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Item 3 (f) of the provisional agenda

Review of issues pertinent to the subsidiary structure of the Commission, including the work of the ESCAP regional institutions: Disaster risk reduction**Note verbale dated 18 April 2011 from the Embassy of the Islamic Republic of Iran in Thailand addressed to the Executive Secretary of the Economic and Social Commission for Asia and the Pacific**

The Embassy of the Islamic Republic of Iran presents its compliments to the Executive Secretary of ESCAP and has the honour to introduce herewith a revised draft resolution on the establishment of the Asian and Pacific Centre for the Development of Disaster Information Management (APDIM) in the Islamic Republic of Iran.

In realization of the mandate stipulated in resolution 66/8 entitled “Review of the proposal for the establishment of the Asian and Pacific centre for information, communication and space technology-enabled disaster management in the Islamic Republic of Iran”, the Islamic Republic of Iran submitted to the ACPR a 32-page report that was concluded after close cooperation, consultation and negotiation with Your Excellency and the secretariat’s relevant authorities as well as the expert team in December 2010. Another copy of the already circulated report which serves as the supplementary information requested in paragraph 1(a) of the resolution is attached herewith.

Given that “the generous offer of the Government of the Islamic Republic of Iran to host the proposed centre” is appreciated in preambular paragraph 2 of said resolution, and also to respond positively to the invitation stipulated in paragraph 1, the Islamic Republic of Iran hereby has the honour to introduce the revised draft resolution and its supplementary information to be circulated amongst member States of the Commission in accordance with rule 31 of the rules of procedure of the Commission.

The Embassy of the Islamic Republic of Iran avails itself of this opportunity to renew to the Executive Secretary of ESCAP the assurances of its highest consideration.

Annex to the note verbale dated 18 April 2011 from the Embassy of the Islamic Republic of Iran in Thailand addressed to the Executive Secretary of the Economic and Social Commission for Asia and the Pacific *

**Proposal for the establishment of:
Asia and the Pacific Regional Centre for
Development of Disaster Information Management
(APDIM)**

**(Supplementary information as per request of UNESCAP
Resolution 66/8)**

**Prepared and presented by
The Islamic Republic of Iran**

* Supplementary information on the operational details of the proposal, to clarify the implications, if any, of such changes on the scope, functions and value added products and services to be offered, along with timelines for scheduling the introduction of those activities, as referred to in paragraph 1 of ESCAP resolution 64/10.

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Introduction

The Asia-Pacific region continue to suffer from negative impact of natural hazards and disasters more than any other region in the world. Despite the enormous efforts made by the States and various relevant institutions to reduce the risk and loss of disasters at national and regional levels, the available reports and statistics indicate that the region is still vulnerable to a number of natural hazards which may trigger catastrophic disasters. (1)

The India Ocean Tsunami of 2004 has been a turning point in the regional and international efforts aiming at substantial reduction of disaster risk and negative impact. The 2nd World Conference on Disaster Reduction which was held in Kobe, Japan in January 2005 and shortly after the Tsunami concluded a number of strategic outcomes among which the Hyogo Framework for Action is the most important one. The “Hyogo Framework for Action, 2005-2015: Building the Resilience of Nations and Communities to Disasters” is the most comprehensive international instrument on disaster reduction and provides strategic framework for development of both preventive and responsive measures and capacities at local, national, regional and international levels. However, the implementation of the Hyogo Framework is a long process and requires participation and contribution of all sectors and

¹ Global Disaster Risk Assessment Report, UNISDR, 2009, p 19

actors in a coordinated way. The Hyogo Framework elaborates on the roles and responsibilities of relevant stakeholders for the implementation of the Framework.

At regional level, many efforts have been made by the States, regional and sub-regional organizations and community based institutions to reduce the risk and impact of disasters by strengthening the capacities of states, institutions and the people. ESCAP as the main UN body in the region has put disaster risk reduction and management as one of its priorities in the recent years and allocated extra resources and capacities to help the countries of the region to strengthen their capacities and capabilities to reduce disaster risk and losses. This priority has been reflected in the structural and programmatic planning of UNESCAP Secretariat and included in the programs of number ESCAP subsidiary bodies.

The Asia- Pacific regional movement on disaster risk reduction and management is a very encouraging development, but there is still a long way to reach the ideal situation. The major destructive disasters occurred in the region such as the Bam earthquake of 2003 in Iran, India Ocean Tsunami of 2004, Wenchuan earthquake in China and cyclone Nargis in Myanmar in 2008 and the flood in Pakistan in 2010 and the recent earthquake and tsunami in Japan in March 2011, are all evidences for the deficiencies on disaster management and risk reduction in the region.

Among several challenges for effective disaster management and risk reduction, information management is one of the key areas for improvement. The importance of disaster information management has been highlighted in several disasters in the region.

This reality has been well taken into consideration in a number of ESCAP decisions and resolutions on enhancement of disaster management and risk reduction.

The Government of the Islamic Republic of Iran with the aim of contributing to improvement and enhancement of disaster management and risk reduction and filling the gaps in disaster information management in the Asia and the Pacific region proposed the establishment and hosting of the “Asia and the Pacific Regional Center for Development of Disaster Information Management” (APDIM) as a subsidiary body of ESCAP in Iran. As a country with extensive experiences and knowledge on disaster management and risk reduction, Iran is committed to support the development and enhancement of disaster management and risk reduction capacities at national and regional levels.

This proposal elaborates the necessity, objectives, scope, functions, value added and services of the proposed Center for the consideration of and adoption by ESCAP 67th Session in 2011.

Definitions

The following terms used in the proposal are defined based on the UNISDR Terminology.

Disaster: A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

Disaster Information management: The process of collection, classification, analysis and effective distribution of data and information on all aspects of disaster management before, during and after disasters to the relevant audiences in a timely and reliable manner

Disaster risk: The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period.

Disaster risk reduction: The concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

Disaster risk management: The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.

Contingency planning: A management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.

Early warning system: The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss.

Exposure: People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.

Hazard: A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Natural hazard: Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Preparedness: The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.

Prevention: The outright avoidance of adverse impacts of hazards and related disasters.

Recovery: The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

Resilience: The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a

timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Response: The provision of emergency services and public assistance during or immediately after a disaster in order to save lives reduces health impacts, ensure public safety and meet the basic subsistence needs of the people affected.

Retrofitting: Reinforcement or upgrading of existing structures to become more resistant and resilient to the damaging effects of hazards.

Risk: The combination of the probability of an event and its negative consequences.

Risk assessment: A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.

Risk management: The systematic approach and practice of managing uncertainty to minimize potential harm and loss.

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

1. Disasters global and regional trends

Disasters triggered by natural hazards continue to affect the life of millions of people around the world negatively and hamper the development of nations and communities. Despite the considerable efforts made in many countries to reduce the risk and native consequences of disasters, risk levels for most of the hazards are increasing over time. These increases in risk are being driven by the growing exposure of people and assets, for example through rapid economic and urban growth in cyclone prone coastal areas and earthquake prone cities. Vulnerability decreases as countries develop, but not enough to compensate for the increase in exposure. (2)

Over the period 1980-2009, Asia and the Pacific suffered 45 per cent of global disasters, 42 per cent of the economic losses and around 60 per cent of disaster-related deaths. Eighty-six per cent of the total population was affected by disasters. The most common form of disaster in the region is flooding, followed by cyclones, though the greatest loss of life has been from earthquakes.

