

NEW ZEALAND NATIONAL SUMMARY REPORT

IDNDR

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SECTION A : PROFILE

1. **COMPOSITION OF NATIONAL IDNDR COMMITTEE**
 - (a) **Ministries (6)**
 Ministry for the Environment
 Ministry of Civil Defence
 Ministry of Education
 Ministry of Foreign Affairs and Trade
 Ministry of Health
 NZ Fire Service Commission
 - (b) **Academic and Research Institutions (4)**
 Institute of Geological and Nuclear Sciences Ltd
 Meteorological Service of NZ Ltd
 Royal Society of NZ
 Department of Politics, Victoria University of Wellington
 - (c) **Private Sector**
 Nil
 - (d) **Public Services (1)**
 Works Consultancy Services Ltd
 - (e) **Non Governmental Organisations (5)**
 Institution of Professional Engineers New Zealand
 National Commission for UNESCO
 NZ Local Government Association
 NZ Red Cross Society Inc
 United Nations Association of NZ
 - (f) **Media (1)**
 Radio NZ Ltd
 - (g) **Insurance (2)**
 Earthquake Commission
 Insurance Council of NZ Inc
 - (h) **Others**
 Nil

2. Internal Organisation of the National Committee

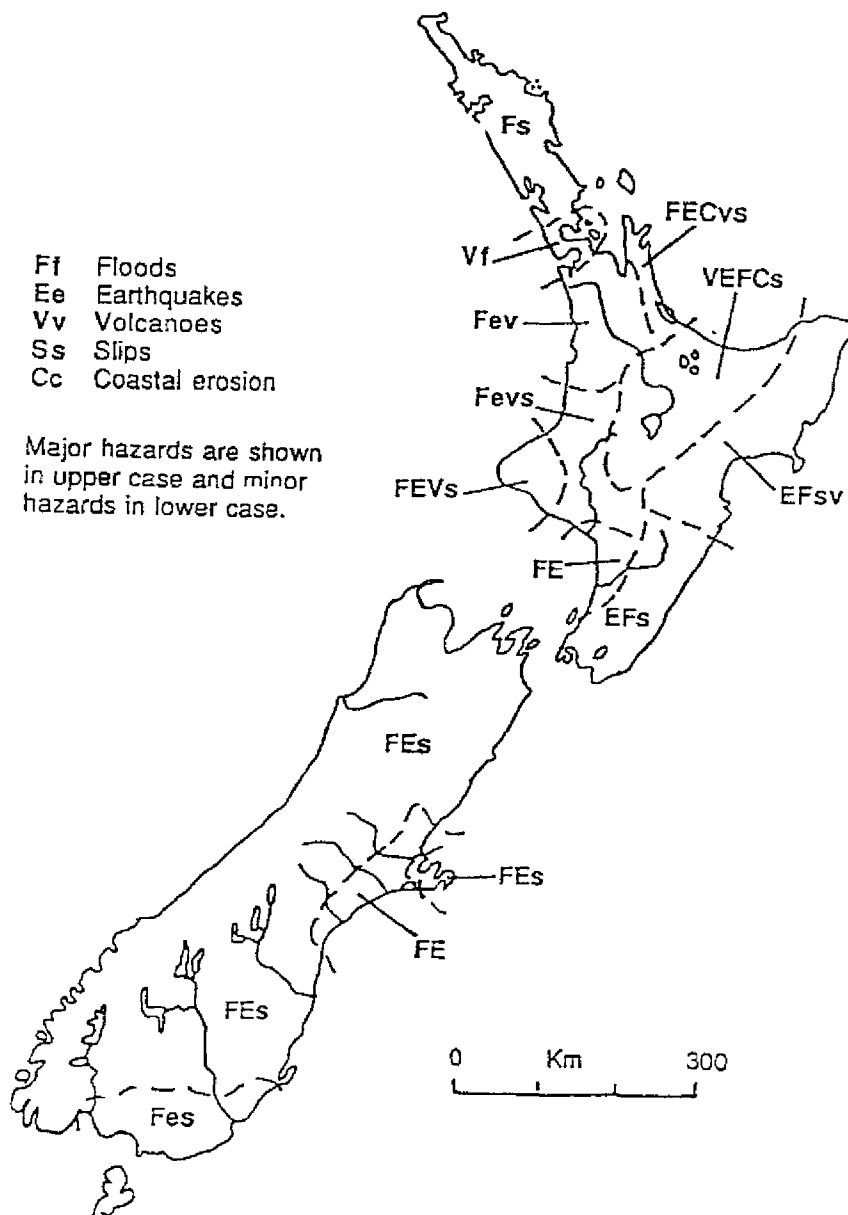
The New Zealand National IDNDR Committee meets quarterly, convened and chaired from the Ministry of Civil Defence. The Committee's role has been largely educational and for the exchange of information. It has a newsletter, edited at the Ministry, with a circulation of about 250, of which 200 copies go to NZ addresses chiefly in central and local government. The remaining copies go overseas to IDNDR focal points.

