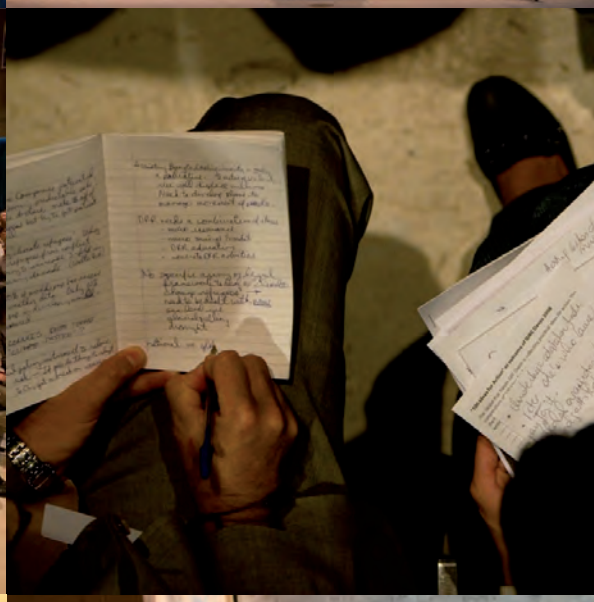
IDRC Davos 2008 *Appendix*

"100 Ideas for Action" to support the Hyogo Framework for Action



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“100 Ideas for Action” - Appendix

More than 1000 people from around 100 countries came together at the IDRC Davos 2008. Experts from the different fields of Diaster Risk Management and Prevention - covering topics from climate change issues, critical infrastructures to migration and more - in order to find integral risk management solutions.

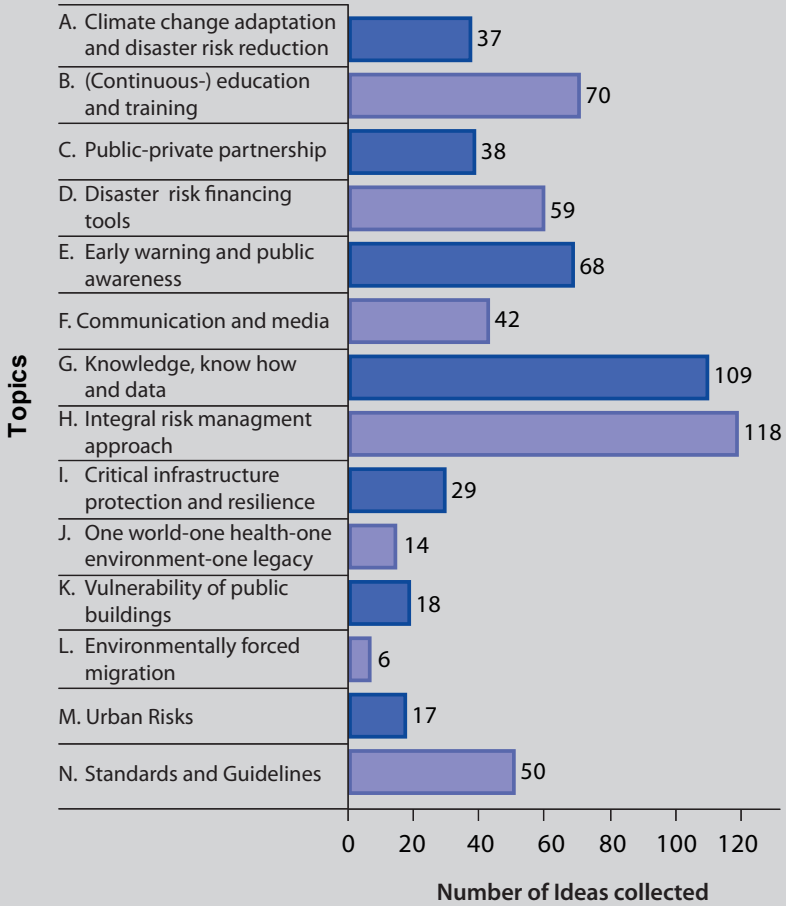

Fig. 1: Fourteen main topics of importance (A-N) were identified and assigned to the 675 collected ideas. The graphic on the left shows the numbers of ideas that fall within each topic.

This appendix comprises all ideas collected by the IDRC participants in the course of the “100 Ideas for Action” activity - ideas to share, to be taken-up and to put into action - in order to improve disaster management and prevention. The collection includes ideas from ballots filled out by the conference participants, as well as session outcomes and video statements given at the “Red Chair” area in the conference hall. For your covenience, the ideas were assigned to 14 topics (Fig. 1), but are sorted randomly within these topics.

For more details on the “100 Ideas for Action” project, the Global Risk Forum GRF Davos foundation and the International Disaster and Risk Conferences (IDRC), refer to the main document at www.grforum.org.

Contents

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Abbreviations used:

CCA - Climate Change Adaptiation

DRR - Disaster Risk Reduction

A. Harmonizing climate change adaptation and disaster and risk reduction measures

1 Climate change vulnerability and adaptation: linking research with policy practice at the local level (full description included in the main document).

2 Create fora on climate change adaptation (full description included in the main document).

3 Initiate local workshops (municipal or lower level) where DRR officials, CCA experts and communities learn together and frame a joint strategy for future development with CCA and DRR in mind (full description included in the main document).

4 Climate change is the single biggest threat and more money needs to be spent on adaptive efforts. Should develop new tools for local communities (for help in city planning, etc.).

5 More research is needed on which DRR interventions are adopted to abbreviate the impacts at the local level of climate change and which only have limited impact and relevance.

6 It is important to develop meaningful community partnerships on CBDRM and climate adaptation at the community level. Shared learning dialogues are an excellent tool to promote the establishment of such partnerships between different sectors and spatial levels.

7 As a social scientist involved in a number of crosscutting issues, I believe the most practical idea for action would be mainstreaming disaster management into already existing policies and activities within different ministries or government programmes.

8 The definition of "disaster" in the context of climate change neets to be reviewed. Disasters may not only be "dramatic" happenings in compressed time causing huge losses. They may actually be gradual over the years (desertification, erosion, submersion) leading to the same catastrophic results. Such reviews may bridge the gap between climate change and DRR.

9 Before any climate change "projects" are launched in Africa, there must be an explicit statement that peoples' rights haven't been violated.

10 Keep in mind that in space there is a part of the world's critical infrastructure too!

11 Adaptive efforts for climate change should not only be based in funding, but instead in the actions of the earth's inhabitants.

12 Why are "natural" disasters only a matter of common (global) concern (Hyogo) while climate change is a matter of common responsibility? Let us make disasters a common responsibility.

13 Make a link between research about climate change and the subject of genetically modified plants. Importance of possibility to publish the results of the research.

14 Bring the climate change community and the diaster community closer together to make adaptation, social and disaster issues get a stronger voice in climate policy negotiations.

15 Climate change extremes are yet to be determined. It is hard to accurately devise the building codes as a result. Collapse of buildings is the most likely cause of death in earthquakes. Need for sample for action, factory coverage, need for reason, high cost of retrofitting. Training of local government. Research is required.

16 Don't be afraid of competing with the CCA community.

17 DRR and climate adaptation community need to work with key actors in the water and urban sectors. Projects with key actors at the policy or implementation level are essential.

18 Climate change is only one of many present and future risks for cities and nation states (others are for example bird flu). Urban risks are complex and risk assessment requires the latest technology. However, economic resources are scarce and often limited in integrated risk management.

19 Develop a commonly accepted model for climate change with enough granularity to promote local decision making.

20 Have DRR included / taken care of in CCA negotiation.

21 If DRR is "no regrets" approach to climate change adaptation, then environmental management is "no regrets" approach to DRR (due to the multiple benefits of environmental management - environmental, economic and social).

22 Information and Education of populations on risk reduction must be a priority in the Climate Change Adaptation Framework.

23 Gender issues of climate change, rural pop. men are driven to suicide, women must take on huge responsibilities.

24 Looking at disaster through a cultural lens as a topic for Davos 2010! What role does culture play in DRR? What role does religion play?

25 Realise that there is scope for harmonisation between DRR and Climate change adaptation.

26 The definition of "disaster" in the context of climate change needs to be reviewed. Disasters may not only be "dramatic," happenings in compressed time and causing huge losses overnight (e.g. tsunami). They may actually be gradual over years (e.g. desertification, erosion, submersion), leading to the same catastrophic results. Such reviews may bridge the gap between climate change and DRR.

27 Focus on developing non-fossil fuel sources. Will always need energy source, so invest in finding CO2 free ones and non-polluting ones.

28 Have DRR and Climate Change Adaptation people in the same post emergency team.

29 Re-assessment of protection measures are needed over periods of time to cope with climate conditions

30 Improve the level of decision making process for climate change. All synergies and approaches should be considered regarding the balance between mitigation and adaptation and how it affects the world globally. Adaptation to climate change must think that it's not a future situation but a continuously changing situation that needs robustness in adaptation policies but also take into account that mitigation makes adaptation easier and cheaper. Timescale should be considered in all climate change models.

31 The SDR (subcommittee on disaster reduction) "Grand Challenges for Disaster Reduction" can be used globally for disaster planning and policy. The 14 implementation plans are useful for agency investment strategies.

32 UN-ISDR should be more visible and should play a stronger coordinating role. It should define clear priorities within the UN system and the member states, also in order to materialize the much needed link to the DRR climate change agenda.

33 Establish local level networks/ call center to address climate change and Disaster Risk Reduction.

34 Climate change could partly be based on global distribution of artificially modified organisms (genetic pollution). Companys who produce artificially modified organisms should take a break and wait until scientists to improve the methods in order to prevent mistakes and to protect our nature (from destruction of the biosphere and climate change).

35 Climate change will be a greater issue for our children and future generations. Thus, we need to find ways to involve, activate, and energize

youth on this important issue and help them use new technologies (e.g. YouTube) to create enthusiasm and momentum for climate change.

36 Ask every country what they have done to implement the Hyogo Framework for Action. Undertake a study to show how disaster death tolls were dramatically cut over the last century.

37 Handbook on similarities between Climate Change adaptation measures and disaster risk reduction measures - how to harmonize the two efforts.

B. Strengthening (continuous) education and training

1 Train future generations in "life skills" through a global program in schools: basic first aid and life saving, what to do for the disasters that might face along with their families, and how to plan for their own survival (full description included in the main document).

2 Raise awareness of risk and risky behaviour in children by using mass media (full description included in the main document).

3 Improve the capacity of non-skilled first responders (full description included in the main document).

4 Improve the common, popular understanding of DRR by involving pupil and teachers through competitions like: How safe is my city? How safe is my school? How safe is my way to school? (Full description included in the main document).

5 To avoid frontiers on the study of natural hazards, study the natural phenomena itself, their characteristics, effects and mode-citation.

6 We can pay for planning now or pay for tragedies after they occur.

7 Education and training: Microzoning, design, construction (standards and technical experience). Beyond earthquake: lessons on other natural hazards. Accessible means, common communications.

8 Local community knowledge/risk or hazard familiarity is essential for community participation and engagement. Hence, this underlines the importance of communication, education and training.

9 The unrevealed problem of our society is estimation of risks connected with young people learning and studying.

10 2010-2020: Decade of implementation of know-how (promotion and concentration of the scientific activities toward doable and usable and simple and implementable actions).

11 Latin America and Caribbean countries should continue to enlist, engage, and nurture emerging professionals in disaster risk reduction on projects. The starting points are universities and professional organizations.

12 Necessity for common culture/language (between schools and practitioners) is crucial for sustainable management of emergencies.

13 Discussion: Why are there so few women in decision making? Education is key.

14 If they are trained, children can be very useful when it comes to protecting themselves or helping others evacuate during a disaster/hazard situation.

15 Emergency planning has to be a continuous process including education, exercises and review.

16 Novel approaches to disseminating information through games to open-minded children. Knowledge imparting while having fun (teachers and students).