The Asia-Pacific region also experiences many frequent but low-level disasters that inflict serious damage for highly vulnerable populations. The Asia-Pacific region has the world's top ten most exposed countries to hazards and for cyclones six Asia-Pacific countries are in the top 10-reflecting the high concentration of people living in river flood plains and deltas. Despite the efforts to improve multi-hazard warning systems, between the periods 2000-2004 and 2005-2009 the risk from these disasters do not appear to have been reduced. (3)

Tables 1 to 4 present a comparative picture of 4 key types of hazards in the Asia-Pacific and other regions including the number of death and affected people and the amount of economic losses. These figures show that overall and for 4 types of disasters, the Asia-Pacific region is the most hit and affected region in the world. The main causes for such high degree of disaster risk and negative impact are the frequency, size and power of hazards, vulnerability and exposure to hazards.

² Global Disaster Risk Assessment, UNISDR, 2009

³ Protecting Development Gains, Reducing Disaster Vulnerability and Building Resilience in Asia and the Pacific, the Asia Pacific Disaster Report, ESCAP-ISDR, 2010, P 114

Table 1-1 Summarized Table of Floods sorted by Continent from 1900 to 2011

Source: "EM-DAT: The OFDA/CRED International Disaster Database

		# of Events	Killed	Total Affected	Damage (000 US\$)
Africa	Unspecified	221	6 909	13 592 362	965 007
	Flash flood	84	2 766	2 236 544	457 086
	General flood	442	13 609	37 566 180	3 937 606
	Storm surge/coastal flood	7	169	1 202 829	42 750
Americas	Unspecified	357	56 972	28 883 356	22 187 497
	Flash flood	62	32 398	2 758 310	4 839 870
	General Flood	466	11 489	46 432 931	54 216 840
	General flood/Mudslide	1	11	9 950	-
	Storm surge/coastal flood	16	1 070	1 053 098	1 212 720
Asia	Unspecified	529	2 365 297	863 319 573	41 796 252
	Flash flood	255	26 171	158 535 058	26 179 212
	General flood	751	4 394 626	2 124 649 377	200 654 194
	Storm surge/coastal flood	40	2 060	18 174 201	8 472 384
Europe	Unspecified	133	3 289	4 265 569	24 260 105
	Flash flood	45	1 629	535 689	14 471 710
	General flood	304	1 879	8 334 865	67 296 827
	Storm surge/coastal flood	7	2 028	615 531	342 622
Oceania	Unspecified	46	219	432 393	580 021
	Flash flood	18	90	36 939	1 892 100
	General flood	47	129	372 876	3 748 754
	Storm surge/coastal flood	10	14	78 030	252 500

Table 1- 2 Summarized Table of Earthquake (seismic activity) s sorted by Continent from 1900 to 2011

Source: "EM-DAT: The OFDA/CRED International Disaster Database

		# of Events	Killed	Total Affected	Damage (000 US\$)
Africa	Earthquake (ground shaking)	74	21 072	1 694 094	12 129 699
	Tsunami	4	312	109 913	230 000
Americas	Earthquake (ground shaking)	254	438 863	32 125 646	99 609 906
	Tsunami	7	380	2 472	900
Asia	Unspecified	2	78	14 726	-
	Earthquake (ground shaking)	595	1 562 383	126 685 542	309 953 474
	Tsunami	26	235 815	2 394 546	10 266 000
Europe	Earthquake (ground shaking)	151	275 878	5 470 846	61 866 336
	Tsunami	4	2 376	2	-
Oceania	Earthquake (ground shaking)	39	428	389 170	5 079 419
	Tsunami	10	2 793	20 843	159 500

Table1- 3 Summarized Table of Storms sorted by Continent from 1900 to 2011

		# of Events	Killed	Total Affected	Damage (000 US\$)
Africa	Unspecified	54	581	95 480	3 725
	Local storm	45	955	389 783	668 563
	Tropical cyclone	100	3 481	14 976 113	3 079 430
Americas	Unspecified	256	9 070	2 862 976	34 197 240
	Extra tropical cyclone (winter storm)	2	15	1 600	1 000 000
	Local storm	281	6 685	1 074 331	70 192 160
	Tropical cyclone	557	86 317	47 450 121	409 127 732
Asia	Unspecified	270	15 382	52 376 141	4 703 956
	Local storm	166	6 579	164 579 986	7 791 423
	Tropical cyclone	955	1 237 893	564 832 222	152 281 691
Europe	Unspecified	203	5 338	4 108 848	32 201 800
	Extra tropical cyclone	48	241	3 404 605	31 026 989
	Extra tropical cyclone (winter storm)	28	165	503 772	18 457 150
	Local storm	115	1 377	612 749	9 114 546
	Tropical cyclone	22	201	94 682	1 817 360
Oceania	Unspecified	46	59	3 538 285	1 172 672
	Local storm	33	287	426 114	6 132 728
	Tropical cyclone	193	1 721	2 294 253	7 461 364

Table 1-4 Summarized Table of Droughts sorted by Continent from 1900 to 2011

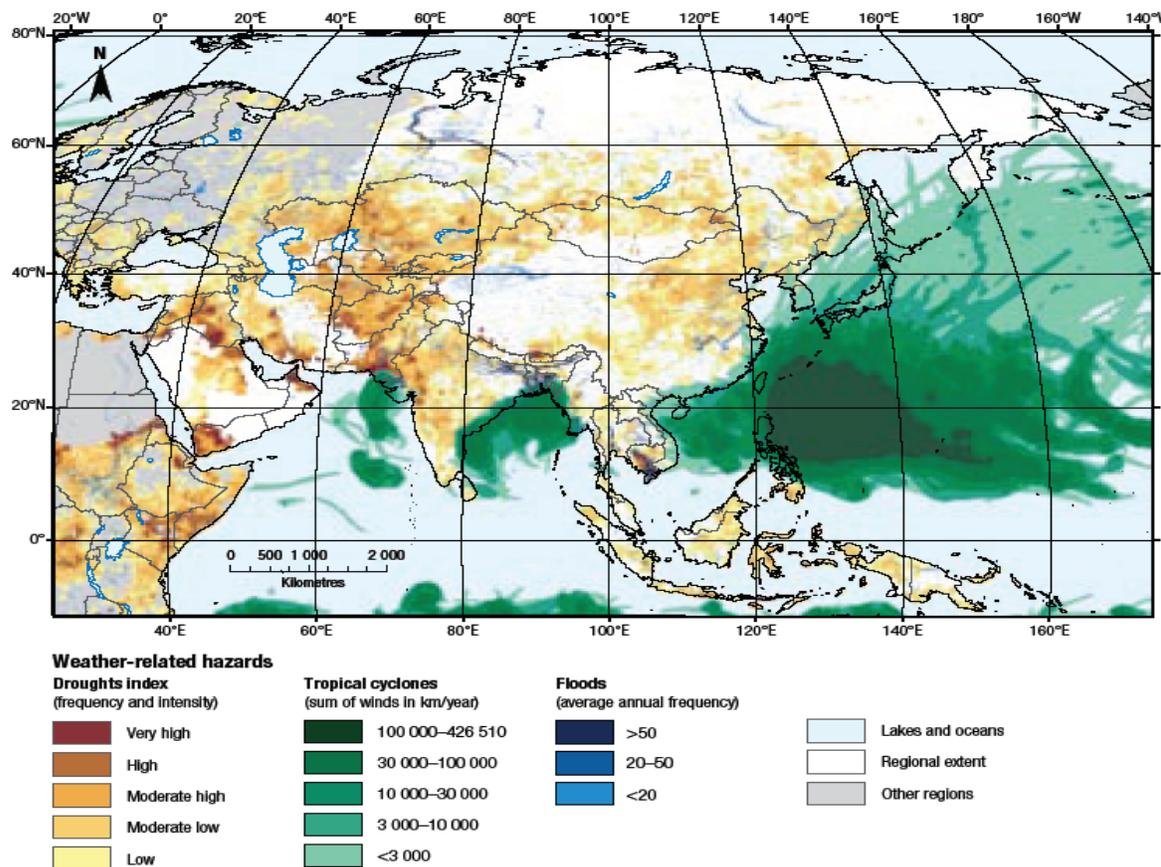
Source: "EM-DAT: The OFDA/CRED International Disaster Database