Members of the IDNDR Committee are usually involved in other disaster reduction connections. Some of these will be described in Part B of this report.

3. Prevailing Hazards

In figure 1 below, we reproduce a map by John Macauley, Honorary Director of the Geography Resource Centre, Christchurch showing the distribution of some significant hazards. It should be said that floods, earthquake and volcanic eruptions far exceed slips or coastal erosion in their importance. (The map was issued in connection with high school studies.)

Figure 1 - Natural Hazards in New Zealand



In tabular form, the principal hazards can be represented as follows:

TABLE 1 - PREVAILING HAZARDS

Type	Location	Affected Population
Floods	most inhabited areas	2.4 million
Volcanoes	Auckland & central North Island	2.0 million
Earthquakes	central areas of New Zealand	1.8 million

It should be noted that the numbers in Table 1 are maximums. The return period for volcanic eruptions is much longer than for earthquakes of comparable threat, while floods (as may be seen in Table 2) are frequent, though not often fatal.

4. Recent Natural Disasters

The Centre for Research on the Epidemiology of Disasters (CRED) uses criteria of 10 dead or 100 affected in defining disasters. New Zealand does not have a generally accepted set of criteria. We do have a system of civil defence emergencies. In the table below those since 1984 which met the CRED criteria are listed. (The dollars are NZ dollars of 1993.)

TABLE 2 - NATURAL DISASTERS, 1984-1993

Date	Type	Location	Affected Population	Losses
Jan 84	Flood	Southland	8000	\$110m
Feb 85	Flood/landslip	Thames Valley	200 (4 dead)	\$10m +
Jul 85	Flood	Poverty Bay	100	\$3m +
Jan 86	Flood	Nelson Bays	150	\$1m
Mar 86	Flood	Aorangi	1500 (1 dead)	\$70m +
Aug 86	Flood	Rangiora	320	N.A.
Mar 87	Earthquake	Bay of Plenty	5000 +	\$1100m
Mar 87	Flood	Southland	700 +	N.A.
Mar 88	Storm,flood	Central North Island	5000 +(5 dead)	\$250m
May 88	Flood	Greymouth	400 +	N.A.
Jul 88	Flood	Palmerston North	1200	N.A.
Sep 88	Flood/landslip	Greymouth	350 +(1 dead)	\$16m +
Mar 90	Storm,flood	Taranaki,Wanganui	200	\$12m +
Jan 91	Flood	West Coast	130 +	\$4m
Feb 91	Flood	Catlins	128	\$5m

Over the longer term, deaths caused by principal natural disasters may be summarised as shown in Table 3.

TABLE 3 - NATURAL DISASTERS 1840-1993

1	Influenza epidemic caused	6700 deaths
8	Volcanic events caused	382 deaths
9	Earthquakes caused	289 deaths
16	Floods caused	170+ deaths

5. **National Socio Economic Conditions**

- (1) The population is 3.5 million.
- (2) GNP is about NZ\$70 billion.
- (3) Per capita income, based on median wage and salary earnings, would be about NZ\$12,000.