17 Positive and negative learning experiences define qualities of good teaching.

18 Creating awareness through disaster education and dissemination of knowledge especially directed to vulnerable groups of society.

19 Women's contributions to mitigating climate change should be increased. Need for education. Combine indigenous knowledge with modern methods.

20 Consider the ways the data is accessed (open sources).

21 Educate governments/public sector about insurance/reinsurance/capital markets solutions that help them to finance natural disaster risk more efficiently.

22 International Risk Management will benefit a lot from increased education and knowlege management. A lot of experience exists in different sectorial areas for technical hazards and natural catastrophes. This knowledge should be put together and dissiminated to the people in the different countries and different areas.

23 GIS platform.

24 Need for better data, need for empowerment of the coordination of data/collaboration of research/data institutions.

25 Educate politicians and decision makers through media sensibilization (capacity building) for disaster prevention.

26 Quick implementation needs easy and accessible software tools. Evaluation of different alternatives in short time periods is necessary.

27 Educate the poor, particularly poor girls (reading, math, and job skills).

28 Educating people to be prepared so they can respond correctly to disasters.

29 Small invisible disasters are in aggregate as impactful as large disasters

30 Target oriented training for vulnerable community in developing countries on DRR/CCA.

31 The development of a "safety culture" through Education is a long-term process that requires commitment and coordination of various groups of society such as children, parents, teachers, policy-makers and disaster experts. There is a need for the partnership of different organizations involved in disaster reduction combined with placing "good governance" at the heart of "disaster management" and "public awareness."

32 Try to preempt the „landscape" of DRR and CCA in the years 2020-2025 and plan accordingly.

33 Climate change and risks as mandatory topic for school Educational programmes. "Know the risks of your country."

34 1. Think about the rights of people. 2. Fuel alternatives to petroleum are needed (and available, so research must be done) without abusing the rights of others (e.g. biofuel-food-problem).

35 Adoption as part of lifestyle: Part of education curriculum; part of public service institutions and code; mainstreamed in media and communications; mainstreamed in livelihoods value chain; mainstreamed in "local" social and religious systems.

36 Development of Education programs for specialists in industrial safety and environmental engineering for oil, gas and chemical industries.

37 Introducing and teaching in schools risk/disaster management.

38 Establishing high quality seminars and forums for gathering academics and the experienced for collaboration.

39 Establishment of department and center for disaster management. Games as the training basis for increasing the skills.

40 Local and international researchers should work with students from disaster affected regions to monitor (long-term, 10 + years) the evolution of recovery efforts in biophysical and socio-economic systems.

41 Make disaster Education and basic life skill traning (like first aid) compulsory in highly vulnerable countries.

42 Organize an International Online Training with e.g. Gemnet & Multidisciplinary Program on Disaster (Prevention Education).

43 Positive narratives to convince individuals and families that they are responsible for themselves and their loved ones when disaster strikes.

44 Project HELP proposal: H is for hope in research, E and P stand for education and prevention, both of which need to be linked to solve problems, and the L stands for leadership.

45 Support the creation of children committees for DRR to be integrated with the local and/or municipal committee to ensure that the children's concerns are heard. It is their future that is at stake. Children have usually very good and innovative ideas!

46 Support the culture of self-responsibility (families, schools, etc.).

47 Train municipality staff involved in disaster reduction GIS-use (e.g. open source GIS such as ILWIS).

48 Training course for local authorities should be provided in all regions.

49 Using the GRF platforms as a mechanism, turn the 700 to 900 global disasters a year into opportunities for capacity building on local and regional scales.

50 Disaster Risk Reduction Education to be made compulsory at schools and colleges to build a resilient future community.

51 Providing "tool kits" for countries to develop their disaster reduction programs. The tool kit should cover areas such as risk management, disaster management, training aids, resources available.

52 Education is of course a key to disaster reduction, and also to disaster management. This suggestion will focus on professional, not public, Education, although the latter is obviously vital too. Professional Education requires 1) the aggregation of a body of information and skills to teach, 2) the formulation of a curriculum, 3) its use in teaching, 4) conferral of qualifications (diplomas, degrees, etc.) as a form of official recognition of Educational achievement, 5) creation of official roles (employment, voluntary, appointment) that fully utilise qualifications. The weakest link is the last one, no. 5. Authoritative analysis and decision making require qualified people. Let us work on that, but at the local level, as well as the international level, for there is too much discrepancy between international expertise and local ignorance. Training standards need to be more universal.

53 It is key to promote horizontal learning based on tangible cases. One has to move from generalization to more context-specific and tangible examples of practical implementation of integrated DRR-CCA programmes.

54 More research is needed on which Disaster Risk Reduction interventions are adapted to address the impacts of climate change at the local level and which have limited impact/relevance.

55 In order to achieve an efficient code administration and enforcement system, education and training programs for all building personnel (building officials, buildings inspectors, contractors, etc) is critical. Registration program of design engineers, architects and contractors should also be considered.

56 Continue to look for practical solutions to assist in the understanding of risk and learning and knowledge. Build a "tool kit" for disaster risk reduction.

57 Courses for the climate change negotiators to rise their awareness for disaster risk reduction.

58 Create and better use existing training platforms (UNDAC/DMTT).

59 Give community-based energy sources (non-carbon based), land and suitable crops/medical care and free public education to sustain the community.

60 Educate politicians of developing countries in disaster management, to help them make good decisions.

61 Game is the basis for knowledge and communication. Friendly and interactive games can be an opportunity to involve young people in understanding the natural and anthropogenetic hazards and risks. As an example, see the web-site: e-oikos.net.

62 Help us to provide a Global Emergency Medical Net (GEMNET), and independent, global, mulltidisciplinary, apolitical and standardized trained organisation providing help in the aftermath of natural disaster at the disposal of the affected country (tuition, educating program online).

63 Hospitals should remain functional after hazards strike. The preparedness of health facilities can be facilitated by health professionals and those in other disciplines, such as engineers, who are trained together in courses which address risk assessment, emergency planning and incident command systems. The Hospital Preparedness for Emergencies (HOPE) has been developed and implemented in Asia over the past 7 years with support from USAID/OFDA.

64 In the UK, there are Resilience Forums at the regional and local levels. They bring together representatives of emergency services, planning and the community. There are also Media Resilience Forums with representatives of local and regional mass media. The idea is similar to FEMA's Project Impact, introduced under Clinton, abandoned under Bush Jr. With cultural adaptation, the idea could be applied in many other places, but it needs a mechanism to ensure that recommendations are implemented (i.e. that a forum is not simply an emasculated talking shop. Therefore, 1) design and set up a resilience forum, 2) give it a very clear brief, 3) create an accountability mechanism and a robust means of implementing recommendations and ensuring change.

65 Learning and development using personal experience will further the concept of disaster risk reduction at a faster pace. Using personal experience can change minds and foster trust.

66 However well-prepared, staff of hospitals are quickly burnt out during disasters because of physical and psychological reasons. To address this, staff of another hospital (not in the same region) can get acquainted with its sister hospital before the disaster and replace the tired staff after 3-4 days of initial work.

67 First aid Education and emergency relief procedures through school curricula have not given desired results. Most countries have deleted them from curricula. All such Education can be imparted through a UN-sponsored, well-thought out and well-made film, which can be shown to the maximum number of school children ONCE. The film may have a story-like script and should cover all natural disasters like earthquakes, tsunamis, landslides, floods, etc. Children are likley to learn more and remember more of the emergency procedures/relief measures by seeing them in a film.

68 Organize an international knowledge for children on resilience. We have defined a program book in France: http://www.iffo-rme.fr/default.htm.

69 Technical skills and abilities are essential elements in Disaster Risk Reduction, but only to the extent that they can be related to wider human dimensions, public understanding and acceptance (practice/action).

70 To be effective, volunteer efforts or arrangements really need to be supported beforehand by organizing structures, training, basic resource or material availability. Hence, this requires prior guiding or directing arrangements and responsibilities.

C. Promoting public-private partnership

1 Solve the problem of data sharing (full description included in the main document).

2 Disaster relief and rehabilitation should be undertaken with scientific planning and should involve all stakeholders.

3 It is important to develop meaningful community partnerships on CBDRM and climate adaptation at the community level. Shared dialogues are an excellent tool to promote the establishement of such partnerships between different sectors and spatial levels.

4 Develop and use models of cooperation from within such regional networks with national platform outside the region.

5 Community engagement is a key process in information sharing, mutual understanding and development of trust between risk management agencies and the community.

6 Need to know risk at the community level and need to have greater public-private partnership.

78 A multi-sectoral approach is needed for DRR. More corporate participation would help the outcomes of future conferences.

8 No persons exercising the power (politicians) are at this conference.

9 Innovation was the key to success in each of the five presentations in the session and the dialogue from experiences in Venezuela and Puerto Rico demonstrated that partnerships can be forged successfully between diverse people and organizations representing a wide variety of geographic scales (i.e. very local to transregional) and time scales (i.e. a few years to several decades). Success is directly related to finding innovative ways to overcome barriers in knowledge, communication, funding, and leadership.

10 Latin America and Caribbean countries should continue to expand existing regional and transregional partnerships and create new partnerships using organisations such as Organisation of American States and Pan American Health Organization to institutionalize the process.

11 Multi-organizational partnerships and alliances with stakeholders = MOAPS. Risk and vulnerabilities have out-evolved us: globalization of risks, risk with a higher level of surprise, people and process and technology.

12 Private - public partnerships should be strengthened to make a major breakthrough.

13 Centralized coordination with strong measures in decentralization on programs with high levels of participation brings good results. A strong responsibility relies on government good practices. Good experiences should be disseminated and spread throughout the world immediately.

14 As the CAT bond market grows, public sector can leverage expertise in structuring and catastrophe modelling.

15 Include health and urban planning, basic infrastructures. Epidemics increase the impact of disaster (e.g. cholera). Bad hygiene practices. PPPs (find balance between profit and universality of services).

16 Increasing roles and responsibilities of private sector (NGOs, private and charity organizations via supporting them by delegation authorities).

17 Partnerships forming due in part to increasing connectivity interdependence such that problems are too complex to be solved by any one entity.

18 The many different types of solutions or products are very complex. Many stakeholders are involved (politics, science, people at risk). Promising pilots are launched.

19 Session Risk Managemnet Tools for Disaster Reduction. Topics: Tools for Training from Public and Private institutions. Communication platforms; Modeling the risk costs and losses; Bridges and exchanges were build between the different partners.

20 Adaptation to climate change needs to comprise all DRR aspects. Public-private partnerships need to be rethought in the light of regulatory aspects. Regional climate offices can aid in making DRR more practical.

21 Building a disaster resistant business. Partnerships need enterprising individuals.

22 It seems to remain a challenge to find ways for the corporate sector to engage; one effective method can be simulation activity. Our NGO uses simulation a great deal with CEOs and executives. We find it brings a different level of engagement from them (the "AMA" factor, if you will). We have discovered that corporate leaders find deeper types of motivation and commitment as a result.

23 DRR should not only be of interest to civil society (as it is now), but also to the private sector (which is mostly left out).

24 Promote parallel and linked business continuity planning and emergency planning - e.g. for local authorities and others units of public administration. The UK has good models to follow.

25 Public/private partnership: a private company developed a successful risk early warning service: www.e-secure-it.com. This service alerts on natural, human, technical and global threats.

26 SwissRe has been considering the benefits of appointing a chief risk officer for a large municipality or country who would take a holistic view to risks.

27 Allowing private-public partnership in generation of climate and weather information, value addition and delivery on agreed protocol.

28 Example of successful PPP: Turkish catastrophe insurance pool. Algerian catastrophe insurance programme. How to create CAT bonds - hazard mapping quality depending on data. CAT models are opportunities for government and donors (depend on: databases, building code, emergency plannin and response, financial protection, model development.).