		# of Events	Killed	Total Affected	Damage (000 US\$)
Africa	Unspecified	1	-	2 400 000	-
	Drought	269	844 143	317 936 829	5 419 593
Americas	Drought	123	77	65 133 841	20 811 139
Asia	Drought	147	9 663 389	1 666 286 029	33 823 425
Europe	Drought	38	1 200 002	1 5482 969	21 461 309
Oceania	Drought	19	660	8 027 635	10 703 000

The following maps show various types of tectonic and weather related hazards in Asia:

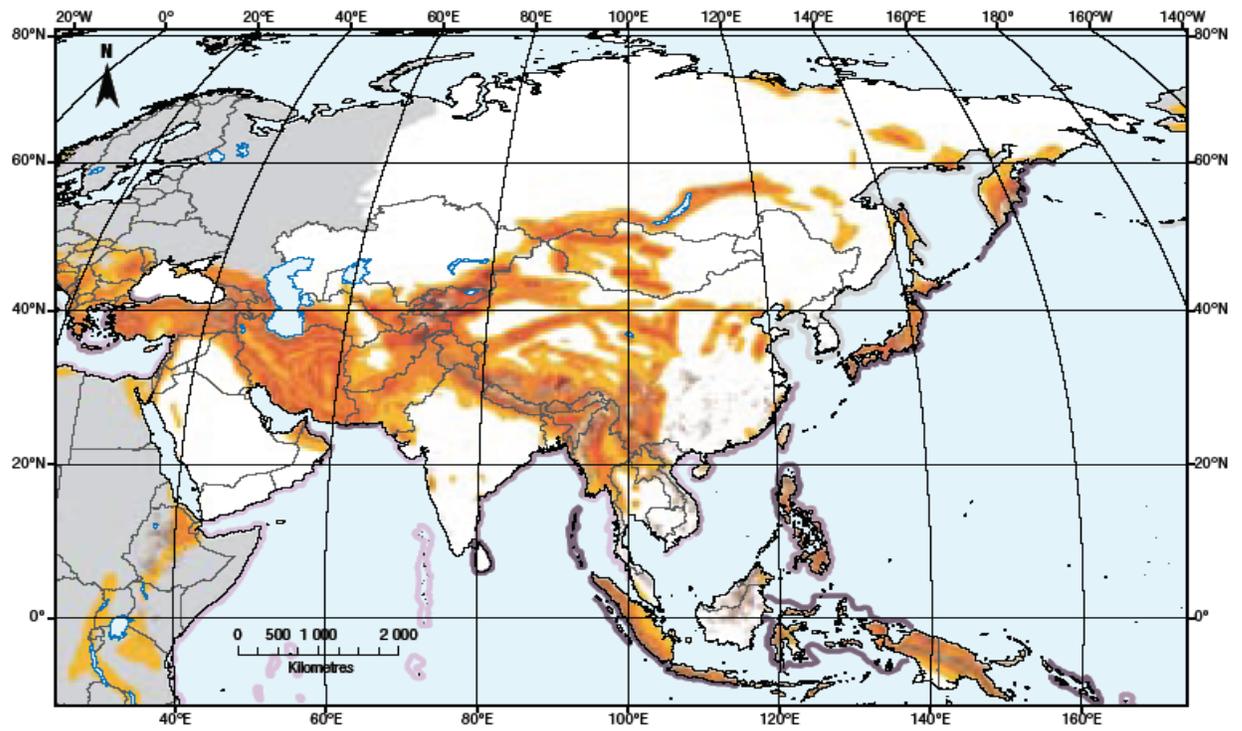
Map 1-1 Weather related hazards in Asia

(Source: Global Disaster Risk Assessment, 2009, UNISDR)



Map 1-2 Tectonic hazards in Asia

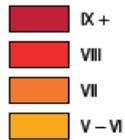
(Source: Global Disaster Risk Assessment, 2009, UNISDR)



Tectonic hazards

Earthquakes

(MMI for 10% in 50 years)



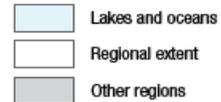
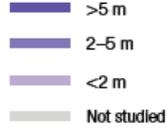
Landslides

(Intensity and frequency)



Tsunami height

(coasts covered by the model)



2. Information management a necessity for effective disaster risk reduction and management

The India Ocean Tsunami of 2004 and Cyclone Nargis in 2008 and the floods of Pakistan in 2010 showed very well the consequences of inadequacy of effective information and communication capacities in disaster risk reduction and management. On the other hand, disaster preparedness for typhoon in Bangladesh is a good example on how effective communication and early warning together with developed community based capacities can play a major role in reducing the risk and negative impact of disasters. The importance of modern technology in disaster information management has become even more obvious in response to Wenchuan earthquake of 2008 in China.

The first step in any effective disaster risk reduction and management program is access to multi-sectoral pre-disaster information on natural hazards, vulnerabilities, exposure of people and communities to hazards. Such information provide the necessary background and knowledge on type, location and degree of possible losses and damages of disasters and enable the responsible institutions and disaster managers to develop more efficient disaster risk reduction, preparedness and response plans. Accurate communication and information management even contribute importantly to development of recovery plans for anticipated disasters. The outputs of information management for each component of comprehensive disaster management are as follows:

2.1. Disaster prevention and risk reduction

Risk assessment and producing risk maps including data and information on hazards, vulnerabilities, exposure to hazards to be used in disaster resilient urban and rural planning and all disaster prevention and risk reduction measures,

2.2. Disaster preparedness

Disaster monitoring requires a good capacity on access to and analysis of the required data and information on the hazards.

Contingency plans for imminent and recurrent disasters and any institutional and individual preparedness program require accurate, timely and reliable information on the possible hazards as well as vulnerabilities of the target community.

