

UNITED NATIONS ENVIRONMENT PROGRAMME

LEVEL ONE OVERVIEW IN THE PRIORITY SUBJECT AREA OF NATURAL
DISASTER (DRAFT OCTOBER 15, 1976)

COMMENTARY FOR EXPERT GROUP MEETING: NAIROBI NOVEMBER 1976

Cover passed to Fred K.

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The contents of the draft Overview are an adequate representation of current thinking and research in the subject where that relates to disaster prevention and mitigation of disasters caused by natural phenomena of rapid onset.

Understanding of the philosophy of precautionary strategy for natural disaster is not widespread, the subject being still in its infancy and unrecognised outside a relatively small and exclusive specialist circle. The Overview itself will help to promote further understanding of a complex subject but in order that that should be facilitated with the greatest ease there are two prerequisite provisions. First, the title which claims to be an 'Overview' must carry a sub-title clarifying the emphasis of the document on prevention and mitigation of disasters caused by natural phenomena of rapid onset. These exclusions are described in the introductory chapter but greater emphasis needs to be given to them at the outset. Secondly, terminology within the document must be standardised throughout. 'Prevention', 'prevention and mitigation', 'mitigation', 'amelioration', 'reduction of risk' and 'natural hazard reduction' are all terms used with similar meanings. This may indicate a hesitation or doubt about using 'prevention' on its own, a doubt that this commentator would share, but such doubts should not be so apparent. The introductory chapter uses 'prevention and mitigation' by way of definition and use of this double term should be standardised.

Whilst some parts of the Overview successfully describe the particular problems of developing countries in formulating measures for disaster mitigation, the overall approach of the Overview is that of an external monitoring and assessment of phenomena related to others, rather than an attempt to describe methods for internal monitoring and assessment of direct experience. For example (p.24) 'To investigate the merit and demerit of flood plain occupation, a detailed analysis of flooding and its associated problems is always justifiable'. (If only because, just as populations accept risk, so predisaster planners must accept populations.) Moreover, much of the Overview has a scientific and top-heavy technological approach and inadequate attention is given to the least requirements or most simple methods. Furthermore, social and economic aspects, particularly where these relate to vulnerability, receive scant methodological attention despite excellent descriptive paragraphs in Chapter 5.

Specific comments are made under the following chapter headings:

This relates to disaster prevention & mitigation measures - ie. they include measures for in-situ population.

Chapter 1 - Introduction

Perhaps the introduction should include a paragraph on the inception of the Overview, its history, methods of compilation and comment, and its purpose.

- 1.4. (top) Greater emphasis would be appropriate to the dual role for efforts to reduce disaster risk. On line 4, 'or' should surely be 'and'.

Chapter 2 - Natural Hazard Analysis

The preface to the Overview states that work is continuing on this chapter. As it stands, however, it has some duality with Chapter 3, and it would seem that this chapter could well be combined with Chapter 3 which contains an analysis of hazards, a description of data resources and techniques without which hazard analysis could not proceed. A title might be 'Natural Hazard Data Analysis'.

The title of Chapter 2 as it stands should be 'Natural Hazard Analysis' as it is in the Table of Contents.

The sub-headings of Chapter 2 need clarification between major and minor sub-heads and 'Major requirements' requires further definition.

There are frequent references to techniques and conditions which assume an availability of resources not always the case, and consequent references to complex technological or scientific methods instead of the simplest methods, or least requirements for commencement stages.

- p.12 'prevention and preparedness are directly dependent on increased understanding of natural phenomena'.
- p.14 data requirements are not commonplace.
- p.21 'Selected Hurricane Tracking' and references to 'USA, Korea and Japan' re-emphasise an unnecessary focus of attention on developed countries. 'Japan, for instance, is an example of a country'; the added words might reduce the focus in this instance.
- p.28 '... hoping of course that should extreme floods occur the State will undertake to evacuate people and property and will then accept responsibility and give financial aid for reinstatement'.

- p.32 (top) active ~~faults~~ faults can only be known where expertise and instrumentation has been available for seismic monitoring. This has not yet often been the case outside the developed countries.
- p.34 (top) the removal or downgrading of buildings has to be a practical possibility from all considerations before even 'some reasonable timetable' can be determined. The subsequent sentence should be clarified as possibly a more appropriate alternative.
- p.41 The 'less elaborate systems' (penultimate para) could use-^{be} fully ~~be~~ described.
- References to building construction often imply a concentration of attention on major projects which are the product of sophisticated design and construction techniques. Insufficient attention is given to the requirements of minor or self-built development.
- p.32 'important structures'.
- p.11 Any implication here that storm surge and flooding, tsunami and landslide, are secondary in impact to tropical cyclone and earthquake themselves should be eradicated.
- p.12 'Secondary' phenomena should, in any case, not be underestimated.
- p.14 Other parts of the South Pacific use 'hurricane'.
- p.15 the variety of factors upon which storm surge severity depends could be usefully included, e.g. tides and coastal elevation.
- p.16 (top) Climatological studies could also be related to small island topography or the location of settlements.
- (2nd para) a minimum period of ten years for data collection is surely much too short, especially in relation to historic time referred to in a later chapter.
- p.17 It is important to apply some perspective to the results of modification techniques for tropical cyclone if optimism is not to mislead.
- p.18 By comparison with adjacent charts, these are not 'tracks' but indications of principal areas of hurricane occurrence.
- p.24 (2nd para) Acceptance of risk can be made easier by the implementation of mitigation and preparedness techniques.

