

Proposal of establishing “Standard Scale of Measuring Risk and Preparedness”

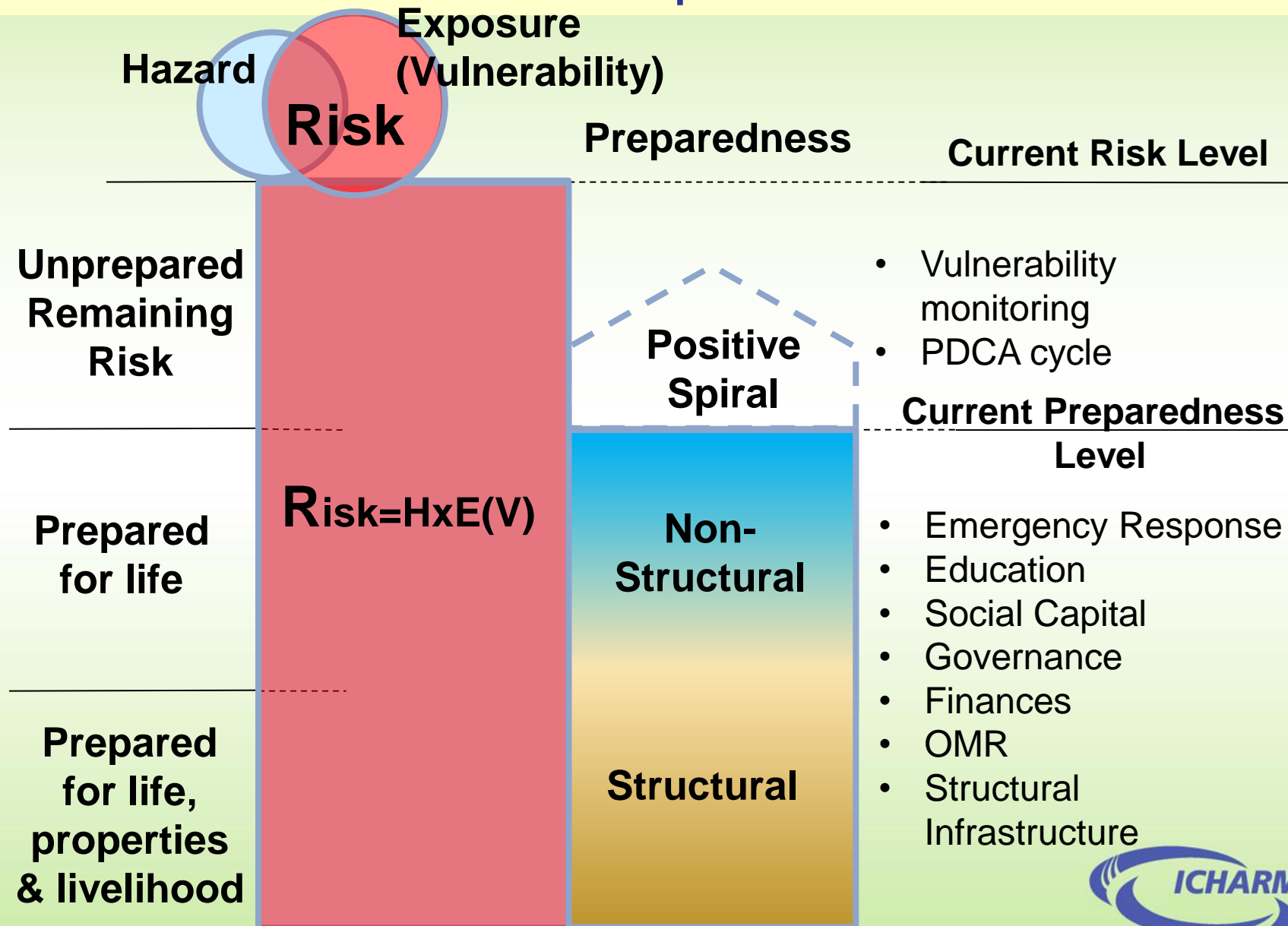
- Standard scale is a basic language and tool of risk communication for integration of players and resources to common end of DRR
- IRDR should play a role of a scientific integrator of many existing efforts of establishing standards.