29 Benefits can be gained from bringing public-private organizations together. Private companies have information and capabilities that can assist communities, regions and nations in disaster reduction.

30 Integration of various stakeholders:government, private sector, for disaster risk management.

31 Multi-sectoral approach for public-private partnership.

32 Need for insurance, public and private sectors to collaborate.

33 Raising individual knowledge of 'community' risk. Integration of various stakeholders: government, private sector for disaster risk management.'Legal framework' needs to be in place at all levels for the 'ideal' to be transformed into 'action' in all countries.

34 These types of initiatives need strong participation of stakeholders and private/public alliances.

35 With climate change becoming more real and the demand for modelling, also from private catastrophe modelling, increasing, model approaches between private and public agencies could be better compared in terms of approach, variable treated and uncertainty outlined.

36 Participative cooperation between communities, authorities and businesses. Train, support and involve human resources accordingly.

37 Remind Scientists, there are overlooked disasters. Not only earthquakes, floods and other natural disasters, but also children dying of

pneumonia, under-nutrition, people dying in work accidents etc. in developing countries (based on povery, ignorance, mismanagement, influence of intl. bodies). These man-made disasters should not be forgotten.

38 Multi-organizational partnerships and alliances of stakeholders can greatly increase community resilience. Key to know how to create and sustain these partnerships.

D. Searching for disaster risk financing tools

1 Develop Pilot Projects demonstrating how earth observations and weather forecast models can be applied to micro-insurance (small farming, indicator based insurance; full description included in the main document).

2 Provide incentives for preparing against disasters (full description included in the main document).

3 Donor organisations should invest more in risk prevention and mitigation.

4 Financial support is necessary to the HFA.

5 Sponsor meeting of DRR network organisers to develop capacity to manage networks, facilitate further developments and provide the means to connect different networks.

6 Suggestion for a sponsored meeting of network organizers to facilitate further developments. Motivated networks should be rewarded/ supported by being funded and invited to gatherings such as IDRC.

7 Charitable foundations and corporations can leverage their funding to the benefit of developing countries affected by natural disasters.

8 Check the funding for CCA and give a chance to help to implement the principle that who causes a damage has to pay for IT.

9 Develop innovative schemes for creative financing (development fund, bank and insurance money).

10 Financing in south and middle America from banks so that more gets achieved. How to address the sea level: drainage. Make the information about the weather in these regions more public.

11 Elaborate a good „package“ on how money could be more wisely used for DRR.

12 Funding mechanism that are big enough for DRR integrated projects (DRR and chronic food insecurity or HIV and gender). Increased funding towards to bring DRR up.

13 Help the countries to realize how much it will cost them if they do not implement the HFW based on their strategical resources and infrastructure (which in most cases sustains their economies).

14 Key principles for public intervention: Promote catastrophe risk financing within the DRA framework, enhance sensitive catastrophe risk markets, use risk-based signal to encourage risk mgmt, create public subsidy program, develop customized cat risk solutions.

15 Key roles for the donors/IFIs: Conserving power, promoting public goods, providing technical assistance for innovative catastrophe insurance solutions.

16 Look for modalities to give money to sub-sovereign authorities.

17 Sustainability taxes on investments to be paid by the private investors.

18 Necessity of adaptation funds for disaster afflicted countries.

19 Risks under climate changes: who pays for risk? Governments, insurance industry.

20 Using re-insurance as a well balanced drive for CIIP of governments and companies.

21 The disaster definite index (DDI) is an index for a macroeconomic and/ or financial perspective. Country has an incapacity to cope with/recover from disasters. Computing a distribu-

tion function helps to decide what kind of security bundles should be implemented. Annual loss expectancy index (ALE).

22 We need reinsurance brokers who can attract reinsurers at the right price, and a locally connected agent is necessary to get things going.

23 Currently insurance has very low flood prevention (less than 10%), no current initiatives to minimize risk and no models to assess risk.

24 "Insurance Risk Framework to assess Management Capabilities to respond to adverse events."

25 Losses are born by government and households in developing countries. Insurance penetration is low. Key principles for improvement: Promote catastrophe risk formality in the dialogue with developing countries. Enhance competitive models. Use CMI based signal.

26 Demonstrate better economic relations in disaster prevention investments in infrastructure, other investments in recovery and rehabilitation, do financial analysis.

27 Existing methods/procedures for economic loss assessment should be compiled and analyzed and made available (IDRC website).

28 Mainstreaming DRR should take into account issues of equity, particularly with regard to poor communities, subsidies (e.g. for risk insurance) are not necessarily a dirty word, particularly if the "polluter pays" principle is rigorously applied (in many cases the poor are already paying the price of environmental and other damage caused by others.

29 Innovative financing mechanism to respond to disaster and for risk reduction.

30 Example of Bangladesh, where people know the risks, but they don't have proper ways of dealing with them. Donors are needed to fund research. Shelters are crucial for countries affected by tornado.

31 Example of effective preparedness program in Bangladesh. People need to be taught so that they can protect themselves from disaster. The European Commission needs to allocate greater funding to DRR community-based initiatives. Capacity building for vulnerable communities is needed.

32 Cost benefit analysis helps evaluate solutions for preventing river flooding (e.g. retention pond, expand bottleneck of the river, relocation of people and infrastructure, early warning system).

33 Cost savings so all agencies and governments don't need to do risk assessments (for high risk poor countries and regions that do not have the resources and expertise to do this).

34 For fast reaction, there is a necessity for catastrophe modelling; develop reinsurance protection; CCRIF is a regional fund; proof of loss creates delay in help; there is an evaluation index to apply.

35 Find a way to convince donors to allow use of funds independently from the disaster phase (emergency to development) to permit real and efficient implementation of disaster risk reduction strategies in elected countries.

36 Microinsurance schemes may become useful tools in low income countries to reduce the impact of disasters.

37 Scaling up DRR and climate adaptation interventions depends on the ability to justify public investment in these activities. A key aspect of action therefore is the development of simplified software and other tools that organisations and stakeholders can use to demonstrate the economic viability of such investments.

38 There is a chance to upscale insurance solutions and to implement prevention measures, but this will take time.

39 Spoke of earthquakes (comparing response across socio-economic levels), climate change (of which few

factors have been identified; crucial that people providing information are well-trained), the crowding-out effect of international charity can be altered through an in-kind transfer for catastrophes.

40 There are insurance solutions that can also serve the large group of poor people being affected by weather related natural events and climate change.

41 We must place a higher emphasis in financing local capacity strengthening to develop land risk studies.

42 Access environmental financing through developing projects that address HFA priority areas and access the revenues to undertake non-revenue activities.

43 Address risk with imagination versus knowledge; insurance is a middle class concept, unless it is implemented locally (decentralized) as social business (pre-disaster) and social entrepeneurship; use "in-kind" resources versus monetary convergence.

44 Donor countries to pledge sums to ex-ante insurance schemes at a comparable investment level to current ex-post disaster relief.

45 Incentivize people with an insurance system to invest in DRR measures (e.g. making houses more resistant to flood or wind damage).

46 Educate governments/public sector about insurance/reinsurance/capital market solutions that help then to finance natural disaster risks more efficiently.

47 Funding for DRR in S. Africa. Currently there is very little DRR funding and there is a focus on preparedness. Need more funding for integrated DRR work with a focus on finding DRR solutions to slow-onset disaster challenges.

48 Ministries should use their funds to prevent risks, not only keep them and only invest after a disaster has happened.

49 New innovative solutions in insurance field should be created with regard to climate change.

50 Offer incentives to poor vulnerable communities to relocate.

51 Recognise small disasters and act to reduce their impacts. Introduce microfinance banks for local communities.

52 Allocation of 10-20 % of UN funds for post disaster response and travel cost toward building safe schools and hospitals.

53 Reject the idea that an "adaptation fund" is a sufficient response. Instead, all developement funding (both domestic and international, in developing or developed countries) should be considered as investments in adaptation to changing conditions.

54 Strengthening local governance and creating Disaster Management funds at the local level to facilitate quick response and recovery.

55 The various agencies are providing the financial assistance to NGOs through gov'ts, which creates difficulties for getting the grant. Hence, some direct channel may be considered for providing financial help to NGOs who are doing good work at the grassroots level.

56 Pre-disaster: social business should use dividends of social insurance to invest in critical infrastructure of weatherproofed strucutres. Social business: produce dividends, then converse resources to build DRR infrastructure. During disaster: deliberate assessments of "in-kind" resources vs. monetary. Post-disaster: Assess social entrepeneurship before emergence of outside resources.

57 A big challenge is to make it understandable to people involved. For taking into account social impacts, a good systematic framework is the cost-benefit analysis is needed.

58 Disaster risk management index has been used all over Colombia. Government fiscal and monetary policies should provide the right incentives to

foster a substantial scaling up of public services and infrastructure.

59 Incentivize insurance payments after disasters: pay only 80% of covered loss, if a given structure is simply re-built. Pay 120% if the structure is redesigned to meet the latest standards to meet green house gas and adaptation criteria. Will have leverage effect.

E. Improving early warning and raising public awareness

1 Increase the use of mobile phones in natural disasters (full description included in the main document)

2 Install a standardized database on diaster risk information (full description included in the main document).

3 Further research is needed on how warning signs are interpreted and understood by the public in order to design more accurate alarm systems that attract a larger range of population (cultural, physical, age, gender, etc.).

4 In Europe, the first "early warning system" for strong earthquakes was constructed in Romania and this system, together with shake and disaster maps, are part of disaster reduction and risk management. The early warning system should be viewed as part of a general real-time information system that provides rapid information (3-4 seconds) to the public and disaster relief organisations before (early warning) and after a strong Vrancea earthquake (shake map), as a support system to European environment assessment.

5 Importance of research to understand human behavior in terms of risk communication. Applying outcomes to communicate risk awareness to proper useful signage and alarms.

6 Put in place effective ways of ensuring that important climate information is transferred to the farmer.

7 To promote awareness, programmes including interactive methods and appropriate tools are needed to reach the target audience.

8 Vulnerable groups are always at risk. Increasing capability of these groups may reduce risks of disaster.

9 An international body, such as UNESCO, would develop a series of films on disaster preparedness that would be used in schools around the world. In this way, a standard educational tool would be created and updated.

10 There is a need for greater regional integration and for greater vigilance in warning."

11 GIS-based decision support system in river-based water management.

12 Develop a special technical group on early warning systems for earthquakes to share the current experience.

13 Required GIS should be developed for the Carribean with free access to all countries of the region.

14 Data dependency of hydrological modelling is high (and assumptions need to be done properly and transparently).

15 Develop synergies in evacuation planning for cyclone storm tide and tsunami inundation.

16 Early Warning Systems now need more efforts on response than in data accuracy. To provide better information, early warning systems need to be linked to one another.

17 Development of early warning alert service (e-mail and sms for terrorism, earthquake, etc.) that is provided to organizations and customized to meet their needs.

18 Greater integration of scientific information and GIS data to set up prevention systems and increase awareness of disasters.

19 As a country prone to flood hazard, Cambodia has adopted two DRR measures: 1) Take the flood far away

from people through physical structure 2) Take people far away from flood through safe evacuation to safe area.

20 Early warning system (EWS) is the system for real time early detection and warning of the seismic waves; shake and disaster maps for Bucharest; rapid information about an earthquake. Vulnerability of Delhi to earthquake because of the infrastructure.

21 Important to understand the current conditions of livelihood in implementing climate change DRR. Diversification is important.

22 Ways that terrorists attack: Vehicle weapons, hand weapons (hand-delivered bombs have gained popularity recently), suicide bombing (recent phenomena), chemical, biological and radiological weapons (future threat). All normal people should be trained to protect themselves. Need for understanding of the materials (i.e. geometries of building, minimal or lightweight ornamentation, window design, glass design and cladding design can work as countermeasures. We have to find new materials for school buildings to protect children. Shelters may serve as first line of defense against planted bombs. Volunteers should be organized in all areas of the city. Incident command system and response process at the terrorist attacks in Turkey in 2003 may be taken into consideration as an example.