The National IDNDR Committee considered that another indicator is debt. New Zealand's national debt is about NZ\$67 billion.

6. **Availability of Assistance to Other Countries**

The information which follows is taken from a publication **New Zealand's Responses to Natural Disasters** issued by Ministry of Foreign Affairs and Trade. More detailed material is available in that booklet.

New Zealand seeks to assist in effective disaster relief overseas, especially when the disaster affects those countries in our immediate region, the South West Pacific. The New Zealand Government places particular importance on responding to the relief needs of Tokelau, the Cook Islands and Niue because of the special relationship and constitutional ties we have with those three countries.

The Ministry of Foreign Affairs and Trade co-ordinates all aspects of New Zealand's response to a disaster. In particular it works closely with the RNZAF and other defence forces in damage assessment and, where necessary, in the transport of immediate relief supplies to disaster areas. These arrangements were put into full effect in the wake of Cyclone Val, one of the worst disasters to strike the South Pacific in living memory.

Co-operation in disaster relief activities between France, Australia and New Zealand (FRANZ) has proceeded well through the arrangements in New Zealand (i.e. the Officials' Emergency Task Force), Australia, New Caledonia, and French Polynesia to respond to calls for assistance from countries in the region in the wake of natural disasters, particularly tropical cyclones. The three countries feel it is essential to maintain pragmatic, flexible arrangements to allow for a speedy response in keeping with the particular requirements of the Pacific Island country where the disaster occurs.

New Zealand's Official Development Assistance Programme places particular emphasis on reducing the impact of natural disasters. The New Zealand Government recognises that disaster preparedness is a high priority among the development needs of the South Pacific region and is ready to offer what it can in terms of advice and training in response to requests for assistance.

Over the past decade New Zealanders have worked with local officials on a wide range of disaster rehabilitation project. Recent examples include rebuilding schools in Western Samoa, Solomon Islands and Vanuatu, and the rehabilitation of and restoring of essential aviation services in Vanuatu after Cyclone Prema.

New Zealand has been active in funding a number of disaster mitigation activities in the South Pacific region, in close consultation with the countries concerned to reflect their needs and priorities, the level of funding and resources available and to avoid duplicating the efforts of others, such as Australia.

In recent years, we have focussed on the provision of meteorological training and/or services in the Cook Islands, Fiji (including funding of New Zealand expertise at the Meteorological Office in Nadi), Kiribati, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu and Western Samoa. In the 1992/93 financial year it is estimated that nearly NZ\$1.2 million was spent on these activities in the above countries.

The New Zealand Defence Forces have a long tradition of assisting our Pacific neighbours recover from devastating natural disasters. Ships and crews of the Royal New Zealand Navy, soldiers and equipment from the Army, and personnel and aircraft of the Royal New Zealand Air Force speed swiftly from their New Zealand bases to give immediate aid. Long term rehabilitation projects are often carried out by Army engineers as countries struggle to rebuild schools and other amenities.

The Meteorological Services of New Zealand, Fiji and Australia (based in Wellington, Nadi and Brisbane) have joint responsibility for monitoring weather in the South Pacific and pay special attention to situations in the region from which a cyclone could develop.

The Radio New Zealand International Charter includes a commitment to broadcast warnings, instructions and advice in disaster situations. RNZI transmits to all the countries of the South West Pacific region and beyond. RNZI's ability to reach a large section of the region is enhanced by broadcasting both in English and the major languages of the Pacific Island countries, although warnings are normally broadcast in English. The station broadcasts approximately 17 hours per day, six days a week, a reduced number of hours on Sundays and makes regular use of 14 different languages.

In addition to these official initiatives, the PEACESAT satellite terminal, based at Wellington Polytechnic, has links with terminals in the North and South Pacific, and has in the past played a significant role with the exchange of information during and after natural disasters.

New Zealand non-government organisations, such as the Red Cross, have also played a part in organising relief after disasters in the South-West Pacific, as well as at home. As recently as October 1993, the New Zealand Red Cross hosted a management training workshop for representatives of Red Cross Societies in eight South-West Pacific countries.