Some current efforts

- UNU-EHS, WorldRiskReport 2011
- UNESCO WWAP, WWDR2009 Chapt 10,
- UNISDR Indicators of progress (of HFA), 2008; GAR,
- WB Global Facility for DRR,
- 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),
- UNSGAB/HLEP “Action Plan on Water and Disaster” Action 30 by International Flood Initiative (IFI) etc.
- US Army Corps of Engineers (ACE); NFPA,
- Guideline of Assessing Reg DP & ER Capacity of Local Gov’t (Fire and Disaster Management Agency, Japan, 2003); MLIT;
- EU Flood Directives (2007)



International Disaster Preparedness Standard



Hierarchy of Flood Risk Management Approaches

Steven L. Stockton, P.E.
Director of Civil Works
U.S. Army Corps of Engineers
14 March, 2012 at WWF6 in
Marseille



Exposure of vulnerability

$$\text{Risk} = \sum_H \text{prob}(H) \times \text{Loss}(H)$$

$$\text{Original Risk} = \sum_H \text{prob}(H) \times \text{Loss without preparedness}(H)$$

$$\left\{ \begin{array}{l} \text{Remaining Risk} = \sum_H \text{prob}(H) \\ \times (\text{Loss without preparedness}(H) \\ - \text{Reduction of loss by prep}(H)) \end{array} \right.$$