23 Promote awareness programmes including interactive methods and appropriate tools to reach the target audience.

24 Alarms can be ambiguous and confusing, and therefore are often mistaken. Alarms are not recognized as such and don't cover a variety of languages.

25 Be Operational - delegate leadership for any project - be ready to forget ownership, and recognize leadership for more efficient humanitarian operations.

26 Early warning needs a comprehensive database, an event memory, including impact information.

27 Hazard mapping should be done at all high risk villages with active community participation, in local languages, and should be kept in public domain.

28 In parallel with the flood map production, the GPS field measurements are very important to ensure the precision of satellite flood mapping.

29 Presentation of various search and rescue teams with different capacities for responding to disasters such as earthquakes.

30 Introducing programmes and maps such as shake and quake maps for risk reduction.

31 It is necessary to establish a better regional integration of monitoring systems to achieve better early warning results.

32 Pandemic planning has lots of uncertainties. It's important to have an emergency management framework/communication to manage the "fesa factor." It is acceptable if you do not know something, but you have to know what it is that you don't know.

33 Perceived risk has a direct and positive impact on responding to warning with protective action.

34 Presentation of a particular project of early alarms in Sri Lanka and Southeast Asia.

35 The Mediterranean system (NEAMTWS) presented by Prof. Tinti is not yet ready. Prof. Tinti said it is incredible that in these years it was not possible to quickly set up such a system. The main element that is lacking is the deep buoys or bottom pressure recorders.

36 The participation of the private sector in DRR in third world countries is very weak because the public's awareness of disaster is lacking. We should therefore enhance public awareness in third world countries.

37 To stop the global distribution of genetically modified organisms that cause the decrease of biodiversity leading to the disappearance of different species of plants and animals.

38 Think global, but act local" has a new and even more important meaning when it comes to create awareness and adaptation of global knowledge to down to earth disaster prevention.

39 To pay more attention to the influence of biological factors (viruses, GMO, etc.) on the environment and humans.

40 Use GIS (geographical Information Systems) to prepare data, information systems, and the people for when the disaster strikes. Thus the importance of preparedness.

41 We need to make a better impact on the international and regional levels (e.g. climate change) by mobilizing national support through establishment and engagement of national platforms.

42 Whilst urbanization has increased the risks for disasters of various natures, it also provides better opportunities for creating awareness, disaster prevention and long term integrated planning: use them!

43 Create an International Center with simulation of Natural Disaster (with GEMNET if possible).

44 Clarify what means what to whom in the DRR, as well as in the Climate Change and Adaptation community.

45 Create political will by regularly training politicians through simulation programs (no games, but real time simulation).

46 Demilitarizing civil protection. Civil protection has to focus on the individual. Civil protection is structurally different from country to country. Good emergency management adapts rapidly.

47 Culture is difficult to define rigorously and like Russian dolls or Chinese boxes, it has many levels and forms. In the context of disasters, we need to define culture better and work at disaster risk reduction in line with local, regional and national cultures. Culture will facilitate compatible measures and obstruct those that do not respect it.

48 Early warning systems work only if backed by continuous monitoring.

49 Emergency management is a local issue, therefore so is disaster prevention. We need to encourage an atomistic form of local resilience that starts at the family level, the level of very small communities and we need to seek ways of aggregating it to higher levels of community, region, nation, etc. There is a paradox in the duality of "bottom-up" organisation and "top-down" harmonisation. We must seek formal mechanisms for reconciling these two processes. It needs an applicable model with practical connotations.

50 Emergency management should be comprehensive, coordinated, should be broadened to post-emergency situations. Predictability is very important, especially regarding the availability of resources after a disaster.

51 High economic losses have raised the awareness that there should be a proper approach for risk reduction in the tourism sector.

52 Introduce the concept of „Chief Risk Officers" (have a holistic view about risks to identify priorities) at country (eg. even in Prime Minister's Office) or municipality level.

53 Mapping (monitoring and mitigation), GIS, enables decision makers to design a more efficient emergency plan.

54 Mitigation efforts need to incorporate local know-how and resources. Technical aspects will only be useful if they can be related to wider human understanding.

55 Pandemic awareness campaigns are key strategies, but there are challenges that health professionals have to fight with politicians.

56 Need a fully organized local civil protection system.

57 Participation and preparation for response supported by DIPECHO --> communities "most vulnerable - local communities" --> community-centric (small-scale). Awareness (information, education, communication). Capacity-building. Early warning ("local means"). Need to move capacity downwards (information to people).

58 Participation of the relief unit staff to the planning is a key element for effective emergency planning.

59 Participatory emergency planning with the relief unit staff is key for success. Emergency plan, continuous process, cautiously updated! Knowledge can be gained by small event "near misses," not catastrophes, but help to establish emergency plans.

60 Predictability is very important in emergency management especially regarding resources.

61 Risk managment has to include and integrate the local population as they have to become familiar with risk management activities and they have to accept the measures applied in an emergency case.

62 Importance for research to understand human behaviour in terms of risk communication was identified. There was an interest to apply the outcomes to community risk awarenes. Proper use of signage and alarms. How do individuals recognize and respond to risk. Failure of recognition of risks was identified in several domains. More research is therefore needed.

63 Use an international code for alerting the population (warning and vigilance); use pictograms.

64 Use radio data system for informing the population.

65 Work related to earthquake precursors (prediction) could be one of the most important research areas of our time. Many lives are lost related to earthquakes and tsunami. Innovative methods to understand the signals related to credible methods for prediction should be explored.

66 Recognition of the role psychological science plays in the full cycle of preparedness, warning, response, recovery and mitigation. Need to build a global community of researchers and disemminate research.

67 Develop an early warning system, complemented by electricity companies, that builds a device in your home, which they can trigger in case of a crisis or a disaster. Pilot in New Zealand.

68 Without community participation, DRR will fail. We need a forum/ secretariat dedicated to finding strategies to raise community awareness of risk and of their capacity to act.

F. Improving Communication and media coverage

1 Promote the importance of disaster preparedness by media (full description included in the main document).

2 Adopt community-based information campaigns (CBIC; full description included in the main document).

3 Access to information to improve our capacity local to global; what are the information sets that can be used across scales (from local to regional to global). Where are they? Can they be used across scales?

4 Change the language we use to emphasize the positives rather than the negatives. Specifically use "Disaster Prevention" in lieu of "Disaster Risk Reduction," which gives a negative connotation, a sense that risk will be reduced but not eliminated.

5 Communication "common access protocol" across institutions and interfaces (including community interfaces) for communicating risks and vulnerabilities in real time.

6 IDRC, perhaps in cooperation with another organization such as

UNESCO, sponsors an annual award for the best journalism in the promotion of a culture of prevention. The winning journalist is invited to IDRC and his/her work is featured in program material. A radio or TV report is replayed at the banquet. The dinner would also be the venue for the award. This idea acknowledges the important role of the media and also promotes good journalism in an area of critical importance.

7 Communication and awareness are still very ineffective regarding people's perception of risk and emergency alarms.

8 Create and use a language which is understandable.

9 Awareness programs need to be promoted in local communities to make them effective.

10 Invitation to persons who managed themselves during a disaster (e.g. community presidents, emergency staff).

11 Risk communication specialists in disaster awareness, health promotion and disease prevention should learn from each other's expertise, methods and experience.

12 Implementation and approbation of "participatory video" methodology in "participatory risk mapping", "participatory vca", "participatory LRM".

13 1) Awareness of risks and preventive matters, 2) Improve communications, 3) Information exchange (networks on the web).

14 Risk is very broad and subjective. A clearly defined risk is needed for common communication and understanding.

15 Convert the geoscientific and social knowledge into action; preparedness and prevention to help improve responsiveness; land use planning.

16 Dedicate more time to discuss theory, measures of performance and performance and measurement for decentralized activity.

17 GIS web-based tools can help decision makers by their designs.

18 Global loss databases about past natural disasters should be freely available/accessible (through the IDRC website for example) and be transparent.

19 Images of reality are more determined by media reality and less by primary sources, but the media are undergoing structural changes, which makes them more dependent on profit and changes the quality of reporting. The fact that media play such an important role before, during or after disasters emphasises the necessity of understanding how they work. There is also a need of scientific analysis of disaster reporting undertaken in every country and cross-country contexts.

20 Increasing demand for data on land and space inventory at different scales (urban, regional, global) for pre- and post-earthquake quick loss estimations requires the analysis of this data and discussion at the GRF website.

21 Information exchange on an international level to be focused on public interests with the appropriate data protection.

22 Lessons learned and evaluations need to be recorded, disseminated for the strengthening of south-south cooperation.

23 Risk communication on probabilistic forecasting for the community for better interpretation, understanding, and reaction.

24 Sabotage, terrorism: make private knowledge available to the public. Everybody should have access to the same knowledge and information. Simplify the risk management so that it can be used for all.

25 Communicate the potential and opportunities of environmental management in DRR (and CCA) to policy makers, practitioners and stakeholders, which requires identifiyng approaches that make such practices available and viable for the poor.

26 Disaster mitigation speaker talked about the effect of disasters on the country at risk along with the population and the GDP impact.

27 Disaster plan for how to improve disaster risk mgmt: Disaster cycle and risk communication (prepare a strategy). Cycles can be really small (family decisions) or really big (institutional changes).

28 Fear and other negative emotions often show positive relation with prevention behavior, but can elicit denial of risk and fear appeals are mostly ineffective. Positive emotions are more suitable as motivators for prevention behavior.

29 Greater emphasis and effort should be placed on identifying potential champions (of network thematic areas), i.e. those who demonstrate the motivation and initiative to the thematic network. These people should receive (free) invitations to the IDRC and in connection to point 1, be supported financially or at least in kind.

30 Help developing countries implement effective hazard and disaster information/communication systems involving multiple agencies and multiple hazard types.

31 Consider sociology and psychology of risks; based on standardized interviews; no broad public debate on natural hazards (media reporting is event-related) (only a small minority is affected); if natural hazards increase, the solitary(?) system will be questioned.

32 Inform people about the risks of power concentration in information infrastructure and software monoculture.

33 Innovative and traditional practices on DRR and DM to be documented, context-specific and made available for public access.

34 Make better use of the media.

35 Need to have a strong voice on DRR.

36 Make greater use of traditional media to communicate the message in their language on grassroot level. Use in general a more positive language in DRM.

37 The priority is to search for ways of communicating risk by emphasizing the impact and other key aspects leading to sound planning and development.

38 Develop "common language" so the public sector and private sector (e.g. insurance) can understand each other.

39 Create an international award for acknowledging politicians who have taken elective disaster risk reduction measures to protect their citizens.

40 Train reporters on how to cover disasters, but more importantly on the coverage of success stories in prevention.

41 Early learning and training, from preschool age children so the ideas become part of the culture. Communication at all levels, it seems we are not doing it in some places. Put oneself in the place of the affected population and find simple and accessible solutions, that they can accept and carry out.

42 Get a stronger legal backing for the Hyogo Framework for Action.

G. Sharing knowledge, know how and data

1 Set-up a worldwide knowledge base of emergencies with a list of solutions that have been adopted, and estimate their effectiveness (full description included in the main document).

2 Dialogue and discussion on application of vulnerability and risk information for disaster prevention, disaster management and urban planning.

3 How people recognize and respond to risk. All presentations addressed failures in risk communication across several domains. Everyone suggested the need for more research in each of their areas.

4 Importance of the telecommunications system and informatics in DRR in education, health and other sectors.

5 Share ideas and passion at the conference to bring these to a wider audience of people worldwide.

6 Sharing successful disaster mitigation experiences through a variety of means and mechanisms from different regions of the world.

