts of the city. Some abandoned parts of the city are now felt by those displaced to be safe enough to resettle, and should be the priority for any reconstruction activities. Rural parts to the east of the city have suffered limited damage from the war, while villages to the west are devastated, and have been largely abandoned.

In Balkh province, many villagers have been displaced within the province, and may be some of the first to return to their homes. Many rural communities have moved to the provincial capital, Mazar i Sharif, which has enjoyed relative security during the war and has better services than most towns. There is growing pressure on the existing housing stock and land for building, the supply of which has not kept up with demand. Overcrowding and lack of adequate water make for poor living conditions for some urban dwellers, particularly recent migrants. The effects of war on the town of Balkh are slight, although the surrounding areas are still disputed, and some villagers are said to have sought shelter in town. Neither Balkh nor Mazar i Sharif can be considered as priority areas for reconstruction work. It may be possible to encourage resettlement in areas south west of Balkh where some villages have been abandoned.

There has been extensive damage to the bazaar town of Tachqurghan (Kholm) in Samangan province, with an estimated 20,000 people displaced from their homes in the area. Many townspeople are now prepared to return and resettle, and the town and its outskirts should be considered a priority for future activities in urban reconstruction in the north of the country.

Kunduz has suffered severe destruction during fighting over the past two years, when much of the population fled the city. The present population is estimated to be about 200,000, many of whom are migrants from the surrounding areas, which are still disputed. A higher proportion of residents rent their homes than elsewhere, indicating the mobility of the population. There is said to have been extensive reconstruction of central areas in the past year, using largely traditional materials. Living conditions remain poor for most inhabitants, however, with few homes reported to be in good condition.
Figure 4  Herat old city: principal areas of war-related damage (March 1990)

- destroyed housing
- damaged but inhabited housing
Existing urban conditions and the availability of resources (including land) for building are likely to be an important factor in decisions made by those considering return to their homes in towns. There is, however, no single solution to the diversity of the needs that exist. The future project will support the following activities to address issues of urban resettlement:

a) a number of small sub-projects aimed at providing assistance, in the form of materials or labour, to urban households who intend to re-build their homes and resettle;

b) the development of appropriate techniques to be used in upgrading of existing self-built urban homes, and the dissemination of these methods through a public education campaign;

c) an evaluation, together with the relevant authorities, of current planning and housing policies in urban areas, aimed at:

   i) the formulation of an updated strategy for the release of low-cost land, based on maximum recovery of development costs;

   ii) the development of positive measures to deal with squatter housing, including the upgrading of existing environments where feasible.

June 1990
Survey report: priorities of governments for the International Decade for Natural Disaster Reduction (IDNDR) 1990-2000

Ian Davis, Disaster Management Centre, Oxford Polytechnic
Edmund Penning-Rowsell, Flood Hazard Research Centre, Middlesex Polytechnic

Context

At the outset of this decade of opportunity to reduce the losses to property and lives from disasters we took the initiative to write to a number of leading international figures who are active in the field of Disaster Risk Reduction. We asked each of them to list up to five tasks for governments during IDNDR, and to set them down in order of results to form a collective open letter to be sent to Prime Ministers to alert them to opportunities and priorities for governmental action during the Decade.

The letter summarised the collective views of forty three specialists from sixteen countries who share a common concern to reduce the risks and impacts of natural hazards. All have spent a substantial part of their lives attempting to reduce these impacts of disasters by research, teaching, writings and implemented policies.

The signatories of the letter comprise personnel with experience of:

- field operations concerning hazard reduction,

- a variety of hazard types,

- various countries including donors as well as those who suffer disaster impacts within developing countries,

- varied disciplines - academics, writers, policy makers, researchers, and officials in international agencies, governments and non-government agencies.

A number of the individuals who participated in this survey were also members of the Ad-hoc Committee of international experts that provided technical advice to the UN Secretary-General in April 1989 in the process of setting up the IDNDR.
Summary of priority concerns

The results of our considered judgements are as follows:

The first priority for government action to reduce disaster risk is to develop:

national level disaster preparedness.

To develop the capacity of national disaster bodies, and "in country" programmes for risk reduction. Local institutions will include national organisations, training bodies and national disaster management institutes. Emphasis should be placed during IDNDR on the development of national level disaster preparedness plans and on increased regional collaboration. These developments can form the environment in which pilot disaster mitigation projects can be implemented.