Exposure of vulnerability



Diagnosis of prefectural disaster preparedness in Japan

National Average

Overall score

Fire & Disaster Management Agency,
Ministry of General Affairs, 2004

i) Review

a) Risk assessment

h) Education and training

b) Damage mitigation

g) Information sharing

c) Institutional arrangement

f) Activity planning

d) Communication system

e) Equipments

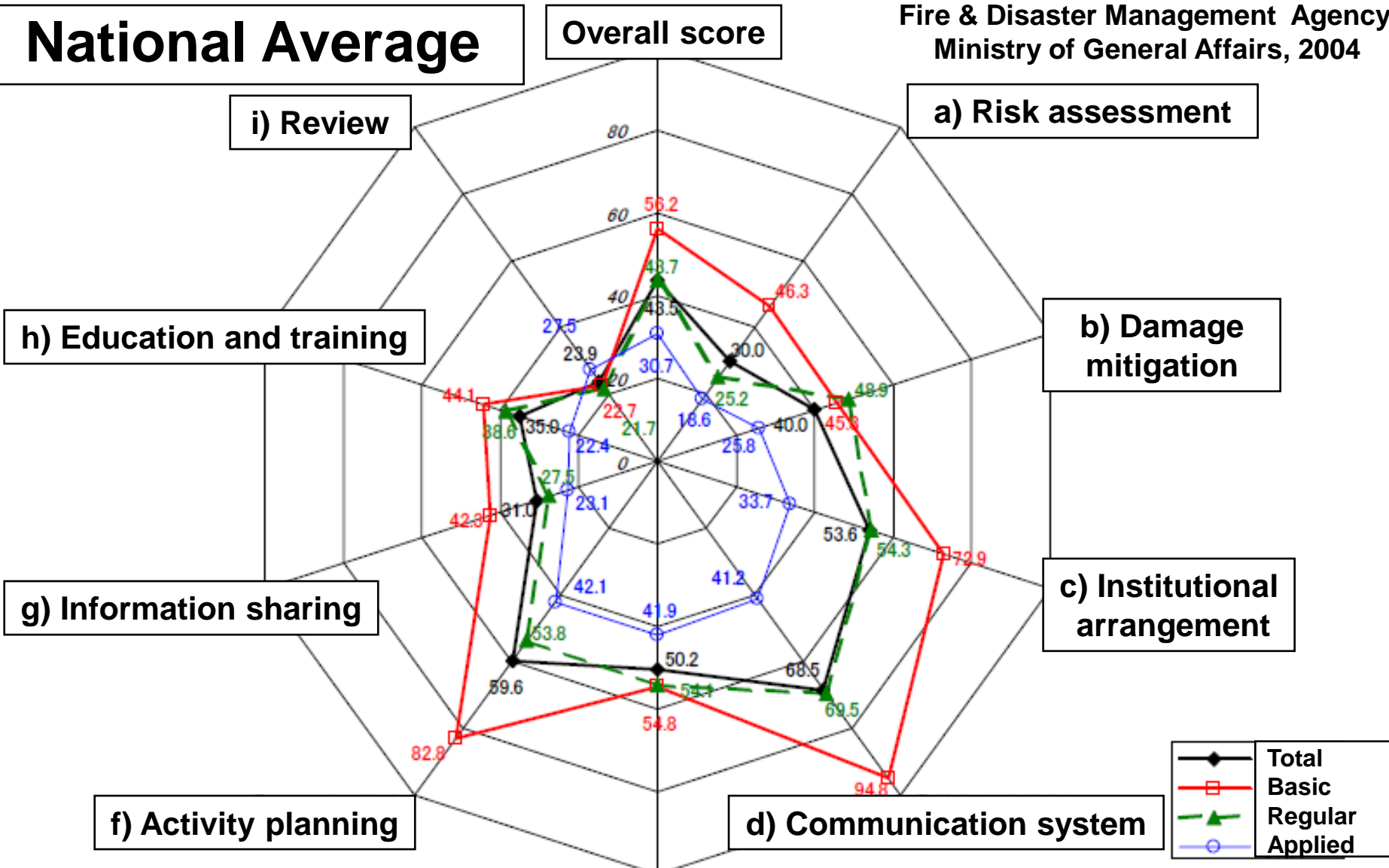
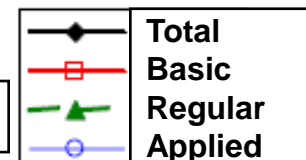
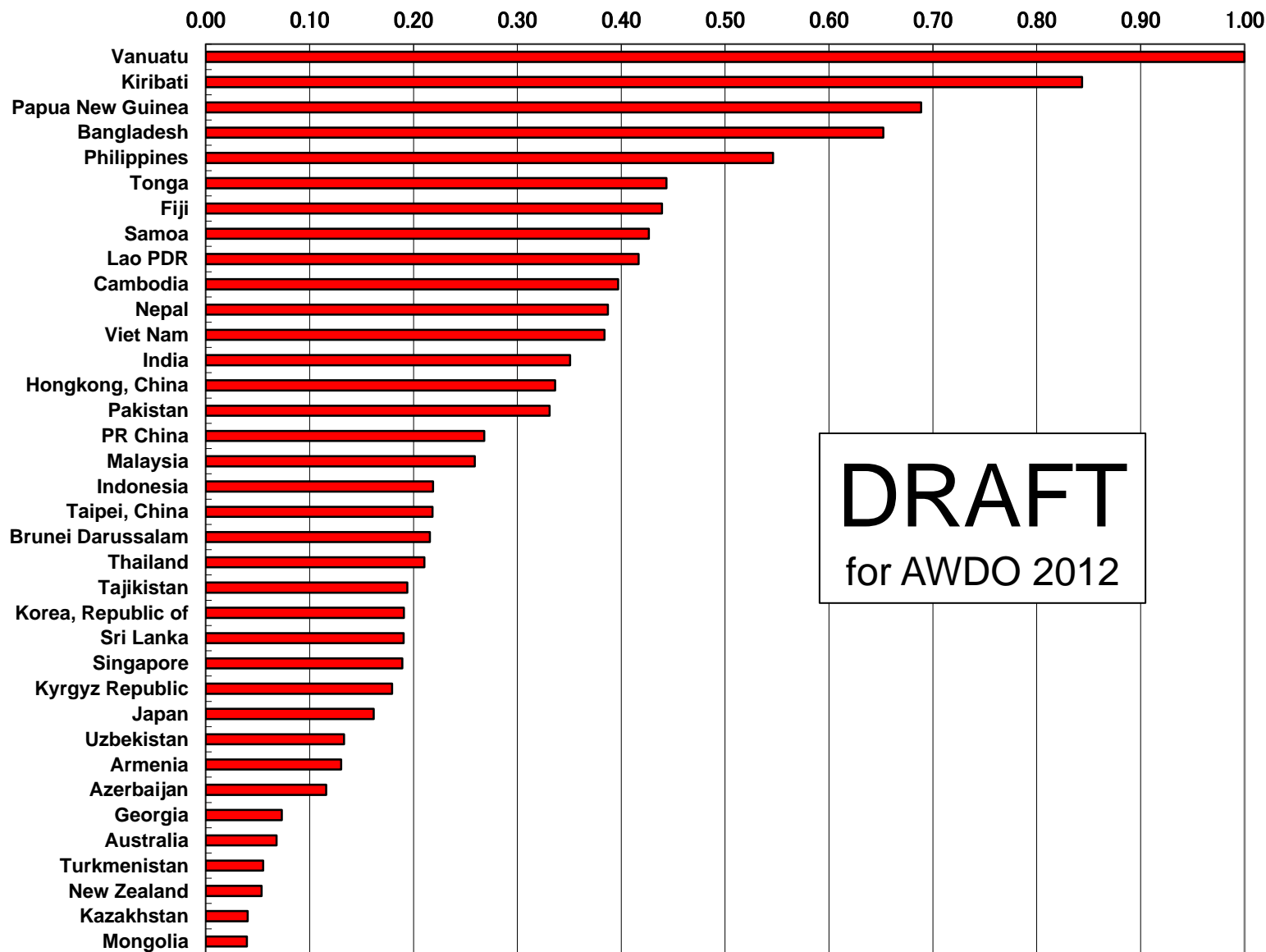