7 Small-scale hazard and risk mitigation practices should be adopted through using local knowledge and resources through sharing successful disaster mitigation experiences through a variety of means and mechanisms from different regions of the world.

8 The combination of sophisticated or technical methods and local or traditional knowledge and perceptions can be a productive approach to motivate effective community risk perception and assessment practices. It does however require time to build trust and mutually supporting relationships and, again, the importance of shared outlooks dialogue and two-way communication.

9 Any policy on DRR should pay special attention to gender's role. More resources need to be made available to women (community-based programs).

10 Moving from thought to action -- what can we ask individuals, communities, organizations and Government to do now to build their resilience?

11 Engagement of communities that have not experienced disasters recently.

12 Latin America and the Caribbean countries should compile a directory of innovative ways to "keep the memory alive," especially for those that have worked for them and share them in other regions.

13 More and more stakeholders, institutions, actors on national and regional and international levels need better harmonization and better coordination in order to fully exploit at best the scarce resources in the field of DRR.

14 Rome partnership for disaster risk management: idea is to explore how the 3 UN agencies in Rome can collaborate, since they do not always work together even though they are in the same sector. Systematic approach is necessary to keep information accessible. Develop rural livelihoods and the rural finance sector.

15 Session stressed a critical importance of effective preparedness coordination mechanisms, empowerment of community, networking and building on multi-stakeholders (government, United Nations, NGOs, Red Cross, and civil society at large).

16 Small scale hazard and risk mitigation practices should be adopted through using local knowledge and resources.

17 Address the important regional actors through networks of national platforms.

18 Although the focus is on disaster prevention, one cannot ignore disaster management. There is a pressing need for the broader adoption of satellite-based emergency communication. It is the only robust means of emergency communication.

19 Elected officials at all levels in all countries are ultimately responsible for the safety of people. Therefore, whether through their membership peer associations or some other community responsibility, planning and funding of disaster reduction must be driven.

20 Focus on building networks of national platforms for DRR to ensure synergy.

21 Inquiry learning model to be integrated into UN-ISDR and other agencies as a "blanket" system (common language) in producing some educational resources.

22 Introducing and teaching in schools risk/disaster management.

23 Knowledge management as a part of each educational activity.

24 Traditional and contemporary teaching and learning models.

25 1. Preparedness is protecing lives, livelihoods, and protects sustainable social and economic developments and it is cost effective. Better example and case studies on cost-benefit ratios of preparedness and prevention are lacking. Make donors more generous not only in the response but also for the preparedness. 2. Coordination of the preparedness activities among all stakeholders, NGOs, governments, local etc. Collaborative approaches are needed 3. Lessons learned from evaluations of big disasters should be systamatically recorded, disseminated and used of South to South Cooperation. Share with other countries...etc.

26 Develop a major research project on the status of the disaster victim in modern world.

27 Make sure that important data are made available to those concerned and in need.

28 Make the IT systems „permeable" to bring vital DRR data (e.g. on weather) to the „last village".

29 Prevention Web as DRR network platform. Survey map on how participants are connected (informal knowledge). Exx Cire as emergency mgmt forum to share information to reduce disaster. Limitation is internet access (we need to acknowledge the network limitations). La Red (since 1992) has the fundamental impact in disaster research in L.A..

30 Sharing of knowledge must be easy and cheap, accessible for all stakeholders.

31 Need to simplify the existing know-how to make is accessible to all. Funding in Iran for school safety has been successful. Other action-oriented initiatives need to be developed.

32 Support research that aggregates the lessons learned and distribute this research widely. Perhaps an annual survey that could be released at the IDRC as a press event to hold on to reporters through the first several days.

33 The health community and disaster risk reduction community should collaborate on actions which will improve health outcomes for communities at risk of disaster.

34 Better quality data availability: - multilayered, gathered with complimetary perspective, to enhance reliability, to feed into realistic risk assessment.

35 To analyse existing data sources on building stock with global or regional coverage for application within global near real time systems for loss assessment due to strong earthquakes; to encourage the organisation to make these data sets available at the GRF website.

36 Capacity builiding and coordination among members of the national headquarters at all levels of country.

37 Difficult though it is, the experts need to get out and understand the points of view of people: the disadvantaged, the marginalised, poor women and children. It puts me in mind of a Red Cross World Disasters Report diagram: Data Information (understanding, interpretation, wisdom).

38 Capacity-building for national and local level in developing countries in the field of collection, management analysis and dissemination of spatial data for natural hazard risk studies.

39 Cooperation among agencies can enable self-positive circles (also beneficial for harmonization).

40 Emergency plan responsibles in government teams will do reviews in other countries, sharing know-how and experiences.

41 Findng ways to make the cat models (probabilistic Risk Models such as AB5 consultling or RMS models) available to the governments to use for Risk Mitigation and Disaster Response.

42 For many institutions that work with stakeholders, the tools for transferring dependencies and capacity building are still an issue.

43 Learn the political language to better convey the results of risk measurement, improve risk understanding and facilitate decision-making.

44 Focus on implementation through networking such as specific community based projects.

45 GIS data handling capability plays a major role in supporting the effectiveness of automated procedures developed for flood hazard control.

46 Listen to the voices and opinions of children and youth who make up ~ 40% of the world's population.

47 More financing for researchers and teachers from developing countries to participate in events like IDRC Davos 2008.

48 More research to determine the numbers and plight of environmental refuges. There can then form part of mixed migratory flows once a definition is clear.

49 Need specific country driven ideas for DRR.

50 Obtain the recognition and support of decision makers, hence the value of GIS/Geospatial for collaboration and coordination. Management support for better managed, and better financed projects.

51 Overcome the fragmentation in the Climate Change / Adaptation- and DRR community (as in the humanitarian and development community).

52 The poor of the vulnerable community should be involved in disaster mitigation cycle and they also should be informed of everything.

53 SHG (self help group) movement can be capitalized on to promote the DRR and DM concepts.

54 Since teenagers are often better educated then parents and do understand risk dynamics of climate change and DRR, DRR national platforms + NAPA processes must be extended to give young people under 18 a formal space to express their voice.

55 Success of EWSs depends on people (motivation, knowledge, administration/support). This also includes bottom-up approach in the decision strategies.

56 The DRR "system" must adopt the principle that in DRR, the community is the "first responder" and the "first implementer" of mitigation measures.

57 Topics: 1. Novel approaches to disseminating knowledge through games. 2. Earthquakes - Comparing the response among socio-ecomomic levels 3. Climate change - few factors identified yet, more research needed. 4. Crowding out effect of international charity might be resolved by "in kind"(?) transfer of aid of catastrophes. 5. Disaster mitigation...

58 The GRF platform that is created should also be opened to other communities as for instance the communities of climate change negotiators.

59 The need to link the climate change, urbanization, population growth, build up area.

60 Use local knowledge and wisdom.

61 The global platform of the IDRC on the internet should be an open source network.

62 Use the open source concept for government GIS-Data. Free access for private and commercial use. Enhanced data (i.e. insurances) must be shared too. The government expenses are covered by increasing commercial taxes due to new business models.

63 We can learn from HIV projects for climate change (foreign assistance).

64 We propose forming an interdisciplinary post tsunami/cyclone rapid response survey team to assess dam-

age from engineering, social/natural science perspectives. Data will be used to help prioritize recovery and reconstruction efforts.

65 Access to up-to-date data and information (with high quality) is crucial for inter-risk management; establish a working group on data access and policy (e.g. geo-data).

66 An international, easily accessible repository for best practice in disaster risk reduction, with a built-in mechanism for extracting the general lessons from specific practices. There are similar initiatives, but not large enough.

67 After each earthquake use local people for reconstructing the area. Participation in every phase not only at the implementation.

68 Climate change/weather forecasting , early warning systems and risk data must reach the former for effective adaptation measures to be implemented (last mile warning).

69 Closer dialogue between universities and insurance industry. Insurance industry has to express their needs in respect to natural science research. Universities have to understand the public responsibility role of insurance, and set up an annual round table, probably within this conference.

70 Communities in Colombia: Similarities in conditions and needs. Long-time needs and short-term management --> "understanding risk is already reducing it." Collaboration led by local teams with government, Red Cross, etc. sharing successful experience (private sector).

71 Create a function of "independent facilitator" to manage issues related to access to data, and sharing of data, needed by the insurance/reinsurance industry.

72 Create an efficient mechanism to use success stories to guide efforts of millions of communities, like a lighthouse helping ships and boats in the dark. Empower government use of information and comm. technologies.

73 Create specialty groups working on different big risk lines in each country and have meetings to resolve specific problems presented and find solutions, specific actions.

74 Developed countries should share their resources & capacities with developing countries in the struggle against pandemics and diseases (e.g. set up regional laboratories).

75 Encourage cooperation among national platforms of the same region without investing in new structures.

76 Environmental management a good solution but not always the only one. Guidelines for should be developed but they should be applicable in different local situations. Find a way to express cost at future risk to convince politicians to act now and not react afterwards. Gap between what solutions are possible and what is actually used. Transform knowledge into applicable solutions. Interlinking existing projects and knowledge-holders and development organizations.

77 European commission is trying to set a network for useful pandemic management tools. Modelling and surveillance are important.

78 Evaluate Turkish Resilience Progamme and make it a model for other countries.

79 Example of Africa's limited modelling capacity hindering progress because they are unable to provide statistics, therefore being left out. Need to also focus more on how the poor are affected.

80 Global electronic media news for the broad community of worldwide participants in disaster and risk management/relief/preparedness with seed funding, but then with a sustainable business model.

81 Help governments improve their service delivery mechanisms and absorption of technical knowledge so that it works for people. Lead UN

organisations in the country should promote/manifest UN-ISDR vision.

82 In order to provide reliable data, there is a huge need for capacity building and a need to maintain and develop existing institutions; staff management and retention is part of it (i.e. in order to avoid a brain drain!).

83 In the latest years, river flooding occurred quite frequently in Romania, affecting wide areas and producing more damages and human losses. In this context, the improvement of the flood risk management system is very important. Remote Sensing and GIS techniques are very useful tools for flood analysis to produce catchment maps, detect water surface and soil moisture, flooded areas, etc.

84 Increase the participation of national geological services due to its contribution of geological hazards such as support for defining emergency plans.

85 Integrated (hazard) multi-hazard assessment framework would facilitate successful risk reduction. DMISA: Disaster Management Institute of Southern Africa to be incorporated and engaged more actively at the global level of DRR. DMISA to be formally recognised as a key role-player in disaster and risk management at the international level.

86 International help is essential for weak countries in dealing with flood response. Flood risk mgmt must be targeted on the village level as opposed to policy-oriented measures.

87 Involve the end-users (such as fire brigades, relief units) in the development of emergency plans.

88 Local initiative like community integrated management center for DRR, developed for Cuba together with UNDP are recommended for HFA.

89 Necessary to have qualitative risk assessment for dealing with unquantifiable risks (a precautionary approach).

90 Organize an international evaluation system as ISO on quality for eco-resilience of organisation.

91 Partnerships must transcend traditional expertise and jurisdictional boundaries.

92 Regional GIS should be developed for the caribbean with free access to all countries of the region.

93 Satellites must also be grouped within the category of critical infrastructure. Monitoring space is needed to have information on the orbits of satellites, whether they are damaged, etc. Additionally, the data policy problem (whether or not data is classified) needs to be addressed.

94 Spread knowledge of what geodata exists, where you find, how you get it. Strive to build geodata portals. Technology is not obstructing. There are working standards. This is for DRR and indicators.

95 Systemic approach modelling of natural disasters offers new beneficial perspectives on disaster risk management.

96 Start an initiative for continuous access to payable earth observation data of sufficient quality for monitoring issues of relevance for DRM, such as environmental degradation or migration.