2.3. Disaster response

Early warning is critical to the effectiveness of any disaster response operation. Effective early warning capacity which is built on both modern technology as well as people and communities strong participation is dependent on efficiency and capability to access, analyze and distribute disaster information in a timely and reliable manner. The major elements of early warning systems are:

- a. Background information on the hazard and vulnerabilities
- b. Information acquisition from ground, air and sea and sea-bed equipment and transmission to early warning center

- c. Comprehensive data analysis to create early warning alerts

Early assessment is an important initial step in disaster response planning and implementation. The available experiences from various disaster response operations (e.g. Asian Tsunami of 2004 and Pakistan flood of 2010) show that early assessment on disasters and their damages and losses has a great impact on the quality of disaster response planning and implementation. The capacity for effective early assessment is dependent on the capabilities to access and analyze risk assessment as well as field disaster assessment data and information. Varying from one disaster to another, the information required for early assessment may not be accessible easily and may require strong pre-developed capacities and capabilities.

Operation planning and implementation after the occurrence of disasters is in need of sufficient capacities to collect analyze and utilize data and information on the disaster location and scope, damages and losses, needs and priorities, available local and external resources. Identifying the evacuation points and deployment of rescue and relief teams and dispatching aids to the disaster site will entirely rely on the above-mentioned data and information.

2.4. Disaster recovery

Recovery planning greatly depends on the quality of data and information on the characteristics of individual and social life of people in the disaster affected area which should be considered adequately in the recovery plans.

Linking recovery to disaster prevention, all recovery plans should also aim at strengthening the capacities and building the resilience of affected communities against future disasters, and therefore, data and information on disaster risk including both the hazards and vulnerabilities of the target community are essential.

Based on the above, the effectiveness of disaster risk reduction and management rely on the effectiveness of relevant information management. The key components of effective disaster information management can be summarized as following:

- a. Disaster information strategies
- b. Infrastructures and setups
- c. Access to information sources
- d. Decision making mechanisms

3. Why there is need for a regional mechanism on disaster information management

3.1 Disaster information gaps in the Asia- Pacific region

Information management in disaster risk reduction and response has gained more prominence in the recent years. However, there are several gaps between the requirements of disaster risk reduction and management and the available capacities at national and regional levels.

3.1.1 Disaster information gaps at local and national levels

Almost all countries in Asia and the Pacific have conducted risk mapping and assessment. But many face severe limitations. Most activities take the form simply of hazard mapping and are often too coarse, in terms of spatial and temporal resolution, to provide sufficient information to address complex and dynamic risk patterns. Many countries also lack the appropriate cartographic and attribute data needed for complex modeling; the geographical coverage may be incomplete, at unsuitable scales, outdated, or of dubious quality. Some countries also lack the technical capacity to use remote sensing and GIS tools operationally. Following the Indian Ocean Tsunami in 2004, many countries invested in national or sub-regional early tsunami warning systems. These should be extended to cover all major disasters. The gaps are both technological and institutional. (4)

Apart from challenges to access timely and accurate information before, during and after disasters, other challenge is the capability of countries to use these data and information effectively. Even when the data are available, many countries will find them difficult to analyze. This demands a range of models, tools and methodologies. (5)

The major issues related to capacity gaps are as follows:

(a) **Legal and regulatory constraints**, as disaster management legislation does not exist in every country and emergency communications are not seen as mandatory for many telecom service providers;

(b) **Constraints on technical capacities**, as there exists a limited capacity in the use of communications systems in emergencies; limited knowledge in taking advantage of satellite technologies for emergency use;

(c) **Financial constraints**, as Government budgets are insufficient for building, strengthening and maintaining an emergency communications capacity;

(d) **Institutional constraints**, such as no institutional/organizational set-up for communications during emergencies, insufficient or non-existent coordination among Government agencies and the private sector, an insufficient capacity to deal with different technical options and relevant operators, services providers and equipment vendors, weak negotiating power with satellite operators and equipment vendors, partly due to small markets, and no contingency plan to deal with disaster emergency situations;

(e) **Constraints with cross-boundary movement of communications facilities and telecom services**; no planned management or coordination as well as limited preparedness among international agencies for mobilizing communications resources in emergencies.(6)

In terms of technological capacity and use of modern communications means, most Asia-Pacific countries have developed technical and institutional capacities in earth observation satellite applications – using them for managing natural resources, for environmental monitoring and for disaster management.

⁴ Asian Disaster Report, ESCAP-UNISDR, p 77

⁵ Asian Disaster Report, p 82

⁶ (ESCAP – Committee on Information and Communication Technology, Second Session, Note by Secretariat, Item 38 -CIST)

Some countries have full capacities in operating and applying earth observation satellite for disaster risk reduction and management, though in many developing countries, Pacific Island States and economies in transition have yet to develop this capacity. (7)

Table 3-1 Earth Observation satellite application capacities in the Asia-Pacific region

Source: *The Asia Pacific Disaster Report, 2010, ESCAP-UNISDR*

Country Groups	Operational EO data receiving facilities	Operational MetSAT/ MODIS Receiving facilities	Operating EO satellites	Operating MetSAT/ MODIS satellite	Capacities in applications for DRR/M	Operational service capacities for DRR/M	Capacities in service development for DRR/M
China, India, Japan, Republic of Korea, Russian Federation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indonesia, Malaysia, Thailand, Turkey	Yes	Yes	Yes	No	Yes	Yes	Yes
Australia	Yes	Yes	No	No	Yes	Yes	Yes
Singapore, Viet Nam	Yes	Yes	Developing	No	Yes	Yes	Developing
(Hong Kong, China)	Yes	Yes	No	No	Yes	Yes	Developing
Mongolia	No	Yes	No	No	Yes	Yes	Developing
Bangladesh, Islamic Republic of Iran	Developing	Developing	Developing	No	Yes	Developing	Developing
Philippines, Kazakhstan	No	Yes	No	No	Yes	Developing	Developing
Sri Lanka	No	No	No	No	Yes	Developing	Developing
Fiji, Samoa	No	No	No	No	Developing	Developing	No
Myanmar, Nepal	No	No	No	No	Yes	No	No
Azerbaijan, Kyrgyzstan, Pakistan, Uzbekistan	No	No	No	No	Yes	Developing	No
Other developing countries of the region	No	No	No	No	Developing	No	No

3.1.2 Disaster information gaps at regional level

Some of the root causes of disasters are transnational by nature and can only be addressed in regional settings through regional collaborations, and therefore, the efforts of national governments alone would not be adequate to reduce the risk of disasters. The main disaster information gaps at regional level are as follows:

a. *Disaster risk assessment and mapping,*

Countries of the region have diverse capacities in identifying and assessing disasters risk including the hazards as well as vulnerabilities and exposure to natural hazards. The available capabilities and resources of the countries and institutions of the region including data, information, methodologies, models and tools can be exchanged and shared at regional level in order to improve the quality of disaster risk assessment and mapping in the region.

