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Proposal of establishing International Disaster Risk and Preparedness Standard
(Vulnerability Assessment Standard)

In order to monitor disaster vulnerability and to promote integration of players and resources to efficient DRR actions, a common scale of measuring risk is necessary as a basis of risk communication. A universal scale is especially important for nations which wish to persuade overseas investors, by showing the safety level of the land, to come to their industrial parks.

There have been a number of efforts to develop such a scale and some preliminary results have been obtained. But their use is so far limited for a general overview purpose such as comparing and ranking national status of risk and vulnerability and not in detail for local use in DRR management. The current indices are not yet operational for local and community to use. In the case of social security ISO which is already in use, the target is limited to companies' business continuity planning.

There is a strong need for developing a standard scale of measuring the absolute level of disaster risk, preparedness and remaining risk for communities, local governments and regions of any scale to assess their level of risk and preparedness in an absolute value and to take an action in a positive spiral to reduce the remaining risk.

IRDR has an important role as a scientific initiative to call scattered groups of experts in this area to work together and promote integration of the efforts.

1. What is standard?
   1) It is a standard scale of measurement of disaster risk, preparedness (risk reduction), and remaining risk. Remaining risk = disaster risk – preparedness.
   2) Disaster risk is an intersection of hazard and exposure of vulnerable objects. Standard scale is necessary to measure hazards, exposure and vulnerability. As vulnerability decreases with preparedness, standard scale is necessary to measure vulnerability without preparedness and preparedness separately.
   3) Preparedness is a coping capacity that reduces risk by structural means and non-structural means. Standard scale of measurement of preparedness is necessary for all components and their combination of risk reduction means.
2. Why is standard necessary?
   1) A standard scale is necessary for monitoring risk, especially exposure of vulnerability, and preparedness in order to reduce disaster risk. In comparison with monitoring hazards, monitoring vulnerability is much less exercised which

is a strong holdback of disaster risk reduction. (This is why this project may be called Vulnerability Measurement Standard in order to emphasize its importance.)

2) In order to promote efficient collaboration of different players and resources of DRR, a common scale of understanding and measuring risk and preparedness is indispensable. This is a common language of risk communication to realize integrated approach for DRR.
3) It serves as a universal scale for any nation to show its safety to the outer world to invite investors to come for development and building factories in industrial parks.
4) It serves as a universal scale for any community to direct itself for continuous improvement with a positive spiral to DRR.

3. How can we approach for the agenda?
   1) There are quite a few research initiatives on risk assessment, vulnerability indicators/indices, risk management standard such as
      - UNU Institute for Environment and Human Security (UNU-EHS, WorldRiskReport 2011)
      - UNESCO WWAP, World Water Development Report 2009 Chapter 10.
      - UNISDR Indicators of progress; Global Assessment Report (currently for GAR 2013),
      - WB Global Facility for Disaster Reduction and Recovery (GFDRR),
      - OECD Global Risk Modeling Organization (GRMO),
      - Global Network of Civil Society Organizations for DRR (GNDR)
      - ISO Technical Committee 233 on Social Security (ISO/TC 223),
      - UN Secretary General Advisory Board (UNSGAB) High Level Expert Panel (HLEP) "Action Plan on Water and Disaster" Action 30 by International Flood Initiative (IFI) etc.
   2) Each nation has national laws, standard format of monitoring indicators for disaster management.
      - US Army Corps of Engineers (ACE); National Fire Protection Association (NFPA),
      - Central Disaster Prevention Council, Cabinet Office, G of Japan; Disaster Countermeasures Basic Act (Law No. 223 of November 15, 1961); Report of Preparing Guideline of Assessing Regional Disaster Prevention and Emergency Response Capacity of Local Government (Fire and Disaster Management Agency, 2003); Disaster prevention sectors of Ministry of