97 Start collecting and publishing data on performace of govt. disaster warning centers, with emphasis on time from hazard occurence to issuing of official warning.

98 Support the data exchange issues between public/governmental authorities and insurance industry (which do risk assessment). Data is partly not shared or at very high costs. Facilitator at IDRC/GRF?

99 The grand challenge: 1) Provide hazard and disaster information where and when it is needed. 2) Understand the natural processes that produce hazards.

100 The JRC (European Commission) runs a fully operational system

(GDACS) that allows an immediate evaluation of tsunami cases. In some cases, if not accompanied by confirmatory sea level measurements, false alert may occur. Important collaboration activity with Portugal was presented.

101 Apply existing simulation models for risk and disaster prediction locally/globally.

102 To create web-laboratories for hazard monitoring and risk assessment.

103 There should be a world body to oversee DRR (coming up with guidelines, advising various authorities on what they should do).

104 To use the meteorological infrastructure and data ruled by WMO and NMSs to prevent and monitor risk disasters as a key tool within risk management.

105 Use of airborne techniques for high-resolution numerical models of the terrain for realistic map/risk simulations/elaborations (i.e. LIDAR, IR com, Photo IR-VIS).

106 Develop a mentoring program, using the GRF network, to provide an opportunity for individuals, organizations and countries to learn from one another.

107 Modelling and understanding of sudden-onset events has improved substantially; less is known about slow onset events such as droughts. More could be done on Africa, as slow-onset events are dominant here.

108 Make data on hazard and past loss events easily accessible for all stakeholders in risk management, including research and insurances. This increases awareness and allows risk based developments. --> Central web based source that links to these data sources.

109 Need for universal definitions in order to move ahead

H. Advancing the integral risk management approach

1 Share the knowledge for risk reduction (full description included in the main document).

2 Considering the state of poverty in Africa, there is a need to elaborate and implement a marshall plan for risk and disaster management for Africa.

3 Donations made worldwide to countries in need are sometimes useless if they are not tailored (example of language) to the specific countries.

4 More frequent urban flood disasters due to climate change, but also growing population pressure in European and Japanese cities. Important contribution of geo-information system techniques for flood monitoring: satellite-based products. There's a need for information on hazards and risks; integration of communication is the key.

5 Introducing programmes and maps such as shake/quake map for risk reduction.

6 Linking various organizations (scientists, governmental resources, relief organizations) better at all levels (regional, state, global) to communicate risks, mitigation, resiliency, enabling recovery and mitigating/reducing loss.

7 Technical skills and abilities are essential elements to DRR. But only to the extent that they can be related to wider human dimensions, public understanding and acceptance (practice/action).

8 Community Awareness" for wildfire/bushfire management: Fire management policy should concentrate on people, developing self reliance, and moving away from technological approaches to wildfire management and suppression.

9 Good ideas are easy to find. The challenge is to translate them into practical policies, with links to other initiatives, or else we are generating more hot air for global warming.

10 Emergency management should instead be referred to as risk management, a collaborative initiative of all partners.

11 Modeling helps to set up emergency plans. Acceptance is important to be measured at the community level. Living document, updated, clear.

12 The suggestion of having a Country Chief Risk Officer is a good idea.

13 Regional and local communities need to assume a greater role in preparing for disaster because there are many isolated settlements that don't receive any information.

14 Risk adaptation and landuse policies management; technology at disposal of society considering local factors constraining actions and operational improvements.

15 Do not increase the population; the carrying capacity of planet earth requires a sustainable population size.

16 Draw from the experience of rescue teams and first responders in post-mortem sessions to gather information that can be used in developing sound measures for disaster prevention.

17 Global structures, frameworks and declarations in DRR should be utilized as a vehicle to secure political will and commitment at the local level

18 Disaster management and mitigation should become one of the main goals of the millenium objectives.

19 I believe that mainstreaming disaster management into different policies and activities would be a practical action.

20 We need to define the level of acceptable risk with regard to climate change adaptation, since we know that there is no such thing as a new risk society.

21 Detailed loss assessment of extreme events (natural disasters) are very important (i.e. ECLAC).

22 Incorporate environmental considerations (for example, ecosystem services, biodiversity) into disaster relief and recovery programmes.

23 Include ecosystem management in National Disaster Management planning.

24 Integrated risk governance has become an important issue under climate change. The core scientific project of intregrated risk governance (IRG) should be set up and research should be begun with cooperation by resarchers in the world.

25 Daniel Bahrenboim has founded an orchestra composed of Israelis and Palestinians. We could found bilateral or multilateral emergency emergency response or disaster reduction organisations (focusing on young responders or professionals) in crisis areas. Some threats (natural hazards) are politically neutral and favour cross-boundary (political boundary) collaboration against common enemies. Others need the courage to adopt alternative approaches.

26 Integrated risk governance/management: connection between politics, society, natural catastrophes and planning. IRG project: identification of research questions. Mission is to improve risk management and stay focused on transitions of risks.

27 It would be better to organize networks that included NGOs, Government Departments to respond to disasters.

28 Latin America and the Caribbean should continue to expand existing partnerships using champions such as the office of foreign disaster assistance, the org. of american states, the pan-american health org., USAID, insurers and others. Keep a database of noteworthy dates that have had an impact on policy-making in DRR.

29 Encourage community based DRR, interest in disaster preparedness

at community level and integrate DRR into development.

30 In disaster risk reduction, as in emergency management, a useful framework for action is PESTOR - policies (and ethics), strategies, tactics, operations and results. Its weakest points are the connections between the levels, which need strengthening.

31 The government should play a central role in risk governance.

32 We are short in time, money, common understanding, long-term vision and political will, so we need an initiative, Global Good Governance for Risks and Disasters (3 Gs for RIDIS).

33 Outcomes: 1. Need of build a global community of researchers and dissemination of this research. 2. Importance of community as a knowledge source. 3.Bottom-up apporoach rather than top-down approach in risk reduction 4. Positive end can resolve from experiencing a disaster. 5. Research from Japan: ...(?). 6. Language alteration/adaptation can greatly influence how an issue is accept 7. Need to build partnerships between domains.

34 There is much that needs to be done in collecting and widely disseminating indigenous or traditional knowledge on DRR in the world. Thematic forum on IK in DRR and publications should be useful.

35 What women can do to prepare themselves is form special women's groups.

36 Bangladesh's vulnerable position in the context of climate change (mitigative measures must be taken to reduce the vulnerability of developing countries).

37 Bring some coordination to institutional efforts (in Nigeria). There is a great need for local capacity building (institutions should be built).

38 Effective DRR increases the safety of communities. However, safety as such is not tangible. Therefore, we need to better understand people's perception of risk, particularly considering the cultural context.

39 Reduce the "black box" explanations and try to explain things so that the decision maker understands what you are doing!

40 It is necessary to combine indigenous knowledge and technology for integrated risk management. More emphasis should be put on non-formal DRR Education and community involvement.

41 Local based disaster management is necessary for effective disaster reduction.

42 Addendum to idea of a chief risk officer role at national level: should be independent of political party or gov't (i.e. ombudsman type role).

43 Risks adaptation and land use policies management; technology at disposal of society considering local factors constraining actions and operational improvements.

44 Academic researchers are in a position to work with local coastal disaster-affected organizations to help establish baseline data (i.e. what were the pre-disaster conditions in the biological and socio-economic communities.

45 An integrated risk assessment is a better, more useful approach.

46 Apply the stochastic ROSI approach to risk mitigation projects to study the net benefit ex-ante or ex-post.

47 Detailed knowledge is not that deep! Major gaps: integration of high tech engineering into poverty reduction efforts and programs, guidance in best practices (protection measurements or methodology), gender differences (in using the environment) have to be taken into account, buffering capacity of ecosystems and communities is unknown.

48 Appointment of an independent facilitator.

49 Emergency management should be broadened to the post emergency and non-emergency phases of the disaster cycle. It should also be integrated across boundaries between functions and organizations.

50 Available medical care for children and safe birth control/population is central to all these risks and women need to be knowledgeable and self-determining.

51 Developing community based programmes which involve the people and community.

52 Disaster risk reduction requires that great improvements be made in the connection between emergency preparedness and land-use planning.

53 DRR measures implemented by the local admin can be a criteria for selecting best performing local admin.

54 Emergency management should be comprehensive, progressive, integrated, collaborative, coordinated, flexible, professional.

55 Employment generation schemes (NREGA in India, for example) can focus on developing infrastructures for DRR.

56 Explore the benefit of creating the position of an Institutional Chief Risk Officer with defined task specification.

57 Functional and non-structural facts are important for hospital safety due to the disasters.

58 Encourage relocation with opportunities for development.

59 Findings: Mandatory schemes better for government and high risk countries, but more for lower risk countries.

60 GEMNET trying to link different aspects of DRR for more effective disaster management.

61 Government, country, community level interactions should be facilitated for cross learning.

62 Great progress by the German tsunami early warning system in Indonesia, which will be inaugurated November 2008 in Jakarta. Requests from the floor to coordinate this effort with the Indian system.

63 Increased frequency of natural hazards, but rise of hazards does not necessarily translate into an increase of risks if disaster risk reduction strategies could be operationalized by all stakeholders in all countries. Its about policy mechanisms that need to be in place; strengthening of legislation; political will and committment to avert some of this challanges.

64 Have DRR included / taken care of (high up in the priority list) in poverty reduction strategy.

65 IDRC conference should have one full day allocated exclusively for the communities to share their experience and requirements.

66 If implemented on a large scale across multiple hazards and projects and over a long duration, these solutions are cost-effective.

67 Have DRR included / taken care of in global frameworks.

68 Have DRR included / taken care of in national adaptation plans.

69 Importance of civil-military operations and facilitative leadership.

70 In order to prevent thawing of ice, it is necessary to restore the number of ice nucleation active bacteria that were modified by the deletion of genes and mostly disappeared afterwards.

71 Instruments for risk analysis are necessary for risk reduction, but they have to be inserted in the planning processes by cities.

72 Integrate natural hazards information with the process and dynamics. International organizations support with countries.

73 Life cycle management and life cycle costing are effective risk management idols that can provide framework for development of integrated and strategic mitigation measures.

74 Integrated approaches are necessary to deal with societal problems linked to climate change in urban settlements.

75 Integrated observations, along with coupled models, will play an important role in better understanding the earth system. This will go a long way in improving disaster response, mitigation and preparedness.

76 Integrated risk governance, in the context of international cooperation, is very important in order to address large-scale disaster risk (LSDR).

77 LEGS improves quality of livestock interventions in disaster.

78 Risk management tools should include the availability to give not just one information, but an ensemble of it.

79 Modelling capacity in the public and private domain has increased sustainability. Yet, the focus in catastrophe modelling is mostly on direct, financial variables such as asset losses. More focus has to be placed on livelihood and income variables as well as health outcomes (loss of life, affected people).

80 Regional base training courses and long distance learning in disaster management.

81 Spirit of Davos: Be open for new ideas.

82 Risk Management Approaches (e.g.Tsumnami). ISDR Program for relief etc. Conferences and other gatherings Tsunami problems were discussed. Strategies were decided. Other problems (drought, ground water problems, drinking water problems) identified. ISDR educates the people on how can we mitigate this problem.

83 Risk management tools should only deliver information to the user (different from user to user), which is of real importance. Additional information could confuse the user and decision maker.

84 Taking action rather than just talking about it.

85 The 3 Step Process" has less emphasis on risk management and more on building resilience. 1) Consider the whole system, and its vulnerabilities and resilience. 2) Apply risk management to the greatest individual risks. 3) Then concentrate on improving the resilience of the system.

86 Understanding what is exposed to the disasters, people, buildings, businesses (economic recovery), type and size of businesses, temporal population and business dynamics = exposure.