- p.27
(2nd para) should not the compounding of the flood problem by agricultural malpractice and deforestation be included here, as referred to in the introduction.
- (line 6) Is it really a hazardous task?
- p.34 Tsunami warnings are only practical where the generating seismic event has been far enough away to give sufficient time for warnings to be prepared, despatched, disseminated and acted upon. For locally generated tsunamis ~~the~~^{an} earthquake itself is often the only warning.
- p.39 Does the first paragraph have any meaning?
- p.40 The present wording of the first two lines appears not to make sense.
- (end of
1st para) If this means 'vulnerability mapping' should not this term be used.
- p.40 Landslide appears to be little different to other phenomena in the absence of mapping for realistic land use zoning, or in not enjoying realistic awareness of potential hazard, or in implementation being impeded by lack of political motivation, and (p.41) in having little information as to the timing of a landslide event.
Should this not be clarified and explained.

Chapter 3 - Data Resources

- pp.46 (bottom)
and 51 (centre) The relationship, for practical and effective implementation, between techniques for monitoring and mapping and disaster impact upon settlements, social response and decision-making must be emphasised if repeated concentration on scientific and technological aspects is to be avoided
- p.53 Single-minded approaches to hazard mitigation may increase disaster risk through a focusing of attention causing a reduced awareness of other sources.
- p.55 The relationship of the chart requires explanation.

Chapter 4 - Vulnerability Analysis

Would a preferable title be 'Vulnerability Analysis and Reduction', or simply 'Vulnerability' as in Table of Contents.

Vulnerability has as much to do with much of what is written in the following chapter, e.g. p.75 'Vulnerability to natural disaster is a function of poverty and limited options. It cannot be meaningfully considered outside the context of general economic and social development'. If this is so, then assessments of vulnerability must include social and economic factors for analysis of populations as well as settlements, and the development of methodologies for these inclusions must be developed and applied.

The paragraph on page 63 which is made to apply to building codes ('studies of vulnerability and social response to natural hazards are to a much greater extent locationally specific') should be made to apply to social and economic analysis also.

- p.58 'Temporary' and 'permanent' are unfortunate terms. Whilst warnings themselves are by their nature temporary, they do rely on permanent installations and services.
- p.58 structural solution should also include building construction of all types.
- p.64
(1st para) Another factor affecting building construction is the often restricted choice and availability of building materials.
- p.62 (top) 'design' implies, although does not always mean, sophistication. Not all buildings enjoy a design process of this kind. Therefore 'design and use of all kinds of buildings'.
- p.67 (top) Alternative methods of reducing loss of life referred to mean that there must be as much attention in building codes and elsewhere to the environmental planning and layout of buildings of all kinds, as to their design and construction.
- p.69 Simulation of Natural Disaster Effects.
Are the techniques described here relevant to a world Overview?
The section is over-technical, omits the social-economic content of vulnerability analysis and ignores statements made in Chapter 5.
- p.69 (1st para) A comparison between this description of method and that of master planning (p.67) is appropriate because simulation too is a static concept.
- p.71
(2nd para) Advice has been given against selection of separate ('various') hazards for specific attention (Chap. 3, p.53).

p.71 the problem is surely so major as to rule out the usefulness
(centre) of the technique.

Chapter 5 - Policy Implementation

This chapter is particularly prone to misuse of terms, e.g. pp. 76,77.
(ref. introductory comment).

- p.72 The step from technical capability to realisation of disaster prevention is not an automatic process! Separate and additional processes to achieve implementation are required and should be allowed for in programmes and budgets if results of research are to reach the people for whom they have ostensibly been prepared.
- p.73 Architecture and Planning cannot simply be assumed as second in line to Engineering! They do not rely on 'carry-over' but are self-reliant. It is true perhaps to say that they have been slower to respond[&] to incorporate available knowledge related to building design and construction as a response to disaster risk. (But that reinforces this point.)
- p.74 Fear, often a result of ignorance, can also contribute to a fatalistic attitude towards natural disaster.
- p.75 Situations of risk acceptance vary also according to whether 'acceptance' is in a state of knowledge or in a state of ignorance of the risk, in other words, risk may appear to the outsider to have been accepted, when in fact it may not even be realised.
- p.78 (bottom) It should not only be 'conceivable' but surely essential that education and information programmes should accompany disaster prevention programmes. A stronger statement is required here.
- p.80 Insurance facilities and resources are not available in many countries. 'Insurance, where this exists, has also served ..'
- p.82 (top) A more widely applicable wording might be 'The greatest potential for disaster prevention lies in the planning and construction of new development'.

Chapter 6 - Activities in Natural Disasters

This commentary provides an opportunity to add information concerning a recent project undertaken by the Disaster Research Unit and the production of:

'A Report of a Pilot Study to Establish Guidelines
for the Management of a Regional Fund to Provide
Insurance for Natural Disaster'

for the Commonwealth Secretariat and South Pacific Bureau for Economic
Co-operation.

Resources allocated : 1976 : \$6000

Chapter 7 - Recommendations

Proposed additional recommendations.

1. Research into improved techniques of 'action planning' to take account of 'unplanned' development that has already taken place (p.67). X
2. Study of low-technology indigenous building methods and suggested appropriate improvements for disaster-prone locations. /
3. Research into the formulation of methods for the field assessment of:
 - a. vulnerability as a function of social and economic development status; /
 - b. vulnerability as a function of poverty, powerlessness and limited options. /