⁷ Asian Disaster Report, p 81

b. *Hazard monitoring and early warning gaps*

Transnational nature of some hazards requires close and coordinated cooperation among the concerned countries in several areas such as hazard monitoring and early warning. Tsunami, cyclone, drought, sand storm and sometimes flood can be trans-boundary hazards and happen in a wide geographical area and therefore, require cooperation among countries exposed to these hazards. This will enable the countries to have timely and comprehensive data and information to make the right decision and develop appropriate operation plans.

c. *Disaster response and recovery information gaps*

No single country is totally immune against disasters. The capacity and resources of countries of the region are diverse and varying from one area to another. This issue becomes even more important during disaster response and recovery. Human, material and financial resources can be put together in a complementary way at the sub-regional and regional levels and enhance the capacities of disaster affected countries in disaster response and recovery. In both phases of disaster response and recovery, information management capacity is essential in order to implement the plans and programmes effectively. The countries of the region have gained valuable experiences and knowledge from different disaster response and recovery programmes at national level which can be shared with other countries through a regional information management mechanism.

d. *Information and communication technology gaps*

Information and communication tools and means have different functions and services due to their different purpose of production and use. The communications and information tools and means need to be used in specific frameworks and protocols in order to be most useful to disaster risk reduction and management. This is of particular importance with regard to air communication means and tool such as satellites which have their limitations such as the limits in resolutions and coverage of regions and sub-regions. Therefore, there is need for comprehensive and multi-sectoral information and communications tools and protocols to support disaster risk reduction and management capacities and programmes.

e. *Institutional gaps at regional level*

Several initiatives and set-ups in the Asia-Pacific region are developed on disaster risk reduction and management. But these set-ups have been better established and more successful at sub-regional level. While some sub-regions including South-East Asia and South Asia have been more successful in establishing such facilities such as ASEAN Regional Programme on Disaster Management (ARPD) and SAARC Disaster Management Centre (SDMC), same or similar facilities did not develop in other sub-regions such as West Asia and Central Asia. (8) Therefore, there is need for two series of actions:

a. To support development of disaster risk reduction and management including disaster information management capacities in the sub-regions with less collective capacities including West Asia and Central Asia

⁸ Asian Disaster Report, p 103-104

b. To enhance cooperation and exchange of capacities and resources among various sub-regional set-ups and programmes in the Asia-Pacific region.

3.2. Regional cooperation on disaster information management in the Asia-Pacific region

The Indian Ocean Tsunami in 2004 triggered a regional movement on development of the various aspects of disaster risk reduction and management including disaster information and communication. Governments and institutions of the region made more solid commitment to support institutional and technical enhancement of disaster risk reduction and management to prevent losses and damages of future disasters. In particular early warning has gained considerable attention at regional and national levels.

Shortly after the Indian Ocean Tsunami, the World Conference on Disaster Reduction was held in Kobe, Japan which resulted in the adoption of the “Hyogo Framework for Action: Building the Resilience of Nations and Communities to Disasters” by 168 participating countries including countries of the Asia-Pacific. The HFA through three Strategic Goals and five Priorities for Action presents the world most comprehensive framework for disaster risk reduction and management.

HFA Strategic goals

(a) The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction;

(b) The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards;

(c) The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities

HFA Priorities for Action

1. Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
2. Identify, assess and monitor disaster risks and enhance early warning.
3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
4. Reduce the underlying risk factors.
5. Strengthen disaster preparedness for effective response at all levels.

In the scope of regional cooperation, the HFA called upon the regional organizations to undertake the following tasks within their mandates, priorities and resources:

a) Promote regional programmes, including programmes for technical cooperation, capacity development, the development of methodologies and standards for hazard and vulnerability monitoring and assessment, the sharing of information and effective mobilization of resources, in view of supporting national and regional efforts to achieve the objectives of this Framework for Action;

b) Undertake and publish regional and sub-regional baseline assessments of the disaster risk reduction status, according to the needs identified and in line with their mandates;

c) Coordinate and publish periodic reviews on progress in the region and on impediments and support needs, and assist countries, as requested, in the preparation of periodic national summaries of their programmes and progress;

d) Establish or strengthen existing specialized regional collaborative centres, as appropriate, to undertake research, training, education and capacity building in the field of disaster risk reduction;

e) Support the development of regional mechanisms and capacities for early warning to disasters, including for tsunami

After the World Conference in Kobe and adoption of the HFA, many countries of the region initiated or enhanced their actions for in development of disaster risk reduction and management capacities. However, the cooperation among the countries of the region varies from one sub-region to another.

Table 3-2- Regional Inter-Governmental Organizations and mechanisms on disaster risk reduction and management

Sub-region	Regional Organization	Key mechanisms/functions/programs
South-East Asia	ASEAN	<ul style="list-style-type: none"> - ASEAN Committee on Disaster Management - ASEAN Regional Programme on Disaster Management (ARPD) - ASEAN Regional Disaster Emergency Response Simulation Exercise - ASEAN Standard Operating Procedure for Regional Standby Arrangement and Coordination of Joint Disaster Relief and Emergency Operations - ASEAN Regional Disaster Management Framework - ASEAN Agreement on Disaster Management and Emergency Response (AADMER)
South Asia	South-Asian Association for Regional Cooperation (SAARC)	<ul style="list-style-type: none"> - SAARC Meteorological Research Centre - SAARC Coastal Zone Management Centre - SAARC Disaster Management Centre (SDMC) - South Asia Disaster Knowledge Network - Digital Vulnerability Map of South Asia - Regional road maps - Weekly updates on disaster events - Annual South Asia Disaster Report
North and East Asia	The countries of the sub-region made high level progress at national level but the sub-region as a whole has yet to develop even a rudimentary general organization or a specialized body on disaster management	<ul style="list-style-type: none"> - Japan-China-Korea Trilateral Joint Statement on Disaster Management Cooperation in 2009 which identified three broad areas of cooperation: <ol style="list-style-type: none"> 1. Countering the disasters which are expected to increase due to climate change 2. Promoting earthquake-proofing of buildings 3. Utilizing satellite technologies for disaster management
Pacific Island countries	Secretariat of the Pacific Community (SOPAC)	<ul style="list-style-type: none"> - Sub-regional Framework : “An Investment for Sustainable Development in the Pacific Island Countries” - Pacific Disaster Risk Management Partnership Network - Pacific Disaster Net
Central Asia	<ul style="list-style-type: none"> - Commonwealth of Independent States (CIS) - Shanghai Cooperation Organization - Economic Cooperation Organization (ECO) 	<ul style="list-style-type: none"> - Regional Centre for Risk Management of disasters caused by natural hazards (ECO) - Cooperation Agreement for Prevention and Liquidation of Emergencies
West Asia	<ul style="list-style-type: none"> - League of Arab States (LAS) - Gulf Cooperation Council (GCC) 	- Ministerial resolutions
Pan-Asia-Pacific Cooperation	Asian Ministerial Conference on Disaster Risk Reduction	

Table 3-3 Other Regional Organizations

Regional Organization	Key mechanism/ functions/ programmes
The Asian Disaster Preparedness Centre (ADPC)	<ul style="list-style-type: none"> - Development of capacities, systems and processes on disaster risk reduction and mitigation - Training and research on disaster risk management - Risk Assessment methodologies
The Asian Disaster Reduction Center (ADRC)	<ul style="list-style-type: none"> - Sentinel Asia project(Use of data from Earth Observation satellites as the basis for disaster management support system) - Maintaining data and good practices on disaster management, conducting studies on disaster reduction, developing education and training materials, Organizing workshops and conferences - Annual Asian Conference on Disaster Reduction
The International Center for Integrated Mountain Development (ICIMOD)	<ul style="list-style-type: none"> - Studying the dynamics of mountain ecosystems and livelihoods in Hindu Kush-Himalaya in the context of climate change and globalization

Table 3-4 United Nations Organizations and mechanisms on Disaster Risk Reduction and Management in the Asia-Pacific region