The second priority:

human resources for disaster mitigation.

Recognising that the key resource in Disaster Planning is the local community which is "at risk", a series of actions should be taken in the spheres of public education, training and in community level preparedness planning.

The need is to develop and maintain a comprehensive public awareness/education programme, to alert all sections of vulnerable populations to the risks they face to reduce them. Training is also needed for certain occupations, professions and for public officials.

The emphasis should be on developing and maintaining disaster preparedness at the community level, working through local institutions and non-governmental agencies and placing emphasis on affordable measures.

The third priority:

integration of mitigation.

To incorporate disaster mitigation measures into all aspects of environmental protection and development planning and relevant governmental structures. This priority is firstly to determine whether proposed development projects are likely to increase levels of vulnerability and secondly to make certain that proposals have been designed to withstand the impact of hazards. This proposal was linked by some signatories to the investment policies of International Investment Banks.
The fourth priority:

research and development needs.

To secure funds to undertake applied research on ways to reduce risks in various sectors (ie early warning systems, hazard resistant building etc). Further to implement the results of existing research and to investigate the reasons for the obstacles to its application.

In compiling these priorities we found that the proposals we received contained a rich and varied collection of insights that merited wider discussion than the bare summary of the relative priority of findings contained in the open letter to prime ministers. To avoid the possibility of editorial bias in making a selection, all the practical suggestions have been reproduced in the Survey Report.

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Conclusion

The survey was a joint initiative of Ian Davis of the Disaster Management Centre, Oxford Polytechnic, and Edmund Penning-Rowsell of the Flood Hazard Research Centre, Middlesex Polytechnic, and the Survey Report is the collective expression of our personal conclusions - it does not necessarily reflect the perceptions and policies of the institutions for which we work. It is our hope that all the 93 governments that were signatories of the UN resolution that created the IDNDR will regard the decade as a unique opportunity to take considered action. We hope that our modest ad-hoc survey will provide a practical focus for this urgent task as individual countries develop their own plans within the IDNDR.

HAZARD AND DISASTER MANAGEMENT      APRIL 1991
Technical co-operation activities in disaster mitigation

From: Habitat News Volume 12, Number 1, August 1990

A number of UNCHS (Habitat) projects deal with post-disaster reconstruction and rehabilitation. Such programmes are usually followed by disaster mitigation programmes in which reconstruction and new construction are carried out, incorporating disaster-resistant features to enable the buildings and infrastructure to withstand the effects of future disasters with little or no damage. The post-earthquake programme in Nepal and the post-flood programmes in Bangladesh and Pakistan are examples of projects of this type.

Bangladesh

While the natural disasters that strike Nepal are earthquakes, those that afflict Bangladesh are floods from the three large rivers of Himalayan origin - the Ganges, the Brahmaputra, and the Meghna - which pass through this small country. Floods are also caused by cyclones which hit the country at frequent intervals. The problem is aggravated by the fact that most of the rural settlements are located on land only slightly higher than the surrounding fields and which are therefore easily flooded; in addition the flood waters remain for a long time as the countryside is flat and not much above sea-level.

The severe floods of 1987 were followed by more severe floods of 1988 which were the worst in recent history. They affected 323 out of the 460 sub-districts or upazilas and the flood waters remained on land for over three weeks, with all the three major rivers in spate breaching many embankments. All the road links between the countryside and the capital city were cut off and the Dhaka International airport had to be closed for nearly a week. With nearly three quarters of the country under water, damage to crops and infrastructure facilities was severe, and rural housing hard hit. According to the estimates of the Government of Bangladesh, at least 1.25 million houses were totally destroyed and more than 2.5 million were damaged. Although several efforts at relief and rehabilitation were mounted, housing received relatively little attention.

Rural housing in Bangladesh is mostly of temporary construction, with less than 15 per cent of the houses being of permanent or semi-permanent construction. The majority of the temporary houses are built of bamboo frames with thatch roofs, split-bamboo or jute-stick walls, or packed mud walls with thatch roofs. Such construction are easily damaged or destroyed during floods, adding to the shortage that already exists even for meeting the needs of normal replacement and increasing population. Efforts at providing housing reconstruction aid received momentum following the 1988 floods, but these were largely individual efforts.
by some NGOs with differing models and programmes. Such programmes are difficult to sustain as the NGOs may face a shortage of funds. Nor can the Government alone solve a problem of such magnitude. The problem calls for a well-conceived strategy giving a greater role to the private sector with the government concentrating on:

a) regulatory functions such as ensuring economy in land use, promoting harmonious development, and stimulating private investment through fiscal incentives;

b) meeting infrastructure demands such as land development, road construction, and the provision of water.