87 Better integrate, address, and use the capacities of AG sector as partner and actor in national DRR processes.

88 Decentralize "creative marginalization" with ACT Flow Facilitative Dialogue; Assess ASCOPE (preliminary/deliberate); leverage technology;create non-traditional teams with "creative marginalization" (a conceptual facilitative leadership program of spatial concepts, such as chaos, culture, postmodernism, with artistic endeavours and exposure of an off-site ASCOPE including area, structure, capabilities, persons, events, geographic studies); take care of community with FLOW Weatherproof; organize action locally.

89 A key element is to promote horizontal-learning based on tangible cases. One has to move from generalization to more context specific and tangible examples of practical implementations of integrated DRR-CCA programmes.

90 Are disasters an opportunity to transform close non-participative societies? The international aid in the case of Pakistan shows positive results. Are more disasters then desired? Or are participative programs set up before disasters as a way to reduce vulnerability?

91 In a project of disaster risk reduction, the following steps need to be considered: information, education and communication for awareness of disaster risk reduction, capacity building, building grassroot institu-

tions, participatory analysis of vulnerabilities and capacities, early warning systems, build disaster information centers, networking of disaster management communities, coordination, building of infrastructure for emergency.

92 Better build capacities of sectoral line agencies (AG/health/fisheries/etc.) to partner with DRR platforms at structures at all levels (nationally).

93 Correlation of socio-economic parameters to ecological ones may bring valuable solutions in disaster risk management.

94 Demonstration of decentralization of tangible and specific strategies for risk reduction or adaptation is essential to analyze movement at the policy level. Cases and pilots are therefore essential in likely challenges and poor practice.

95 Decentralizing response and adaptation, as part of social system utilising traditional knowledge and local resources.

96 Disaster Management is so important that it should become one of the main objectives of the UN Millenium goals.

97 GRF should concentrate on policy and decision makers of developing countries for institutionalizing the recommendations of IDRC.

98 Efficiency of local and national governance should be evaluated by an independent multi-stakeholder team at regular intervals on DRR and DM and made available to the public.

99 Food grain reserves should be ready; grain storages are necessary for global food crisis.

100 Habitat improvement/development can be comprehensive for risk reduction impact in more than just the housing sector.

101 Implementation of bottleneck analysis for integrated conflict management.

102 Industrial disaster mgmt cycle: 1) Plan timely response to loss of business and computing(?) resources 2) Provide reliable source 3) Evaluate range of potential pages. Start: What may go wrong? How may it go wrong? How likely is the occurrence? What would be the impacts? Is the risk acceptable or not? Large protection analysis needed to demonstrate the project and associated systems.

103 Integration of all aspects of seismic resilience (education, management, assessment of vulnerability and reahbilitation options) is essential for success.

104 Need for long-term commitment, awareness and planning.

105 Legal framework" needs to be in place at all levels for the "ideas" to be transformed into "action" in all countries.

106 Necessary steps: identify obstacles, make things work for the poor (such as marketing and engineering), set up guidelines for action (network of discussion for best practices), solution base of locally adopted solutions, make knowledge obvious for decision makers, communication!

107 Ownership of adaptive strategies should not only be confined to those facing disasters. National and state governments should have effective risk planning.

108 Protection systems need to be planned on the basis of life cycle management.

109 Risk assessment consists of hazard maps and vulnerability maps/risk maps (e.g. tsunami modelling). Indicators used for the aggregated vulnerability index: exposure, access to information, demographic susceptability. Before modeling risks, an intense study of the (tsunami) hazard source (geological and seismic studies) and the (tsunami hazard) impact on land (measurements, field observation, satellite images) needs to be done. Important is also to produce educational material and include local people (e.g. evacuation plans).

110 Red Cross performed a study on community response to the tsunami. They came up with four lessons learned: 1) Improve community first response. Recommendation: Train and equip volunteers. 2) Standardize messages. Recommendation: Ensure meaning. 3) Improve EWS to public warning interface. Recommendation: Ensure communities/local authorities receive timely and actionable EWS. 4) Help authorities develop big picture. Recommendation: Develop an EWS policy and regulatory framework.

111 Risk assessment by itself does not necessarily lead to risk reduction unless it is linked to planning tools and communication skills supporting decision making.

112 Taking research to operatives in an engaged method to include stakeholder at a very close level so that they understand the requirements. In this way, the systems we develop will be more useful to those dependent on these systems.

113 The poorest regions are often the most vulnerable areas; there is a need for carefully and sensitively conducted assessments and setting of intervention priorities.

114 Install international and interdisciplinary centers of disaster management and preventions. The center has to do both capacity building and aid in case of disaster.

115 United Nations should adopt the resolution that the protection from disasters is a basic human right and the national governments should be put under obligation to protect their citizens from disasters.

116 Bridging the gap between global and regional climatic info is necessary for taking action. Importance of adaptation is increasing, has to be in balance with mitigation, adaptation has to be integrated into all sectors with mainstreaming. New approaches and methodologies are needed to deal with climate change. Appropriate tools, adequate instruments of adaptation and Public Private Partnership for implementation are necessary.

117 Disaster preparedness saves lives, livelihoods and protects sustainable social and economic development. Based on experience, it's a cost-effective activity. However, stakeholders need to develop more convincing studies to ensure and increase the current low level of funding for their area.

118 New solutions often not needed. We need to appreciate and adapt existing practices.

I. Improving critical infrastructure protection and resilience

1 Can infrastructure systems be designed (retrofitted) so they exhibit resilience (that is, can they can be made less crisis prone?)

2 Reduction of vulnerabilities of critical infrastrucutres from terrorist attacks.

3 Regional networks and multi-organizational alliances (e.g. the all hazards consortium, chicago first) necessary to address complex problems.

4 How can resilience in networked infrastructure systems be measured?

5 Research climate change's effects on mountain meteorology in developing countries to reduce disasters and their effects.

6 Presentation of various search and rescue teams with different capacities for responding to disasters such as earthquakes.

7 DRR requires that great improvements be made in the connection between emergency preparedness and land use planning.

8 Manifesto: Protection of health and freedom from injury are primary components of the safety, security and well-being of citizens. The health component needs to be emphasized,

established or re-established at the core of civil protection mechanisms at all levels of government and organisation. This requires networked action to promote comparative and cooperative research and to make it available in usable form to beneficiaries. (adapted from the SPHYNX Project, London).

9 Early recognition of vulnerabilities by closing the gap between CIIP and technology assessment.

10 Protection of very important monuments from earthquakes; future hazard assessment on specific sites (earthquake scenario).

11 Resilience is a concept derived from rheology (ability to absorb and resist stress). In terms of resilience in the face of disasters and other civil contingencies, we need to promote this idea and develop it as both a philosophy and modus operandi. Hence: develop "resilience" as an overall strategy for disaster reduction.

12 To analyse existing impact databases due to strong earthquakes; to develop the standards and content for international freely accessible web-based database with global coverage.

13 To analyse existing procedures and methods for land and space inventory of buildings applied at different levels: urban, regional, global; to identify the best practices in the field and make it available at the GRF website.

14 To compile and analyse the procedures and case studies for scenario earthquakes' impact assessment; to identify the best practice and make it available at the GRF website.

15 Create community facilitator and make them able to advocate for making their community resilient and sustainable.

16 CIIP analysis should be more comprehensive and include space aspects (satellite and waste), ecosystems, privacy during prevention and emergencies and technology assessments also.

17 We need to stop designing measures for rich and poor countries. The latter need and deserve the same protection as the former. Whereas that may be too expensive for structural protection, this is not so for non-structural measures. Organisation can be cheap, information and communications technologies are becoming cheaper and expertise and training can be transferred. Let's make an extra effort to implement these three things.

18 Current EU commission initiatives are: Hyogo Framework for Action, Commission draft DRR DEV. Economic losses in EU did not increase between 2002 and 2005 (due to natural catastrophes); in Switzerland there is a large amount of prevention costs.

19 Ownership of the civil society for developing seismic resilience is key for success.

20 The new countermeasure law does not include the inundation into underground space such as subway systems and shopping malls. In Japan, in flood-prone areas there are more than 1.1 million square meters of underground space, so integrated countermeasures against urban flooding are also very important.

21 The pacha model successfully used in Buenos Aires offers effective global sustainability solutions, especially for developing countries.

22 Dependency on satellites needs to be assessed for critical infrastructure protection (space surveillance).

23 Those who design and plan civilian structures need to be aware of the different types of terrorist related risks so that there is greater resilience in buildings.

24 The architects and engineers should come up with an alternate building material to the existing steel and concrete method. The new material should be equally robust, lasting and yet should be light to cause minimal damage in earthquakes.

25 Small-scale water bodies (tanks and ponds) to be considered as critical infrastructures to mitigate flood/drought and as an option for climate change adaptation.

26 In order to realize safer buildings, it is essential to take protective measures for existing buildings/housing stock in cost-efficient way, based on a firm scientific basis and thorough assessment of the existing situation. To provide better quality for new buildings/housing, it is desirable to take into consideration the choice of building materials and construction methods that are understandable for builders, and suitable for future climate change.

27 Building codes need to be adapted and reformed according to new challenges and hazards. Forward planning according to connected threats.

28 Consider code requirements and research to develop new, modern codes for building.

29 Topic: Food distribution in grocery stores etc. Continuous replenishment reduces costs and stocks, but increases the risk in the supply chain. Solutions: Printed List of foods that can be consumed under diff. circumstances in an emergency situation, Minimum stock at all level in the supply chain, Trainings for staff and companies in grocery business, Transport more information to government and NGOs - should work together more. Identify, Communicate and Train!!! Sophisticated infrastracture increases vulnerability. Awareness of this needs to be increased.

J. Creating one world – one health – one environment – one legacy

1 Sustainable comprehensive strategic disaster management.

2 Development challenges: HIV/AIDS and climate change (poverty).

3 1. Disaster Risk is endangering food availability and food supply. Increasing dependency on system interdependency. Therefore there is the need for better sectoral cross sectoral collaboration, the need for adequate and sector specific contingency planning (needs to be consolidated). Trade is key link between livelihood protection and security and food security.

4 The disaster risk reduction community should consider how their work ultimately affects the health of the community at risk of disaster, i.e. expressed as a health outcome.

5 Get support of member states by establishing and supporting national platforms.

6 Infectious diseases pandemics usually arise from developing countries. The basic reasons are the lack of sanitation, proper water, poverty, ignorance, lack of health infrastructure. Earth is a global village now. Developed nations should address these basic needs in developing nations to prevent pandemics.

7 All scientists in DRR, especially ones coming from developed countries, should force their governments for more human rights, equity, sharing and less greed, profit, suppression, corruption. Let us raise a common voice from Davos.

8 Availability of better quality data. Institutional cooperation is necessary. Communities need to feel a greater sense of ownership in order to effectively implement disaster risk reduction.

9 Reducing poverty will increase the possibilities of reducing social vulnerability.

10 Take HFA to grassroots. While NGOs/IOs have a lot at stake in HFA, the understanding diminishes as we move down the ladder.

11 Establishment and sustainability of cross-boundary structures, systems and facilities to promote efficient health coordination and cooperation towards appropriate intervention and preparedness.

12 We must create a global institute supported by governments of all

countries for strategies to help people. A world without borders.

13 One world - one health - one environment - one legacy : policy development and implementation strategy.

14 Aid is often not appropriate or useful. The international communities have to set standards in aid giving, particularly in medication and medical equipment. Most hospital managers are not aware of risks they face. Risk assessment is done according to guidelines. However, emergency situations have to be tested.

K Reducing the vulnerability of public buildings and services

1 Disaster risk reduction at community level, e.g. with schools.

2 Don't just work on the policy level, but also on the community level. Urge the community to get involved.

3 To support planning on use and location at local level and capacity building to managing.

4 Building good infrastructure like schools is important for regions where the risk of earthquakes is high, like in Algeria. In Algeria, 25% of the population is school children. Children are one of the most vulnerable groups, that's why it's important that they know how to behave in case of an earthquake (also telling their parents how to behave).