7. International Assistance Required

Recent disasters have all been within the capacity of New Zealand response agencies. A scenario which could require significant overseas help would be a major earthquake in Wellington or Christchurch, or a major volcanic eruption. Engineering, loss adjustor and scientific analysis help is likely to be needed. It is likely that after a major earthquake, transport and medical help would also be needed.

SECTION B : STRATEGIES AND ACTIVITIES

1. Steps Towards IDNDR Targets

Assessments of risk

During the past decade, New Zealand has substantially reformed both central and local government, with some emphasis on the environment and natural hazards. The Local Government Amendment Act 1989 reshaped regional councils, and the Resource Management Act 1991 has given them special responsibility to analyse natural hazards and to produce regional policy statements, which include sections on those hazards and other plans to deal with them. All 15 councils have now produced drafts at an advanced level, and these are open for comment by residents and by central government agencies such as those on the IDNDR Committee.

Together the regional studies offer a national view. The nature of hazards in New Zealand makes regional analysis rather than a national approach the more fruitful, since it can be closely related to mitigation and planning with involvement of people and institutions which will most benefit from such measures.

However, New Zealand also has national groups involved in risk assessment including the Institute of Geological and Nuclear Sciences, the Meteorological Service of NZ (both these are on the IDNDR Committee), and the National Institute for Water and Atmospheric Research. In addition there are seven universities in New Zealand in which a good deal of important research is carried out. Natural hazard research (including some beyond mere risk assessment) in 1991-92 included subjects and sums set out in the table below.

TABLE 4 - HAZARD RESEARCH IN NZ 1991/92

Output Class	Value of Hazard Research (NZ\$000)
Generic Animals	4,934
Forage Plants	1,541
Construction	1,777
Information and Communication	560
Planning	268
Environmental Protection	3,001
Geology	8,002
Marine and Freshwater	2,147
Atmosphere and Climate	9,421
Antarctica	<u>441</u>
Total	<u>32,092</u>

Mitigation Plans

Mitigation plans in New Zealand have traditionally been locally or regionally developed, with central government support. Much attention has been given to catchment works. Since 1968 an average of over \$70 million a year (in 1993 terms) has been spent on these. Building codes have been revised following important local or overseas earthquakes. The Building Act 1991 continues that trend. Seismic stations have been placed on some of the important volcanic fields and others are planned.

The Civil Defence Act 1983 requires all communities to be covered by plans for response to natural disasters. These are reviewed triennially and are currently up-to-date. The Act also requires Government Departments and some other public bodies (including school boards) to plan to survive and recover from disasters. While not all have succeeded in developing appropriate plans, progress is being made.

The Ministry of Civil Defence and local and regional civil defence organisations promote preparedness and community awareness. The Ministry has spent about \$1.5 million over the period 1989-1993 on this, and it is likely that local government has spent another \$1 million.

Warning Systems

As to warning systems, New Zealand has internal systems for meteorological and tsunami events. It participates fully in the Pacific Tsunami Warning System, the World Meteorological Organisation, and the Global Seismic Network.

2. **National Plan**

New Zealand has a National Civil Defence Plan (NCDP) which both provides a model for regional and local plans, and sets out the commitments of central government agencies in disasters.

- (1) NCDP comprises 12 parts and is reviewed on a rolling basis over a three year period. At the moment of writing, the oldest section of the plan was revised in April 1992. Four parts were revised in June 1993.
- (2) A large number of organisations are involved. An annexe to Part One - Response, lists 52 organisations which have specific commitments. The number involved in preparing the NCDP is still greater. And these figures do not include the 78 local government units or combinations which have local and regional responsibilities. While most participants in national planning, and most organisations with responsibilities in NCDP are public bodies, several non-governmental organisations (NGO's) and a number of media and communications companies also take part.
- (3) Implementing agencies are generally central and local government agencies. However, some NGO's, particularly the NZ Red Cross Society Inc., the Order of St John and the Salvation Army, have a role in implementation. So does the Amateur Radio Emergency Corps.
- (4) Government agencies are expected to fund participation in planning and for exercises from their ordinary budgets. The system depends strongly on voluntary efforts by people and organisations. The Ministry of Civil Defence is funded to provide some training events and to pay expenses (but not fees) to those in national planning roles.