In response to appeals from the United Nations Secretary-General and UNDP (Dhaka), UNCHS (Habitat) fielded experts in disaster relief planning and rural housing and designed a large project "Post-flood Reconstruction of Rural Housing" to help formulate and implement viable approaches, policies, strategies and self-help support programmes of housing for poor rural families. This project (BGD/90/006) will strive to improve the quality of rural housing by promoting flood-resistant durable house designs, to improve the quality and availability of traditional building materials, to demonstrate mechanisms for security of tenure through savings for purchase and leasing, and to strengthen the capacity of the rural population to improve their housing and living conditions by increasing income-generating activities. The project will also expand access to capital for rural housing through revolving funds and by increasing the effectiveness of NGO-supported lending programmes.

The technical co-operation activities of this project executed by UNCHS (Habitat) are mainly funded by UNDP, but the capital required for the reconstruction programme is provided by the ADB, United Nations Capital Development Fund (UNCDF), United Nations Special Relief Office in Bangladesh (UNROB), the World Bank and FINNIDA.

Nepal

On 21 August 1988, an earthquake measuring 6.7 on the Richter scale struck parts of Eastern and Central Nepal, causing widespread damage and heavy loss of life. Some 66,000 houses, 1,200 schools, several hospitals, many public buildings, 30 bridges, many roads and other basic infrastructure were destroyed or badly damaged. The death toll was over 700. The heaviest damage was to housing. An estimated 460,000 persons were rendered homeless and took shelter in makeshift dwellings provided by the Government as a relief measure; others continued to live in damaged and unsafe dwellings.

The extensive damage to the buildings was aggravated by the poor construction techniques prevalent in Nepal which made widespread collapse of buildings inevitable.
The defects in buildings are a consequence of several factors. Nepal has no building code, and hence no requirements for incorporating earthquake-resistant features into structures. Moreover, the rapidly increasing population and the scarcity of building materials prompted home-builders to economise on the cost of construction by not incorporating traditionally-accepted earthquake-resistant features in new buildings. A second factor is the informal, undeveloped state of the construction industry. Qualified contractors are few and, in rural areas, families commonly build their own dwellings with the assistance of largely untrained rural artisans. A third element is the fact that Nepal has no clearly defined housing policy or strategy designed to address the current problems and basic issues. The recent earthquake has focused attention on the housing and construction sector in Nepal and a programme is being organised by the Government to improve matters.

With the first phase of the earthquake relief operation now largely over, the immediate goal is to reconstruct the destroyed and damaged infrastructure in the affected areas as rapidly as possible, with priority emphasis on the reconstruction and rehabilitation of houses. A large-scale programme has been formulated, estimated to cost approximately $US 75 million, towards which the World Bank has agreed to provide an International Development Association (IDA) credit of $US 37 million for the housing component. The Asian Development Bank (ADB) has agreed to finance repair and reconstruction of roads and public buildings under a separate agreement. To implement the house construction and related programmes, Earthquake Affected Areas Reconstruction and Rehabilitation Project (EAARRP) has been set up by UNCHS (Habitat) with UNDP providing a Program Advisor (Project NEP/88/053) to advise and assist the EAARRP in the organization and implementation of the programme.

The cornerstone of the strategy for reconstruction of the affected houses is a loan programme under which two commercial banks in the area will lend households the funds necessary for repairing/rebuilding their homes under a system of interest rebates from the Government which will result in easy terms for the borrowers.

A second basic element of the strategy is to impart training to engineers and building supervisors in elementary, low cost earthquake-resistant features with a view to ensuring that these are incorporated in the buildings. The households are also given grants to install low-cost toilets and smokeless stoves. Many of these activities will be financed from the IDA credit.

In order to find a long-term solution to the problem of earthquake damage in buildings and minimize damage from future earthquakes, UNDP together with UNCHS (Habitat) designed, at the request of the Government, a companion project (NEP/88/054) aimed at formulating a National Building Code and a national housing strategy; developing better construction materials with alternatives to timber for conservation and environmental reasons; and training engineers and supervisors to familiarize them with these developments. The Emergency
Programme and the broader technical co-operation project will be implemented in close coordination as two components of a unified package of assistance for development of the housing and construction sector.