Organization	Key functions/ programmes on disaster risk reduction and management
UNISDR	<ul style="list-style-type: none"> - Focal point in the UN system for disaster reduction activities - UNISDR Regional Unit in Bangkok - Three areas of focus: <ol style="list-style-type: none"> a) Promoting the HFA and forging regional partnerships to facilitate its implementation b) Following up and strengthening projects carried out under the United Nations Flash Appeal for the Indian Ocean Tsunami Early Warning System c) Developing an effective regional information management system with comprehensive databases. - UNISDR Asian Partnership on Disaster Reduction (IAP)
ESCAP	<ul style="list-style-type: none"> - ESCAP/WMO Typhoon Committee - ESCAP/WMO Panel on Tropical Cyclones - Tsunami Regional Trust Fund which among other things supporting a Regional Integrated Multi-Hazard Early Warning System (RIMES) in the Indian Ocean and South-East Asia - Asian and Pacific Training Centre for Information and Communication Technology for Development (APCICT) - Asian and Pacific Center for Transfer of Technology (APCTT) - Regional Space Applications Program for Sustainable Development (RESAP) - Statistical Institute for Asia and Pacific (SIAP) - ESCAP Committee on Disaster Risk Reduction - ESCAP Committee on Information and Communication Technology
UNDP	<ul style="list-style-type: none"> - UNDP Regional Centre in Bangkok, focusing mainly on Crisis Prevention and Recovery and supporting UNDP Country Offices
UNOCHA	<ul style="list-style-type: none"> - UNOCHA Regional office in Bangkok, supporting regional organizations, governments, UN agencies, NGOs, and other humanitarian actors in responses to major disasters - Building response capacities by strengthening emergency preparedness

Organization	Key functions/ programmes on disaster risk reduction and management
UNESCO	- Regional Office in Bangkok, working with the UNISDR in promoting school safety and integrating disaster caused by natural hazards concepts in school curricula.
WFP	- Humanitarian Response Depot in Malaysia
UNHCR	- Experiences on relief management ,
World Bank	- Global Facility for Disaster Risk Reduction (GFDRR)
Asian Development Bank	- Disaster and Emergency Assistance Policy - Asia and the Pacific Disaster Response Fund

The above tables show very clearly the significant progress made in terms of national and regional commitment, developing regional and sub-regional set-ups and mechanisms and allocation of resources for disaster risk reduction and management in the region. But it is also clear that there is long way to reach the desirable situation. In particular when it comes to the specialized areas of disaster risk reduction and management such as communication and information management, the need become more clear. Beside the technical gaps, it is obvious that the progress has not be made at the same level in all parts of the region. While some sub-regions such as South-East Asia has made significant progress in sub-regional cooperation, some other sub-regions such as West Asia and Central Asia have not made adequate progress on cooperation on disaster risk reduction and management.

This is why the ESCAP in its various meetings and on different occasions has put a particular emphasis on regional cooperation , especially in the field of disaster information and communication management. The ESCAP Committee on Disaster Risk Reduction in its first meeting in 2009 made a number of important observations and recommendations as following:⁹

“3. The Committee requested that the ESCAP secretariat continue promoting regional cooperative mechanisms and knowledge-sharing arrangements for disaster risk reduction, including on information, communications and space technologies, to improve different aspects of disaster risk management, such as multi-hazard assessment, preparedness, early warning and response to disaster risks.

6. The Committee, while recognizing the many efforts under way in the region aimed at fighting disasters, including earthquakes, floods, droughts, tsunamis, typhoons and tropical cyclones, snowstorms and sandstorms, forest fires and volcanic eruptions, also recognized that a comprehensive regional publication on disaster management was lacking and recommended that a publication focusing on best practices and lessons learned in various aspects of disaster risk reduction and management in the Asia-Pacific region should be issued.

11. Recognizing that information, communications and space technology can play a vital role in disaster risk management, the Committee requested that assistance be provided to members in knowledge-sharing using information, communications and space technology tools—especially in data collection and dissemination, early warning, disaster monitoring and evaluation, and disaster emergency communications—and that regional cooperative mechanisms being

⁹ Report of the ESCAP Committee on Disaster Risk Reduction on its first session, 2009

developed in these areas using advanced information, communications and space technology tools, such as Sentinel Asia, be promoted.

12. Expressing strong support for multi-stakeholder public-private partnerships, the Committee requested that partnerships to assist member countries in the areas of capacity-building, and knowledge and data sharing be promoted and, in that connection, it welcomed the advancement of capabilities offered by experimental and scientific satellites, such as the Wideband Inter Networking engineering test and Demonstration Satellite (WINDS) programme of the Japan Aerospace Exploration Agency (JAXA).

13. Recognizing the importance of the “last mile” issue in many of the early warning systems and welcoming the proposals contained in document E/ESCAP/CDR/4, the Committee requested that the feasibility of organizing workshops on the sharing of best practices and capacity-building at the regional and subregional levels be explored, and it further requested that special attention be given to the needs of communities in remote and border areas, islands and mountainous regions.

14. Noting that climate change and extreme weather events increased the intensity of natural disasters, impeding national development efforts, the Committee called for enhanced regional cooperation to prepare for the natural hazards resulting from climate change and requested that the secretariat facilitate such efforts in the region.

16. Commending the ESCAP secretariat for its efficient and transparent administration of the Multi-Donor Voluntary Trust Fund on Tsunami Early Warning Arrangements in the Indian Ocean and Southeast Asia, the Committee recommended that further work be carried out on resource mobilization.”

Regional cooperation on disaster information management can take place in different forms such as sharing of knowledge, information and good practices, developing common frameworks and understanding, agreeing with common laws, institutions and protocol and by pooling common resources, human, material and financial to address to the regional issues of disaster risk reduction that cannot always be effectively tackled at the national level. Various types and forms of regional cooperation have been developed in different regions of Asia and the Pacific, with varying degrees of success and failures.

4. The proposed Asia-Pacific Regional Center for Development of Disaster Information Management (APDIM)

4.1 Objectives

4.1.1 To reduce human loss and material damages and negative impact of natural hazards through enhancement of disaster information management in Asia and the Pacific region;

4.1.2 To strengthen the capabilities and capacities of the countries and regional organizations in the fields of disaster information management and disaster risk reduction and implementation of the Hyogo Framework for Action;

4.1.3 To contribute to enhancement of regional cooperation and coordination among countries and organizations in the region in the field of disaster information management aiming at socio-economic development of nations and achieving the Millennium Development Goals;

4.2 Scope

4.2.1 The proposed Center will eventually cover all Asia and the Pacific region but will commence its first 5 years activities with a focus on West, South and Central Asia due to the priority of these sub-regions in disaster risk reduction and management cooperation.

4.2.2 The proposed Center will apply a multi-hazard approach in its planning and activities with a focus on floods, typhoon, drought and earthquake as the main hazards of the region;

4.2.3 The proposed Center will include all phases and sectors of disaster management and risk reduction before, during and after the occurrence of disasters;

4.2.4 The focus of the programs and activities of the proposed Center will be on:

a) providing national capacity development and empowerment services to the member States in the area of disaster information and communication

b) providing supplementary information services during major disasters which require regional and international assistance through promotion of complementary cooperation with other relevant organizations and institutions;

4.2.5 The programs and activities of the proposed Center will be planned and implemented in such a way that all countries of the region will be covered by its services by taking into consideration the time difference between various countries in the region and special needs during the major disasters.