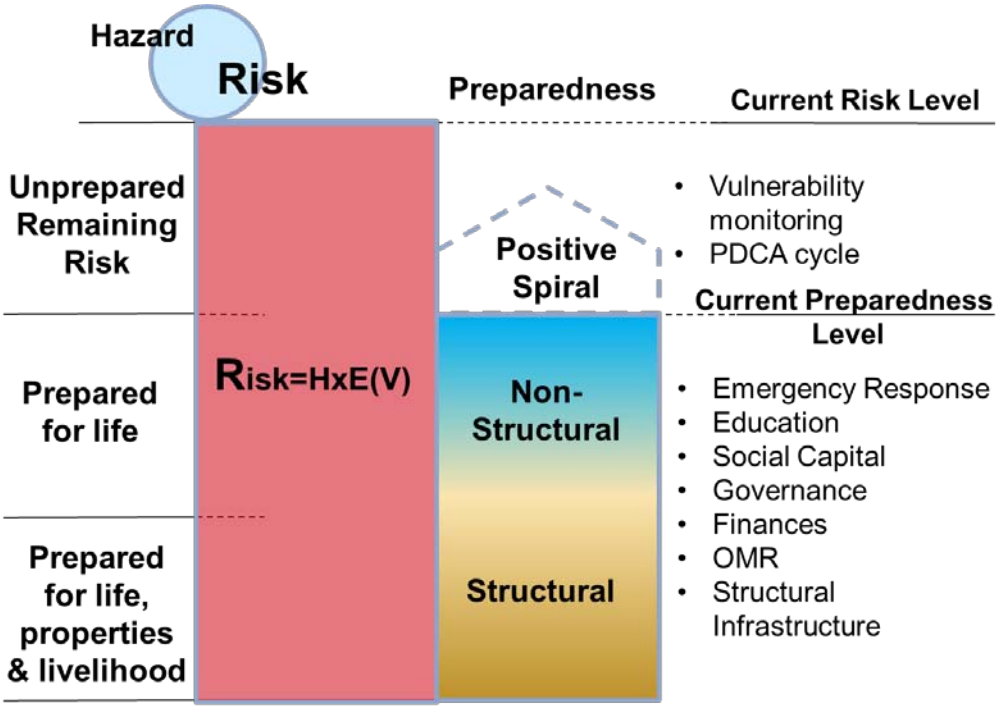
Land, Infrastructure, Transport and Tourism (MLIT)

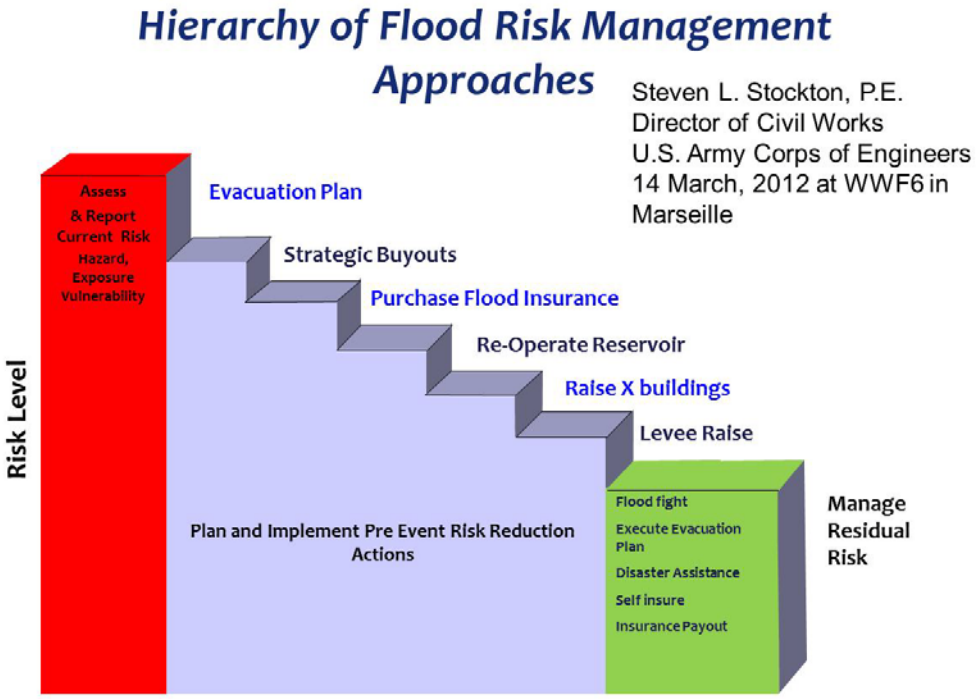
- The Netherland, the UK, EU and many other nations have also such experiences. Ex.: EU Flood Directives (2007)

3) By collaboration and integration of such efforts and exercises into common scale of measuring risk and preparedness lead to a good standard.
   - Establish a working group to identify the scope and objective.
   - Organize workshops and establish networks.
   - Establish thematic working groups.
4) In parallel, bring the issue to the UNISDR process for post-Hyogo Frame Work for Action. Make an input to Rio+20 in June, UN thematic debate in July, etc.