Pakistan

As in Bangladesh, during 1988 Pakistan was subjected to two major floods in quick succession, the first in August and the second in later September/early October. They devastated over 4,300 villages and 400,000 acres of fertile agricultural land, rendering 3.3 million people homeless, wiping out 164,000 rural housing units and washing away 26,000 head of cattle, besides adversely damaging the infrastructure. Socio-economic life in the flood-affected areas came to a virtual halt for several months. The severity of these floods varied in different parts of the country, with the worst ever havoc in Punjab Province, and that in other areas surpassing previous records of over 40 years. The districts of Lahore, Sialkot and Kashur in Punjab bore the major brunt.

The second flood devastated the entire area of Kashur Tehsil (to be covered by the proposed project). According to the local administration, it affected an estimated 100 villages and uprooted over 50,000 persons. Its currents washed over 135,000 acres of agricultural land and damaged nearly 45,000 acres of crops. Almost 1,000 houses were washed away and another 4,000 were badly damaged. Sand siltation covered nearly 2,000 acres of fertile agricultural land up to a depth of five feet. Four schools and three health centres were destroyed. Ten people lost their lives, as did some 100 cows. Life came to a standstill for over four months.

Immediately following the floods, the Government of Pakistan mobilized all resources, both civil and military, at its disposal for massive relief operations at the country level. The private sector, including political, social welfare and religious organizations, NGOs and the public at large all contributed generously, as did UNDP - which offered a cash contribution amounting to $US 50,000.

Despite these efforts, the entire project area still needed help, including rehabilitation of flood-affected families and extensive reconstruction work. The vast majority of the families returned to their villages after the floods and are currently struggling to repair or rebuild their homes, but are severely handicapped by a lack of financial means and the technical know-how for building durable structures with improved hygiene and sanitation. Their means of livelihood have been put in jeopardy through damage to infrastructure, crops, sand siltation of agricultural land and the break-up of the community with the dispersal of their kammis, the providers of essential services at the village level who are either stranded in the relief shelters or living with their relatives in other areas.
At the request of the Government, UNDP, together with UNCHS (Habitat) is mobilizing a project to address the rehabilitation and reconstruction of the flood-damaged areas. The project PAK/90/002, aims to achieve improvement in two main areas. Under the first - reconstruction, rehabilitation and improvement - fall the following:

a) Mobilizing community leadership and individual participation for rehabilitation and reconstruction activities;
b) Reconstructing demolished and damaged houses in the project area with relocation where necessary;
c) Reclaiming 2,000 acres of village agricultural land from sand cover and restoring agricultural and fruit gardens;
d) Restoring Talwar Bridge over Rohi Nallah to establish a link with over 16 densely populated villages in the Sehjra enclave;
e) Installing approximately 200 water handpumps for improved water supply to community and households.

The second - flood disaster prevention and preparedness - encompasses:

a) Preliminary engineering designs to be prepared for flood-damaged roads, type designs of village streets, drains and soak pits;
b) Integrated development plans being formulated for five villages to act as staging areas in future flood disasters, and to act as focal points for socio-economic activities and services for other villages;
c) A disaster preparedness plan for implementation by local authorities;
d) Six motorized boats to be provided to affected communities for transportation and emergency relief during flood periods.

The project is innovative in that the SOS Rural Support Programme (an NGO) will be the national implementing agency working in co-operation with the Deputy Commissioner, Kashur, and other participating NGOs. The diagnostic studies as well as rehabilitation and reconstruction works will be subcontracted locally and carried out by NGOs, local consulting firms and contractors in accordance with standing UNDP policies and procedures, and under the monitoring supervision of UNCHS (Habitat).

The project is expected to be completed by December 1992.
Disaster management centres in Africa

From: The Ark, Issue No. 5, September 1990

Co-operation between the United Nations and the Organization of African Unity towards the creation of Disaster Management Centres in Africa is underway.

The absence of a good "network" leaves numerous disaster mitigation projects in African countries confined within national borders. While the potential of many of them could serve interested authorities in neighbouring countries.

