

CONTENTS

FOREWORD	7
PREFACE.....	8
DISASTER RISK MANAGEMENT KNOWLEDGE CENTRE.....	10
SHORT EXECUTIVE SUMMARY	12
CONTENTS.....	16

1. Current status of disaster risk management and policy frameworks..... 18

2. Understanding disaster risk: risk assessment methodologies and examples..... 36

Introduction.....	40
2.1 Qualitative and quantitative approaches to risk assessment.....	44
2.2 Current and innovative methods to define exposure	59
2.3 The most recent view of vulnerability.....	70
2.4 Recording disaster losses for improving risk modelling capacities	85
2.5 Where are we with multihazards, multirisks assessment capacities?.....	98
Recommendations.....	116
References.....	119

3 Understanding disaster risk: hazard related risk issues

Section I. Geophysical risk..... 132

Introduction.....	136
3.1 Geophysical risk: earthquakes	138
3.2 Geophysical risk: volcanic activity	151
3.3 Geophysical risk: tsunamis	164
Recommendations	179
References.....	180

3 Understanding disaster risk: hazard related risk issues

Section II. Hydrological risk..... 192

Introduction.....	195
3.4 Hydrological risk: floods	198
3.5 Hydrological risk: landslides	209
3.6 Hydrological risk: wave action, storm surges and coastal flooding.....	219
Recommendations	228
References.....	230

3 Understanding disaster risk: hazard related risk issues	
Section III. Meteorological, climatological and biological risk	240
Introduction	244
3.7 Meteorological risk: extra-tropical cyclones, tropical cyclones and convective storms	246
3.8 Meteorological risk: extreme temperatures	257
3.9 Climatological risk: droughts	271
3.10 Climatological risk: wildfires	294
3.11 Biological risk: epidemics	306
Recommendations	316
References	318
3 Understanding disaster risk: hazard related risk issues	
Section IV. Technological risk	336
Introduction	340
3.12 Technological risk: chemical releases	341
3.13 Technological risk: nuclear accidents	357
3.14 Technological risk: Natech	367
Recommendations	378
References	382
4 Communicating disaster risk	386
Introduction	390
4.1 Public perception of risk	393
4.2 Decision-making under uncertainty	404
4.3 Last mile communication	413
4.4 Good practices and innovation in risk communication	422
Recommendations	431
References	433
5 Managing disaster risk	442
Introduction	446
5.1 Prevention and mitigation: avoiding and reducing the new and existing risks	449
5.2 Preparedness and response	465
5.3 Recovery and avoiding risk creation	475
5.4 Risk transfer and financing	489
Recommendations	500
References	502
6 Future challenges of disaster risk management	516
ANNEXES	530
ACKNOWLEDGEMENTS	532
HOW TO CITE	546