4. How may IRDR-Japan contribute to this initiative?
   1) Organize an internal working group, identify the strategy of standardization.
   2) Develop some example set of measures for Japanese cases.
   3) Organize an international workshop for vulnerability assessment standard.
   4)

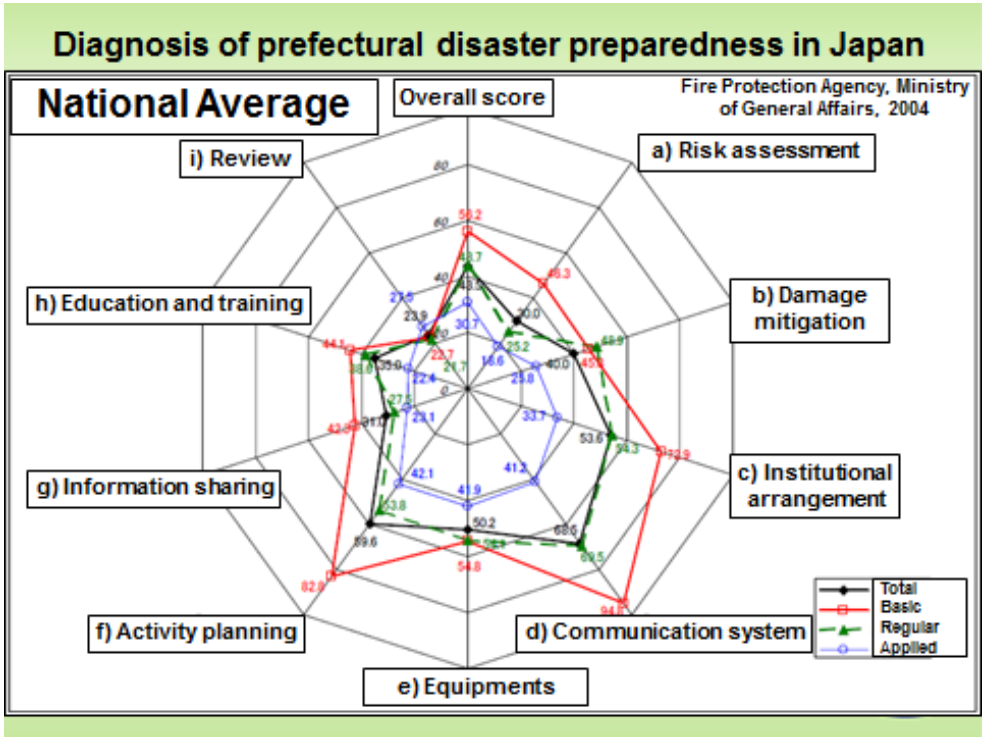
Two conceptual diagrams of standard of measurements: ICHARM and USACE.



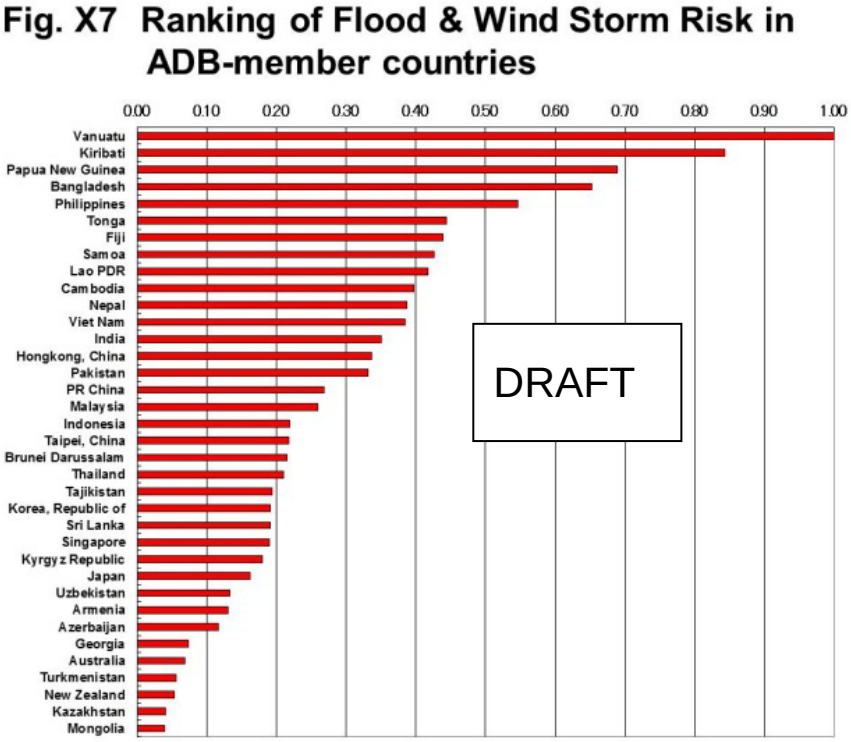


Some examples of measuring risk and preparedness by FPA, ICHARM & UNU-EHS.