3. Natural Disaster Reduction Legislation

The following statutes have major implications in natural disaster reduction:

Health Act 1956
Water and Soil Conservation Act 1967
Local Government Act 1974
Fire Services Act 1975
Forest and Rural Fires Act 1977
Civil Defence Act 1983
Resource Management Act 1991
Building Act 1991
Health and Safety in Employment Act 1992
Earthquake Commission Act 1993
Biosecurity Act 1993

4. Disaster Mitigation Activities

(1) *Identification of hazard zones: hazard assessment*
The Resource Management Act 1991 requires all regional councils to prepare "regional policy statements" which include an appraisal of natural hazards. These are making good progress, with a process of public consultation. It is likely that all will be completed by the end of 1994.

(2) *Monitoring, prediction and warning*
A new System for Monitoring and Alerting Seismic Hazards (SMASH) was inaugurated on 1 July 1993 by agreement between the Ministry of Civil Defence and the Institute for Geological and Nuclear Sciences Ltd (IGNS). It augments networks already set in place by IGNS.

Another recent IGNS initiative has been a seismic network on the Egmont Volcanic field in Taranaki.

MetService has an ongoing role in monitoring weather, and has within the decade (though not specifically as an IDNDR project) installed weather radar stations at strategic points in the country.

Management of the radio spectrum in New Zealand is in the care of the Ministry of Commerce. An emergency services band has been identified and civil defence in collaboration with other emergency services is rationalising the use of the available frequencies.

(c) *Short-term protective measures and preparedness*
All New Zealand is covered by local and regional civil defence plans, with organisations to co-ordinate response to natural disasters. These plans are revised on a three-year basis and fit in with the national civil defence plan, which sets out how central government will respond and what support can be provided in local and regional events. Many local civil defence organisations have annual exercises, while national exercises are held about every four years.

To support standards of local and regional readiness, the Minister of Civil Defence operates a National Civil Defence School. This opened in 1983 and in its first ten years has held 170 events with over 10,300 participants.

Since 1991, an evaluation programme has also been offered. As currently used this has some shortcomings, and a project for enhancing the programme in terms of the evaluation itself and also expanding the evaluation targets to include agencies additional to local government is now under way. It is expected this project will be fully implemented by June 1998.

- (d) *Long-term preventive measures*
In a flood-prone country, afforestation is a traditional long-term preventive measure. At this time in New Zealand expansion of the forestry industry is being promoted more as an economic issue than a disaster mitigation one, but it is likely to have significant disaster reduction effects.
- (e) *Land use and risk management*
The Local Government Act 1974 places responsibility for land use zoning on territorial authorities, of which there are 71. Some have been more conscientious than others in hazard mapping and in ensuring that land use is compatible with the hazards identified. Further emphasis to this has been given through the Resource Management Act 1991, which lays particular stress on protection of the environment for sustainable production.

Following a study of the vulnerability of Wellington to earthquake, a number of utilities have taken risk management steps. An example is provision of a new telecommunications cable across the harbour to improve reliability of Telecom services in the event of a major earthquake.

In 1991 the Government examined its liability under the Earthquake and War Damages Act 1944 which provided earthquake cover to all who had fire insurance. The Earthquake Commission is to withdraw from insuring commercial premises, in order to maintain adequate cover for dwellings and to further deregulate the commercial market.

- (f) *Public education and information*
In the period 1989-93 it is estimated that central and local government, together spent \$2.5 million directly on public education concerning natural disasters.