4.3 Functions

4.3.1 Providing disaster information management services to the member States and national and regional institutions in the various fields of disaster prevention and risk reduction, preparedness, response and recovery with a focus on disaster monitoring and early warning;

4.3.2 Providing technical and advisory support and services on disaster information policies, strategies and systems to the member States and organizations in the region;

4.3.3 Facilitate access to regional and global disaster information and data sources through creation of appropriate frameworks and mechanisms and development of regional programs such as the establishment of the regional disaster database;

4.3.4 Capacity development and empowerment of developing countries and regional organizations to transform the regional and global disaster data and information to applicable outcomes and products at national and local levels by

strengthening and mobilizing the required resources and benefiting from all available possibilities and initiatives such as public-private partnerships;

4.3.5 To create and promote complementary cooperation among sub-regional disaster management centers and mechanisms in the Asia-Pacific region to exchange disaster data, information, and knowledge by filling the present technical and institutional gaps and by creating appropriate regional cooperation frameworks and protocols such as establishment of regional disaster information management network with a focus on multi-hazard disaster monitoring and early warning;

4.3.6 To develop disaster information management tools and mechanisms such as publications and virtual networks;

4.3.7 To act as a regional platform for disaster information for exchange of expertise, experiences and knowledge and provide technical services and support to the member States and responsible disaster management institutions in the various fields of disaster management and risk reduction by benefiting from other available programs and initiatives such as south-south cooperation, and other regional organizations and ESCAP institutions;

4.3.8 To facilitate or conduct surveys and researches and provide specialized training services in effective use of modern ICST technology to improve disaster information management and to fill the technological and institutional gaps at national and regional levels where and when required;

4.3.9 To facilitate or conduct specialized surveys on the assessment of needs and capacities, challenges and opportunities in the area of disaster information management to support disaster management policy makers and managers at national and regional levels when and where required;

4.3.10 To facilitate or conduct specialized studies and provide scientific and applied services in development of disaster risk reduction measures and programs and implementation of the Hyogo Framework for Action and coping with whether related hazards;

4.3.11 To function as the scientific and operational body of ESCAP for providing disaster information management technical and advisory services requested by the member States and the ESCAP Secretariat and affiliated bodies in the various areas such as development of policies and strategies, preparing strategic plans, establishment of regional mechanisms and tools and cooperation within global disaster information management mechanisms and programs.

4.4 Added values and services

4.4.1 Capacities and capabilities of the countries of the region in accessing the innovative disaster information technology, knowledge and skills will be improved;

4.4.2 The technical gaps in disaster information management in various countries of the region/sub-region will be reduced harnessing the available international regional cooperation mechanisms on sharing satellite data;

4.4.3 The institutional gaps such as the difference in frameworks and functions of various sub-regional mechanisms and setups in disaster information management will be reduced;

4.4.4 The operational gaps in coverage and quality of disaster monitoring and early warning services in particular in major and trans-boundary disasters will be reduced;

4.4.5 The understanding and knowledge of hazards and multi-sectoral vulnerabilities to enhance preventive measures and disaster monitoring and early warning at national and regional levels will be improved;

4.4.6 By establishing the proposed Center in Iran, the development and promotion of disaster management mechanisms and tools under ESCAP among different sub-regions of Asia and Pacific will be balanced;

4.4.7 The relations and coordination between disaster information management mechanisms and frameworks of Asia and Pacific and those related to global systems and setups in particular in the area of disaster monitoring and early warning will be enhanced.

4.4.8 The centre programmatic services will be:

- a. Training and technical support
- b. Research and risk assessment
- c. Communications and publications
- d. Development of and support to regional and sub-regional disaster information networks
- e. Supporting local and national capacity development initiatives and programmes
- f. Providing emergency information management services

4.5 Organization and structure

4.5.1 The proposed center will be established as a subsidiary body of ESCAP and will be governed by the administrative and financial rules and regulations of the United Nations;

4.5.2 The membership to the Center will be identical to the membership of ESCAP including members and associate members;

4.5.3 The Governing Board of the Center composed of 10 member states which will be elected by the ESCAP for 4 years will oversee and direct the policies, strategies, plan and budget and activities of the Center;

4.5.4 To ensure a participatory approach in the activities of the Centre, and to assist the management of the centre, a Technical –Advisory Committee composed of high level experts from various countries of the region will be established. The Committee will meet on regular basis and will provide strategic support to planning and programme implementation of the Centre.

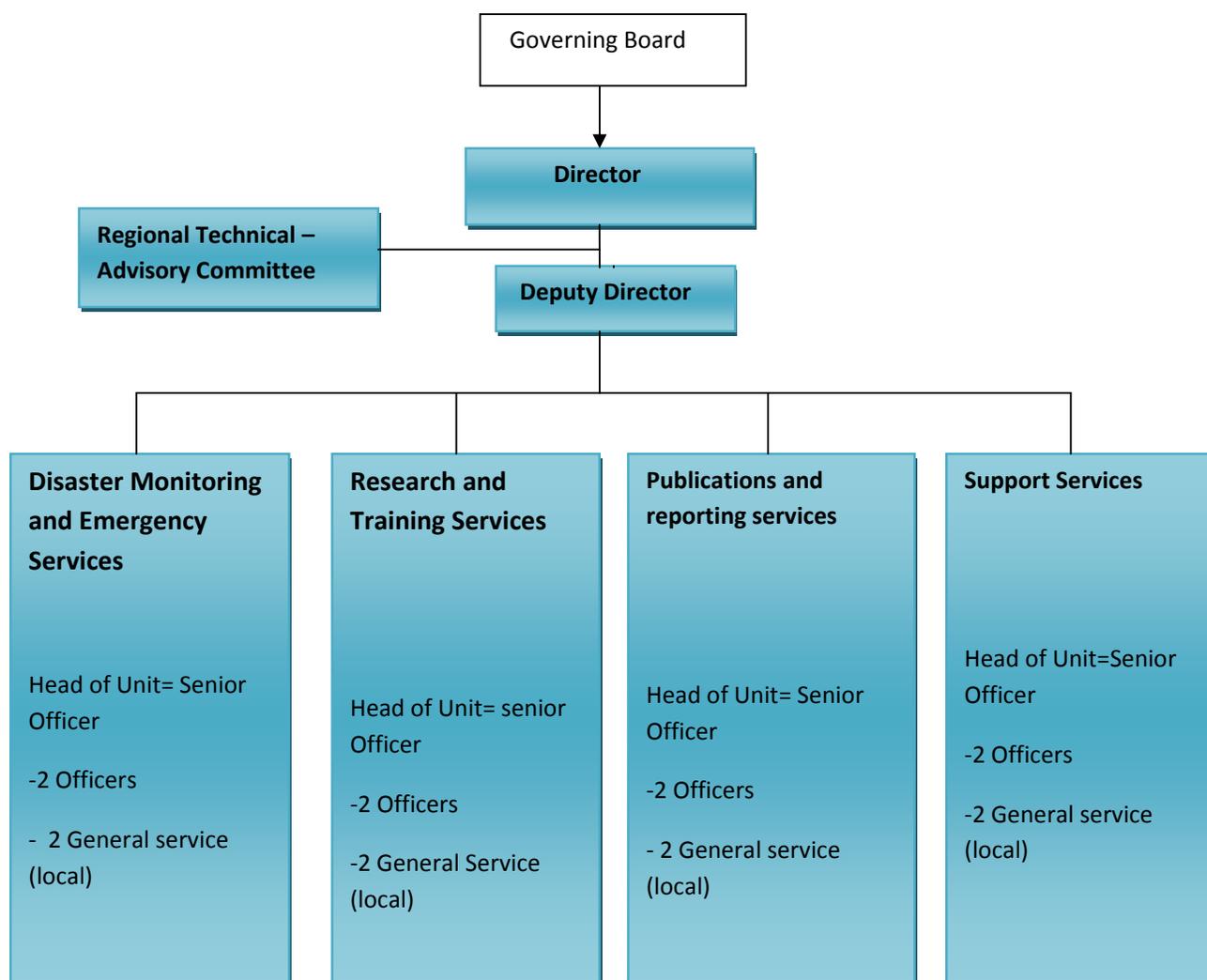
4.5.5 The Centre will maintain a close cooperation and coordination relation with the ESCAP Secretariat and its sub-regional Offices in New Delhi and Almaty to ensure consistency in regional planning and programme implementation and avoid gaps or overlaps.