Plans are in progress for a small number of Sub-regional Disaster Management Centres which will establish the "network". The Centres will be divided up to serve the most prevalent disaster in that region. These Sub-regional Centres will not only deal with disaster mitigation, but rather focus on disaster management, striking a balance between disaster mitigation and disaster response. Another important task for the African Sub-regional Disaster Management Centres will be to discover an equilibrium between Environmental aspects (causes of many disasters) and disaster aspects (effects on settlements, agriculture, forestry, etc).

For example, Addis Ababa might be seen as a suitable location for the Sub-regional Centre focusing on disaster management aspects of drought. Other Sub-regional Centres could be established in North-western States concentrating on disaster management aspects of earthquakes, in the South-eastern States directing attention on floods and cyclone-related problems etc. A proposal should be drafted by UNDRO and OAU for such activity. It could also include recommendations for co-operation with other international agencies concerned, particularly with UNEP, FAO, WHO, UNESCO and WMO.
Ongoing disaster mitigation projects in Africa

From: The Ark, Issue No. 5, September 1990

Egypt: Disaster Preparedness and Management Planning
Status: To be completed during 1990.
Government now requests extension.

Lesotho: Strengthening of Disaster Preparedness
Status: An outline National Preparedness Plan has been drawn up and accepted by the Government. Subject to eventuality of funds it is ready to be implemented.

Madagascar: Strengthening the Governments intervention capacity in the Northern part of the country in case of disasters.
Status: The project was started in 1986 and is due to be completed by the end of 1990.

Malawi: Strengthening of Disaster Mitigation and Management
Status: Assistance has been given with the development of a national disaster plan. A project document has been prepared to improve disaster management services and provide related training. Funds are being sought.

Mauritius: Emergency Management in Mauritius
Status: As follow-up to an exploratory mission in late 1989, a second field mission was undertaken by a consultant in March 1990 to develop a work plan and training programme for the mitigation of cyclone and other natural disasters.

Mediterranean Region: Seismic Risk Reduction in the Mediterranean Region
Status: The project started in October 1989 and will continue through June 1991. The main topics to be dealt with by the project are seismic hazard vulnerability assessment and risk reduction aspects. Cooperation agencies include UNDP, UNEP, UNCHS (United Nations Centre for Human Settlements), and WHO.

Participating countries from Africa are Egypt, Tunisia, Algeria and Morocco.
Tanzania:  Raising Public Awareness of Disaster Risks  
Status: A project document has been prepared by UNDRO. This project proposal includes three sub-regional seminars.

Zimbabwe:  Strengthening of Civil Protection Services in Zimbabwe  
Status: A project document and work programme of training activities was prepared to provide Zimbabwe with the capacity to plan for and manage emergencies arising from natural and industrial hazards. Funds are being sought.

Zaire: Support for National Planning: Natural Disasters  
Status: A project document has been prepared to assist in establishing a work programme and provide training for the Civil Protection Service. Activities are expected to begin in October 1990.

Zambia: Disaster and Disaster Response  
Status: A request has been received to support a project on research by the Copper-Belt University.
Events and Courses

UCLA International Conference: Impact of Natural Disasters

10 - 12 July 1991

An International Conference will be held at UCLA on the subject of natural disasters. The Conference is sponsored at UCLA by ISOP (International Studies and Overseas Programs), with the support of the Latin American Center and the Center for Pacific Rim Studies. It is co-sponsored by AIG (American International Group, Inc.), ECLAC (United Nations Economic Commission for Latin America and the Caribbean), FEMA (Federal Emergency Management Agency), UNCRD (United Nations Centre for Regional Development, Nagoya, Japan), UNESCO (United Nations Educational, Scientific and Cultural Organization), and USGS (United States Geologic Survey), in cooperation with PAHO (Pan American Health Organization) and WHO (World Health Organization).

The Conference aims at a cross fertilization of ideas from many disciplines and types of natural disasters and at providing a comprehensive approach to the important impacts of disasters, at a local, national, regional and international level. The disasters to be addressed cover a wide spectrum including earthquakes, windstorms, floods, volcanic eruptions, wildfire, droughts and environmental problems. The Conference aims at bringing together an interdisciplinary group of academic, governmental and private industry experts, to present results of research and past experience and to discuss the agenda for the future in terms of needed research, mitigation actions and appropriate policies.