Fire Protection Agency, Ministry of General Affairs, Japan, 2004



ICHARM Report to ADB “Asian Water Disasters Outlook” (in final editing)



WorldRiskReport 2011 (UNU-EHS, 2011)

Rank	Country	WorldRiskIndex	Exposure	Vulnerability	Susceptibility	Lack of coping capacities	Lack of adaptive capacities
1.	Vanuatu	32.00 %	56.33 %	56.81 %	37.14 %	79.34 %	53.96 %
2.	Tonga	29.08 %	56.04 %	51.90 %	28.94 %	81.80 %	44.97 %
3.	Philippines	24.32 %	45.09 %	53.93 %	34.99 %	82.78 %	44.01 %
4.	Solomon Islands	23.51 %	36.40 %	64.60 %	44.11 %	85.95 %	63.74 %
5.	Guatemala	20.88 %	38.42 %	54.35 %	35.36 %	77.83 %	49.87 %
6.	Bangladesh	17.45 %	27.52 %	63.41 %	44.96 %	86.49 %	58.77 %
7.	Timor-Leste	17.45 %	25.97 %	67.17 %	52.42 %	89.16 %	59.93 %
8.	Costa Rica	16.74 %	42.39 %	39.50 %	21.96 %	63.39 %	33.14 %
9.	Cambodia	16.58 %	26.66 %	62.18 %	48.28 %	86.43 %	51.81 %
10.	El Salvador	16.49 %	32.18 %	51.24 %	30.55 %	75.35 %	47.82 %
11.	Nicaragua	15.74 %	27.64 %	56.94 %	41.23 %	83.00 %	46.59 %
12.	Papua New Guinea	15.45 %	23.26 %	66.41 %	50.04 %	84.83 %	64.36 %
13.	Madagascar	14.46 %	20.68 %	69.91 %	67.51 %	85.65 %	56.57 %
14.	Brunei Darussalam	14.08 %	36.28 %	38.83 %	13.48 %	66.06 %	36.93 %
15.	Afghanistan	14.06 %	18.45 %	76.19 %	61.09 %	93.94 %	73.55 %
16.	Niger	14.03 %	18.49 %	75.86 %	69.38 %	89.54 %	68.65 %
17.	Gambia	13.90 %	22.20 %	62.63 %	45.29 %	83.99 %	58.62 %
18.	Bhutan	13.65 %	24.63 %	55.42 %	34.56 %	79.02 %	52.67 %
19.	Fiji	13.57 %	25.87 %	52.48 %	36.32 %	76.44 %	44.67 %
20.	Guinea-Bissau	13.12 %	18.53 %	70.84 %	59.51 %	89.76 %	63.26 %
21.	Jamaica	12.89 %	28.11 %	45.85 %	26.32 %	71.39 %	39.83 %
22.	Chad	12.25 %	16.30 %	75.14 %	64.28 %	94.36 %	66.78 %
23.	Honduras	12.10 %	21.81 %	55.50 %	37.61 %	80.03 %	48.85 %
24.	Dominican Republic	12.00 %	24.91 %	48.17 %	30.83 %	73.55 %	40.14 %
25.	Chile	11.97 %	31.25 %	38.31 %	21.86 %	55.89 %	37.19 %
26.	Mauritius	11.91 %	29.59 %	40.24 %	19.57 %	60.08 %	41.08 %
27.	Senegal	11.76 %	18.70 %	62.90 %	49.02 %	81.99 %	57.68 %
28.	Indonesia	11.69 %	20.49 %	57.06 %	37.66 %	83.31 %	50.20 %
29.	Burkina Faso	11.58 %	16.92 %	68.46 %	56.92 %	86.37 %	62.09 %
30.	Burundi	11.56 %	16.09 %	71.82 %	63.88 %	90.68 %	60.89 %
31.	Mali	11.51 %	16.59 %	69.35 %	54.74 %	85.45 %	67.85 %
32.	Haiti	11.45 %	15.95 %	71.77 %	64.03 %	89.46 %	61.83 %
33.	Sierra Leone	11.25 %	15.31 %	73.50 %	64.79 %	89.09 %	66.62 %
34.	Vietnam	11.21 %	22.02 %	50.89 %	30.82 %	78.88 %	42.97 %
35.	Japan	11.13 %	39.57 %	28.13 %	16.30 %	36.66 %	31.44 %
36.	Benin	10.90 %	16.20 %	67.24 %	54.87 %	84.90 %	61.94 %

Standard is an important subject to be declared in the post-HFA.