5 Empowering the vulnerable communities through participation, empowerment and sustainability in DRR.

6 Build Back Better" (this phrase was adopted as India's post-2004 tsunami slogan) can be an overall goal whether developing capacity for climate change adaptation or post-disaster reconstruction. It underpins an achievable target of continual improvement without letting a (natural) desire for complete knowledge impede action.

7 Natural disasters (earthquakes)/ ancient monuments are open to others to learn how to improve construction.

8 Needs to be countermeasures for building and evacuation safety.

9 UNWTO investigation has shown that the prevention is low. Measures are implemented after the event.

10 The complex and dynamic nature of earthquakes hazard risk.

11 The urban pattern (typology) influences the vulnerability of (natural) hazards towards buildings.

12 As revealed in disaster, impact vulnerability is often revealed as a cascade process in which one consequence leads to a chain of other effects, some of which may be unexpected. How can we reverse the cascade process? We must built robust formal scenarios (perhaps using general systems theory) and build in safeguards to block the effects of impacts.

13 Vulnerability of people must be reduced.

14 Post-disaster recovery plans should be long addressing the risks and vulnerabilities that prevailed in pre-disaster context.

15 Hospital Safe from Disasters Session. Recommends: 1. Usage of "Hospital Safety Index" to assess a hospital for ist safty (structural, non structural etc.) 2. Usage of "Hope course" (Training program for hospital preparedness on structural and non structural issues) 3. Hospitals co-dependend on aspects of critical infrastructure. Therefore assessment of hospital safety should be assessed in the light of community infrastructure as well. All sectors should strengthen the health contribution on disaster risk management.

16 The assessment of health facility safety must take into account community infrastructure upon which the health facility depends, and enables access of community to the facility. Transport, water, electricity, road access, communications, waste management, etc. are all critical to

the safe functioning of hospitals and health facilities. Without them, health facilities cannot function effectively.

17 The Hospital Safety Index, developed by the Pan-American Health Organization, enables health authorities to assess a facility's level of safety, including structural, non-structural, functional and organizational aspects. Health authorities can set priorities and timeframes to improve safety of a specific facility. It allows information to be gathered quickly to identify which facilities require immediate or near-term interventions.

18 Elaborate inventories of monuments and sites of cultural heritage interesting in coastal areas that may increase their vulnerability by climate change.

L. Relieving reasons for environmentally forced migration

1 Environmentally-induced migration should be dealt with in a comprehensive way from humanitarian assistance to adaptation strategies.

2 The problem of water distribution can be mitigated by taking into consideration detailed calculations of water availability.

3 To tackle the problem of climatic refugees, DRR needs to be equated with the creation of employment. Create, increase and manage economic migration opportunities for the benefit of the migrants. UN refugee convention needs to be updated.

4 Much research has to be conducted on environmental migration as soon as possible. It is a very new topic in need of more research.

5 Issue of environmental migration has to be addressed now to ensure human security in the near future. In-country and regional displacement/ migration is much more important than international/global migration.

6 The debate on environmental migration should start as a discussion on adaptation strategies.

M. Addressing urban risks

1 Community mapping. Problem: No legal status. Must provide services, involve multiple stakeholders.

2 Community projects: Complex context. How the local community is the best way?

3 In megacities, the risk panorama is so broad that we need to adopt the attitude that even the extraordinary is, in reality, ordinary. This should be a point of departure for emergency planning and DRR.

4 Community-based Disaster Management Planning should not just focus on large disasters but also on the everyday risks (like water-quality, solid wastes, drainage etc..). This will motivate the communities to realistically prepare their own Disaster Reduction Plans with greater sense of ownership.

5 Importance of community as a knowledge source. Need to take a bottom-up approach. Need to reinforce idea that a positive end can be an outcome of disasters.

6 Integral Risk Management. We need to do a lot more for community participation. Often failures if communities were not engaged. Find the best strategies to get local community awareness raised that it will engage with their own regional and national governments in the process of disaster risk reduction.

7 Knowing risk at the community level.

8 There is a need to understand complex situations in urbanity through generation of data of areas.

9 Improve urban search and rescue capacities by preparing international disaster response plans in Turkey and Netherlands with a comparison of urban search and rescue capacities.

10 As rapid urbanization comes along with reduced densification, it is important that this finding is taken into consideration when working on plans for disaster reduction.

11 Megacities (in Bangladesh, Iran) with rapid urbanization and no anti-seismic norms create tremendous dangers for disasters. Non-participative authorities and governments produce complete failure on rehabilitation programs.

12 Consequences of the earthquake of 1999 in the behavior of individuals (Istanbul); preparedness and mitigation activities.

13 Due primarily to global warming, Japan has many flood disasters in urban areas as well as in rural areas generated by heavy rainfall and powerful typhoons. The Japanese government introduced new policies of risk management of urban flooding in which urban inundation and flooding from river levee breaches are included.

14 New forms of integrated urban management must be developed. Urban infrastructure agencies should be created to coordinate DRR (Example of Slim City Initiative with WEF).

15 To minimize the impact of natural disasters in urban areas, we need to focus much more on local institutions, not only for capacity building, but mainstreaming DRR in their annual plan and programs. Furthermore, the masterplan should also recognize the DRR.

16 Urban management approaches and responsible institutions should mainstream Disaster Risk Reduction (as priority) and intensely cooperate with each other and higher/lower hierarchy institutions. This requires a systematic new approach to institutional cooperation.

17 The local community must be informed of the risks posed by disasters so that they can effectively adapt.

N. Creating standards and guidelines

1 A rapid reflection force has already been created (a counterpart to Rapid Reaction Force). I think we need a rapid scepticism force. Doubt is a potent intellectual, political and economic force-it can achieve much.

2 The solution to reducing risks must transcend traditional expertise and jurisdictional boundaries. Multi-organizational alliance and partnerships redefine their leadership (decentralized organizational structure needed), are formed in dynamic fields such as IT.

3 The time for transforming actions noted as priority areas for DRR is now, not later. Legislation and policy should be enforced and not just in "black and white."

4 Scientists and experts who work in developing tools for risk assessment have to create the right ways to communicate and make those tools actually useful for city planners (make them understandable).

5 Identifying roles and reponsibilities of all agencies developing policies and procedures in most probable disasters.

6 Interoperability of network support tools should be considered a high priority and ethical responsibility in order to maximize the continued effort and facilitate interconnectivity.

7 Normative and regulatory basis for ensuring safety of critical infrastructures.

8 Specialists from different fields need to collaborate on new methods of DRR.

9 Considering the state of poverty in Africa, there is a need to elaborate and implement a marshall plan for risk and disaster management for Africa.

10 Introduce country risk managers to governments.

11 Create political constituency.

12 Regional high level meetings should be held to follow up on the HFA every two years.

13 Need for scientific planning in risk governance (the government should not only be responsible for the planning either; all stakeholders need to be involved). Volunteers need

to be trained and equipped appropriately when dealing with disaster situations. Warning messages need to be standardized.

14 Both the DRR and the CC communities should concentrate more resources to investigate the social dimensions of CC and DRR. This may be achieved by insisting that signatory countries respect their commitment to UN human right conventions.

15 Data needs to be compiled to update models in vulnerable countries. The governments should be responsible for creating this proposed database.

16 Databases from reliable sources (insurancers, meteo companies) should be created as a basis for comprehensive disaster assessment.

17 Be aware that the same ethic principles are applied in CCA and DDR.

18 Contribute to the establishment of predetermined objective parameters for insurance schemes.

19 Create an international Disaster Map of the World Risk/Natural Hazards/Industrial/A more precise World Map of Hazards.

20 Develop "common language" so the public sector and private sector (e.g. insurance) can understand each other.

21 Develop and disseminate technical guidelines and standards for the wide scale application of environmental management for DRR. Practitioners and decision makers in conjunction with an effective knowledge management, dissemination and technical backstopping response system.

22 Disaster Management Encyclopedia for unification of definitions.

23 Establish the risk classification standard and establish the risk assessment standard.

24 In order to realize effective implementation of building codes, it is essential to obtain support and cooperation from all levels of government, building industry, designers and communities. Particularly, community participation is encouraged in designing and decision-making process. Building codes should be modern and updated, but they also should be simplified to be understood, and affordable to be followed.

25 Mapping disaster risk for different sectors in global, regional, local and place scale. Adding risk Education for different institutes.

26 More effort needs to be made to achieve commonly acceptable working definitions, a common language and a common culture of DRR. A UN reference glossary might help.

27 Designate (or create) an international structure responsible for the setting of standards for the access and sharing of data required in risk management and disaster reduction.

28 To analyze existing impact databases due to strong earthquakes; to develop the standards and content for international freely accessible web-based database with global coverage.

29 Commonality of communication: understanding of definitions, communicate common terminology linking the climate change community "communication terminology" with the disaster management terminology to better exchange knowledge on how to build resiliency.

30 Develop international investment guidelines for reconstruction with priority and percentage on topics that will create the best effect.

31 E4 Cat Risk policy with quantitative objectives and rules (supporting EU article 100.2).

32 In the interation of different groups involved in disaster and risk reduction, it is important to first establish common definitions, a common language and to ensure to have necessary databases available. Most strategies follow sectoral approaches. This should change; we need integrated approaches. We need resilience to

prevent and react to disasters (new approaches). A systemic view and co-operation is necessary to learn about the degree of uncertainty. There are no universal solutions, but "we have to put different pieces of puzzles together" to propose the right solutions/measures.

33 To analyze existing impact databases due to strong earthquakes; to develop the standards and content for international freely accessible web-based database with global coverage.

34 We need a common language and a common methodology for risk management which recognises the importance of context. Therefore, we need to champion ISO/PIS 31000 risk management.

35 We need to find practical ways to link the macro/policy level dimension with the reality on the ground (particularly the poor, their vulnerabilities, and their existing capacities and strengths). Perhaps new policy initiatives can be "ground-truthed" in selected communities as part of a consultation and verification process.

36 As the same kind of disasters happen over and over, install an independent global and regional institution to map community risk at national levels so NGOs, gov't and international agencies can plan programming and install preparedness and risk reduction measures based on risk probabilities.

37 Design and implement a simple, robust method of risk identification and contingency planning for emerging risks (such as pandemics) and implement if necessary through legislation at the local authority level.

38 Diverse and varying threads for standardization exist. Interdependency of systems affects standardization. Needs across Europe for protection infrastructure, for pandemic diseases and for environmental phenomena. Need for interoperability and accessibility arrangements for reliable and timely data, but common standards are not the solution in every case. Experts' participation in working group is essential.

39 Emergency planning should go towards a sort of international standardization. The aim is to have high compatibility between different cultures of emergency.

40 Importance of further development of ISO-standards 223xxx. Strong audience agreement.

41 Needs for standardized ways to measure preparedness for risk worldwide

42 Prepare elaborate guidelines on vulnerability and risk assessment.

43 Review the standards of data.

44 Semantic interoperability needs to be standardized. Globally integrated ecosystems rely on ICT as their critical information infrastructure.

45 Standardisation needs to be linked to research and education.

46 Standardisation of contexts/quality of emergency planning, not necessarily of organisation/structures.

47 Standardisation supports cross-fertilization between man-made and natural disasters.

48 Standards are urgently needded for processes in risk management, not just for products and tools.

49 Standards do not solve the problems, they are just tools to harmonize and help to find a common language amongst different sectors involved.

50 Utilize world health guidelines to minimize waste of drugs and supplies when sent for a disaster. Needs to be more international focus on determining usefulness of donations.

Abbreviations used:

CCA - Climate Change Adaptiation

DRR - Disaster Risk Reduction

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SDC – Swiss Agency for Development and Cooperation

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ETH Board – Board of the Swiss Federal Institute of Technology

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