Fig. X7 Ranking of Flood & Wind Storm Risk in ADB-member countries (ICHARM)



DRAFT
for AWDO 2012

No	Country	Scarcity of data												Population (1,000 people)	Population ratio of total ADB member country's population
		CPI	PPP	NODAG	IMR	GDP	TRC	LR	ER	TR	AGP	CL	PRL		
1	Marshall Islands, Republic of	X	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	57	0.0015%
2	Afghanistan	DA	X	DA	DA	DA	X	DA	DA	DA	DA	DA	IC	24,507	0.6619%
3	Bhutan	DA	X	X	DA	DA	DA	DA	DA	DA	DA	DA	IC	650	0.0176%
4	Solomon Island	DA	X	DA	DA	DA	DA	X	DA	DA	X	DA	DA	474	0.0128%
5	Maldives	DA	X	X	DA	DA	X	DA	DA	DA	X	DA	DA	292	0.0079%
6	Micronesia, Federal States of	X	X	X	DA	DA	DA	DA	X	X	DA	DA	DA	109	0.0029%
7	Palau	X	DA	X	DA	DA	DA	DA	DA	X	DA	X	X	20	0.0005%
8	Timor-Leste	DA	X	X	DA	DA	X	DA	DA	X	DA	X	DA	992	0.0268%
9	Tuvalu	X	DA	X	DA	DA	DA	X	DA	X	DA	X	DA	10	0.0003%
10	Myanmar	DA	X	X	X	X	DA	X	DA	DA	DA	DA	X	48,345	1.3058%
11	Nauru	X	X	X	DA	DA	DA	X	DA	X	X	X	DA	10	0.0003%
12	Cook Island	X	X	X	DA	DA	DA	X	X	X	X	X	DA	19	0.0005%
Total ADB member Country's population:											3,702,349,000	75,485	2.0388%		