Civil defence and natural hazards occur in the school curriculum, especially as part of social studies and geography. Civil defence organisations each year distribute about 200,000 leaflets, besides posters, videos and other activities. For example, in the Taranaki region (population 107,000) in 1991-92 the following activities took place:

TABLE 5 - 1991/92 CIVIL DEFENCE EDUCATION WORK IN TARANAKI

Organised public education/awareness meetings as follows:

Services clubs and groups	456 people
Community groups	177 people
Church groups	451 people
Rest homes	66 people
Neighbourhood Support Co-ordinators & groups	232 people

Organised education/awareness meetings as follows:

Primary schools	2823 pupils
Secondary schools	530 pupils
Polytech/Access/Work Trust associated courses	143 students
Early Childhood Centre teachers and supervisors	77 teachers

For Disaster Reducation Day 1993, New Zealand adopted the theme "Stop disasters in schools" with the three strands:

- safety in the school
- the school as a place of refuge
- the pupil as messenger to the household.

In the week in which the day fell, it is believed that 500 (of 2800) schools and 150,000 pupils undertook some activity related to the theme.

Despite the education efforts which have continued for 30 years New Zealand like other countries, is not satisfied with the results achieved, since only about one-fifth of the population could fairly be described as prepared for a natural disaster. As part of the work of the Decade, a Public Education Advisory Committee has been formed (in 1992) to develop more effective education strategies.

As for public information in disaster, New Zealand has traditionally made intensive use of radio. A trial warning signal is played twice every month on over 60 radio stations and national planning provides for Radio NZ Ltd to supply information to all other operators, as well as to the television companies.

In August 1992, the Community Newspaper Association (which does not include the major dailies) surveyed its 107 members as to their disaster preparedness. Only 44 replies were obtained. The results are shown in Table 6:

TABLE 6 - CD PREPAREDNESS IN COMMUNITY NEWSPAPERS (CNA 1992)

	Yes (%)
In regular contact with local CD?	73
Aware of obligations to CD?	60
Have contingency plan?	30
Have emergency power supply?	15
Have back-up press?	36

(The average distance to an alternative press was 100km)

The Ministry of Civil Defence has since provided CNA with a copy of the **Earthquake Business Plan** for each of its members.

5. **Plans to Achieve Decade Targets**

The Decade is not yet a high profile event in New Zealand, and the targets which are being set and pursued tend to arise in the normal flow of institutional work rather than as Decade initiatives.

SECTION C : INTERACTIONS

1. Publications

The Earthquake Business Plan: A Planning Guide for Commercial Organisations, by Keith Westwater, MoCD 1990

The Earthquake Business Plan: A Planning Guide for Corporate Organisations, by Keith Westwater, MoCD 1990

The Earthquake Business Plan: A Planning Guide for Small Businesses, by Keith Westwater, MoCD 1990

The Earthquake Business Plan: Saving your Goods and Chattels, by Keith Westwater, MoCD 1991

Lifelines in Earthquakes, Centre for Advanced Engineering (CAE), University of Canterbury, 1991

Risk Assessment of Industrial and Natural Hazards, CAE, 1992

Volcanic Hazards at Egmont Volcano, by V E Neall and B V Alloway, MoCD, 1991

Volcanic Hazards at Okataina Centre, by I A Nairn, MoCD 1991

Volcanic Hazards at White Island, by I A Nairn, B F Houghton and J W Cole, MoCD, 1991

Volcanic Hazards in the Kermadec Islands..., by J H Latter et al, MoCD, 1992

IDNDR Newsletter Nos 1-9

2. IDNDR Meetings and Conferences

New Zealand does not expect to hold events specifically for IDNDR.

3. International Partnerships

New Zealand collaborates with Australia and other South-West Pacific countries as opportunities offer. As mentioned earlier in this paper, we participate also in such international organisations as the Pacific Tsunami Warning System, the Intergovernmental Oceanographic Commission, the World Meteorological Organisation and the Global Seismic Network.

SECTION D : EVALUATION

The Decade is offering a point of focus and co-ordination in New Zealand to work which would probably be undertaken in any case, but perhaps less efficiently. As an example, Disaster Reduction Day, the second Wednesday of October, provides an annual point of concentration which was clearly lacking before.