Further information can be obtained from:

Professor Samuel Aroni
Conference Chair
GSAUP
UCLA
Los Angeles
California 90024
Tel: (213) 825 7430
Fax: (213) 206 5566
E-mail BITNET IAQ2SA1@UCLAMVS

HAZARD AND DISASTER MANAGEMENT APRIL 1991
International Symposium: Environmental Control and Resources Development in China’s Loess Plateau Region

1 - 15 September 1991: China

Discussions and exchanges about recent achievements in environmental control and natural resource development in China’s loess plateau region and similar regions in different countries will be the theme of the International Symposium on Environmental Control and Resources Development in China’s Loess Plateau Region (ISLPR). It will be held in the loess plateau area of China (with visits to various sites throughout the area and a discussion session in Xian, China). The Commission for Integrated Survey of Natural Resources of the Chinese Academy of Sciences is organising the meeting.

Further information about presenting papers or attending the meeting is available from:

Gao Liuqing and Zheng Hongying
ISLPR
P O Box 767
Beijing 100101
China

Emergency '91 - An International Conference

8 - 12 September 1991: Lancaster, UK

Further information from:

Emergency '91
Conference Office
Bowland College
Lancaster University
Lancaster
UK
Sixth International Symposium on Landslides

10 - 14 February 1992: Christchurch, New Zealand

Further information from:

ISL 1992 Secretariat
c/o Guthrey's Pacific Ltd
PO Box 22-225
Christchurch
New Zealand

International Conference on Nutrition

December 1992: Rome, Italy

The World Health Organisation and the Food and Agricultural Organization of the United Nations are to jointly sponsor a major conference on nutrition in December 1992 in Rome, Italy, in cooperation with other United Nations agencies. The primary aim of the conference will be to mobilise and pool efforts and resources to combat malnutrition in the world. Major objectives include:

* raising world awareness
* formulation of strategies for action
* mobilising resources
* giving a nutrition focus to the International Decade for Natural Disaster Reduction.

While the main focus will be on the nutritional problems of the developing countries, additional topics on the agenda are nutritional problems of the affluent countries, the role of women in household nutrition and the inter-relationship between nutrition and the environment.
Courses in the applied sciences of disaster management

Cumberland College of Health Sciences

The Cumberland College of Health Sciences, New South Wales, is offering diploma courses in the applied sciences of disaster management. The upper level program includes familiarization with emergency situations, inter-institutional and structural plans. The full-time courses take one year.

Further information is available from:

Cumberland College of Health Sciences
P O Box 170 East Street
Lidcombe
NSW 2141
Australia

Change of address

All enquiries and correspondence to the Disaster Management Studies Centre should now be redirected to:

Dr Neil Britton, Director
Centre for Disaster Management
The University of New England
Armidale, NSW 2351
Australia

Telephone: national (067) 71 1097 / 73 2318
           international 61+67+71 1097, 73 2318

Facsimile: national (067) 72 5230
           international 61+67+72 5230
Publications

Australia's role in the International Decade for Natural Disaster Reduction

Ed. D I Smith and J W Handmer

Papers from a seminar held on "World Disaster Day", October 1990, at the Centre for Resource and Environmental Studies, The Australian University, Canberra.

Copies available (priced at A$10.00 plus A$5.00 postage and packing) from:

Publications Clerk
CRES
The Australian National University
GPO Box 4
Canberry
ACT 2601
AUSTRALIA

Disaster Resource Directory - 90

The Disaster Resource Directory, produced by the Joint Assistance Centre, is a reference book, providing assistance for preparing and responding to various kinds of emergencies. It provides vital information regarding services, products and specialist personnel required in events like fires, accidents, cyclones, pollution, earthquakes and floods.

For further information:

Project Director "DRD"
Joint Assistance Centre
H-65 N.D.S.E. -1
New Delhi - 110049
INDIA
Decade Spotlighter

Newsletter published by the US Committee for the Decade for Natural Disaster Reduction.

This committee was established in March 1989 at the request of the federal interagency Subcommittee on Natural Disaster Reduction, consisting of 17 members. The committee serves to advise the federal government, catalyze action within the United States and foster international links in natural disaster reduction.

Each issue of the newsletter gives profiles of successful activities that support the goals of the Decade for Natural Disaster Reduction. You are invited to send summaries of your work or information on conferences you are organizing to Decade Spotlighter for publication.

Further information from:

Decade Spotlighter
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HA 286
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