* X: Data are not available, DA: Data are available

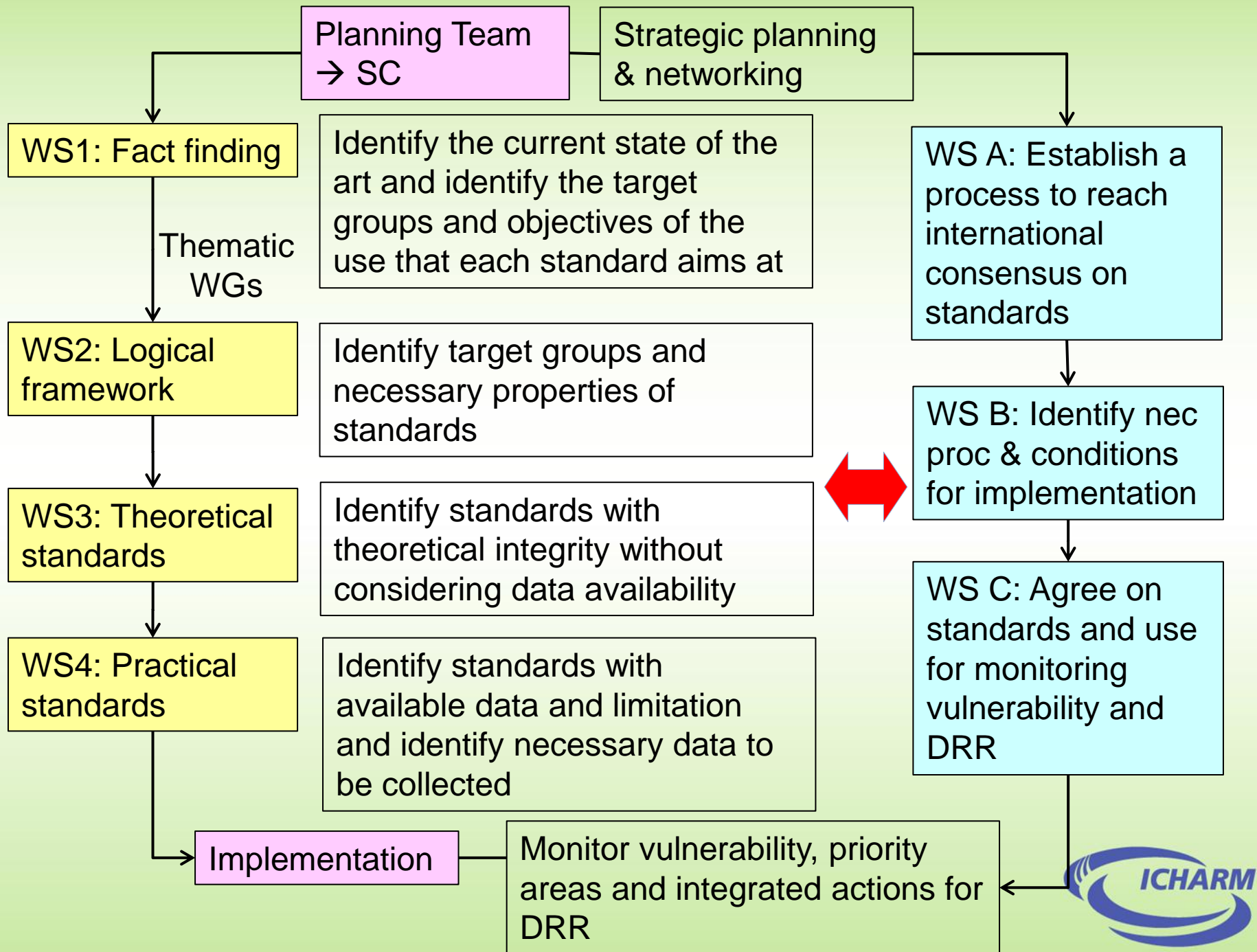
CPI: Corruption Perceptions Index, PPP: Percentage of Population below US\$1 per Day Consumption, NODAG: Net official development assistance as % of GNI, IMR: Infant mortality rate, GDP: Gross Domestic Product, TRC: Total Reservoir Capacity, LR: Literacy ratio, ER: Enrolment ratio, TR: Television receivers per one thousand inhabitants, AGP: Agriculture Gross Production, CL: Coastline Length, PRL: Paved Road Length

Table 9b. Data availability matrix of 12 countries where calculation at present is not possible



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 %

UNU-EHS, WorldRiskReport2011



For post-HFA

- Stronger political action for DRR & resiliency building
 - Disaster is social but risk is political Accountability
 - Land use zoning, infrast investment, precautionary actions, ...
- Structural infrastructure for economic development
 - Business continuity needs safety by structural means
- International Standard for Disaster Risk/Preparedness
 - To **measure** the risk & preparedness by a universal scale
 - To **share & start off from** the common unds/vision by all players
 - To **monitor** vulnerability & risk: Risk Impact Assessment (RIA)
 - To **demonstrate** the safety level to attract investors
 - To **guide** communities for positive spiral
- Policy making based on Science and Technology
 - Knowledge, reality & potential