4.5.6 In terms of human resources, in addition to the permanent staff, the Centre will strategically benefit from the available resources at national and regional levels by developing appropriate mechanisms such as networks of experts, technical forums, short term assignments, etc.

4.5.7 The Government of the Islamic Republic of Iran will take the required legal actions in order to provide the necessary administrative and legal facilities for the Center including conclusion of headquarters agreement

4.5.8 Organizational and structural setup of the Center will be developed under ESCAP rules and regulations and in consultation between host country and ESCAP Secretariat. The overall proposed structure of the APDIM is as follows:

Proposed Structure of APDIM
(Total No of permanent staff: 22)



Network of Governmental and non-governmental institutions, academia, private sector...

Short term programme based assignments, e.g. consultancy, internship, networking

4.6. Financial sustainability and resources

The Center will have an ESCAP extra-budgetary financial basis and will not impose any additional costs on the ESCAP regular budget. The Centre will be established on a solid basis and by taking into consideration realistic estimation of costs and resources.

4.6.1 Estimated costs for establishment and running of the centre

Tables 4-1 to 4-4 show all projected costs and expenditures for the establishment and running of the centre as well as some programmes budget which will be secured from the contribution of the host Government.

Table 4-1 Estimated establishment and 5 year running costs (US\$)

Item	Costs per year	Cost 5 years (2012 -2016)
Establishment of the Center (Consultancies, planning -2011)	100,000	100,000
Rent of building	600,000	3,000,000
General equipment and furniture		500,000
Specialized ICST equipment and facilities		12,000,000
Running costs: -Utilities -IT -Property insurance -Support services - Stationary -Security -Transport - Miscellaneous	300,000	1,500,000
Sub-Total		17,100,000
PSC (13%)		2,223,000
Total		19,323,000

**Table 4-2 Estimated budget for human resources for 5 years- US\$
(According UN scales)**

Position	Annual budget	Total Budget 5 years
Director (1)	1 x 259,800 = 259,800	1,299,000
Deputy Director (1)	1x 226,100 = 226,100	1,130,500
Division Managers (4)	4 x 193,900 = 775,600	3,878,000
Scientific Affairs Officers (8)	8x 158,000 = 1,264,000	6,320,000
General services- (8)	8 x 67,600 = 540,800	2,704,000
Total	3,066,300	15,331,500

4-3 Provisional budget for programmes for 5 years- US\$

Programme	Annual Budget	Budget 5 years
Training and technical support	200,000	1,000,000
Research and assessments	300,000	1,500,000
Communication and publications	300,000	1,500,000
Development of regional and sub-regional networks		1,000,000
Capacity development grant to local and national institutions	500,000	2,000,000
Emergency information management services	500,000	2,000,000
Bilateral and multi-lateral partnerships grants		4,000,000
Sub-Total		13,000,000
PSC (13%)		1,690,000
Total		14,690,000

Table 4-4 Consolidated budget for APDIM for 5 Years- US\$

Item	Total Budget for the First 5 year (2012-2016)
Establishment and running costs	19,323,000
Human Resources	15,331,500
Programmes	14,690,000
Grand Total	49,344,500

4.6.2 Available and projected resources

The Islamic Republic of Iran as the host to the Center will cover costs and expenditures required for the establishment as well as the running costs and some programmes of the Center based on the above-proposed tables for 5 years up to USD 50 million. The resources and budget for the other programmes of the Center will be secured through the following means;

- a. Participation and contributions of the member States;
- b. Partnerships with regional and international organizations;
- c. Financial and technical contributions from regional and international donors.

At the end of the first 5 years period and based on the results of the evaluation of functions and outcomes of the Center, the modalities and means for securing the financial and technical resources of the Center will be determined and agreed on in consultation and agreement with the Secretariat.

The programs and activities of the Center will be planned and implemented based on the needs and priorities of the region as well as the actual and potential resources in different phases.

4.7 Timeframe for the establishment and operation of the Centre

Phase	Action	Timeframe
1	Adoption of the Proposal for the establishment of the Center in the ESCAP 67 th Session	May 2011
2	Negotiation with ESCAP Secretariat to determine the framework and modalities for planning of establishment and preparation of statute and structure of the Center	June-July 2011
3	Legal, administrative and logistical arrangements made in Iran	August-December 2011
4	Negotiation with ESCAP Secretariat to prepare the detailed management, financial and administrative plans and regulation for the center	January- February 2012
5	Assignment of the office space and securing facilities and equipment for the Center	March-July 2012
6	Securing the human resources and permanent staff for the center	June-October 2012
7	Opening of the Center	November 2012

Conclusion

1. Disasters triggered by natural hazards continue to impose heavy loss and damages on countries and communities and threaten the socio-economic development of the countries seriously;
2. The Asia-Pacific region due to its wide geographical area, severity of hazards and high degree of vulnerability is the most disaster affected region in the world;
3. Considerable efforts in the fields of disaster risk reduction and management have been made in the Asia-Pacific region in the recent years which are insufficient taking into consideration the level of vulnerabilities in the region. This fact has been reflected in several ESCAP statements and resolutions;
4. Disaster management includes various aspects and phases before, during and after the occurrence of disasters and requires capacities and capabilities in different areas. Disaster information management in particular with regard to disaster monitoring and early warning is a priority and has particular importance.
5. Various institutions and programmes affiliated to ESCAP and some other regional organizations have initiated effective measures and activities in the field of disaster information management but still a comprehensive regional mechanism in the field of disaster information management is needed in order to fill various technical and institutional gaps of disaster information management;
6. Establishment of the Asia-Pacific Regional Center for Development of Disaster Information Management can contribute to addressing the technical and institutional needs and to capacity development at local, national levels as well as to regional cooperation in the field of disaster risk reduction and management
7. The Islamic Republic of Iran aiming at the enhancement of disaster risk reduction and management in Asia and the Pacific region declares its preparedness to host the center and cover all costs related to its establishment and some programmes for 5 years.
