

## Theme 1 Report

### Global Changes and Risk Management

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#### 1. Introduction

Critical global concerns including climate change, migration and the increase in extreme events have direct or indirect relations with water. The hydrological cycle is the medium through which climate change affects societies, economies and environmental integrity. To address these external “out of the box” drivers of change on water resources and water services integrated approaches for management of land and water are required to ensure equity, efficiency and sustainability in livelihood, food security, energy security.

Under the theme “Global Changes and Risk Management”, the three Topics “Adaptation to Climate Change”, “Migration” and “Disaster Management” are addressed. The relevance of addressing the topics in the 5<sup>th</sup> World Water Forum goes beyond the global water dialogue and have direct connections with the global dialogue under the Climate Change under the UNFCCC and the global dialogue on Disasters Management under the Hyogo Framework.

This document presents a reflection<sup>1</sup> on the Theme by the thematic coordination team consisting of the UNEP, WMO and the Co-operative Programme on Water and Climate (CPWC). An succinct analysis of the key problem statements, issues and general outlook for each of the three topics will frame the questions and provide the larger picture of the overall theme “Global Changes and Risk Management”.

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<sup>1</sup> Note that the present document is not intended to be steering or comprehensive in any way, nor is it seen as a pre-judgment of the sessions taking place under Theme 1.

## 2. Distilled messages / key sound bytes

### 2.1. Climate Change

- Water is the medium through which climate change acts out upon livelihood, economies and environment.
- Climate is one additional pressure upon water management and water services that act in compound with other pressures that increase the demand for water and affect its quality such as population growth, economic development and land use change.
- Areas most vulnerable to the impacts of climate change such as small islands, low lying densely populated coastal areas, areas affected by glacier melt, and arid areas with fragile populations, economies and environments should be identified.
- Strategic Environmental Assessments can help identifying vulnerable “hot spots”.
- The development and supply of tailored and reliable climate information in support of water management and water services is a high priority
- Best practices in water management and water services is a step towards coping with climate change
- Climate change should be mainstreamed in integrated planning processes for water and land such as IWRM, ICZM etc.
- Sector developments in “hot spots” such as low lying vulnerable small islands, mountainous areas vulnerable to glacier melt and snow melt, arid areas vulnerable to drought and vulnerable delta areas should be made “climate proof”
- At the local level adaptation to climate change should be done through low regret measures where possible and adaptation where necessary, and should include portfolio management that is a combination of demand and supply management.
- Several partnerships on adaptation between e.g. utilities, cities, etc. are evolving and being developed. Further development of cooperation between partners will be actively encouraged.

- The need to fill the financial gap and the urgency to simplify and make transparent the complicated financing architecture for adaptation should be urgently addressed in dialogue between the water community and the climate community.
- The results of the WWF-5 on Adaptation to Climate Change should be communicated to the UNFCCC negotiations and the COP-15 process.

## 2.2. Migration

- There is historic and archeological evidence that the human settlement patterns are largely influenced and driven by number of factors including the combination of climatic and environmental desiccation.
- Climate change, land degradation, water shortage, poverty and population pressure are the primary drivers of rural-rural migration. Rural to rural movements are often the first phase of migratory processes. Therefore, a strong focus on this is needed to address the problems at their roots.
- Insecure livelihoods drive millions of vulnerable people to move from their rural habitat to other rural set-ups and as well as to urban settlements. It is evident that most of those on the move from rural areas heading towards urban agglomerations often get concentrated in the slum areas.
- Water stressors can trigger international migration creating both positive solutions for water management but also illegal cross-border movement. However, remittance of the cross border migrants can contribute substantially to the development in their home countries.
- Migration can be a problem even in the source, and can hinder development in many ways including increasing pressure on natural resources in particular on land and water, undermining economic growth, increasing the risk of conflicts both internal and external leading to worse social indicators among the migrants population.
- Rural problems if not tackled could lead to migration and hence, increase major urban problems. Mushrooming slums-among others are the clear sign of our failure to address rural development and sustainability and to regulate rural-urban migration
- Migration, if managed properly (legal, well prepared etc) could be beneficial in both source and target countries (remittances, brain circulation, skills and labor mobility).

### 2.3. Disasters

- Integration of Water-related Disaster Risk Reduction (DRR) into national development plans, recognizing adaptation to increasing risks from climate change is the “highest” priority issue.
- Integrated approaches to disaster management require a science based approach with involvement of all stakeholders and different sections of the society, through a dialogue, the third party being the policy makers. Achieve significant leap in different levels of cooperation among Government, Society and Science in order to better manage water-related disasters.
- Water related disaster risk assessment is essential element of any planning process followed by an integrated approach to manage the risks through prevention, mitigation disaster preparedness and response and recovery and risk transfer mechanisms including insurance.
- IWRM provides a robust policy framework for water-related DRR through strengthen comprehensive structural and non-structural measures.
- Latest technologies provide an opportunity to provide early warnings and other mitigation and preparedness tools to manage various stages of a disaster cycle. They need to be strengthened with human capacities building, particularly in developing countries.
- Promote the wise combination of new technologies and indigenous knowledge to manage different types of climate risks.
- To adapt to the changing climate, it is important to make available the climate information at the local levels where strategies to adaptation to climate change and variability are implemented.
- The science of climate needs to provide better climate information for the various user sectors to be able to incorporate such information in their decision-making process. Global cooperation and collaboration is essential to make available better climate information, early warnings, predictions and long-term projections available for common use.
- Promote adaptation measures to climate change while actively introducing new design concepts/criteria to cope with disasters.
- Maintain key water infrastructures and appropriate living environmental condition during and after disasters and/or conflicts.

### 3. Key problem statements

#### 3.1. Climate Change<sup>2</sup>

##### 3.1.1. Governing Arrangements

**Is water a high enough priority in adaptation policies and plans?** Climate change is felt first through water, because of drought, floods, storms, melting ice and sea-level rise. Thus water is at the center of adaptation.

Water is the primary link between the climate and the human system. Water is therefore at the centre of adaptation. **What does that mean for governance and decision making in adaptation?**

**Is adopting and implementing best practices in water management a step forward in coping with climate change?** For many water systems and water services the expected effects of climate change – even though with a measure of uncertainty - are presently minor relative to other drivers and will continue to be so in the near future. The major challenges associated with meeting demand – in quantity and quality – because of population growth, economic growth and environmental needs are much greater.

##### 3.1.2. Planning for Adaptation

**Are tools and information available to plan effectively for adaptation?** There is no agreement on the methodologies for assessing “hot spots”. Can a universally accepted methodology for “climate vulnerability assessment” make clearer where ‘hot spots’ are found and therefore help to mobilize needed action on adaptation? Lack of adequate information and data, especially at regional to local scales is uniformly cited as a barrier to action on adaptation.

**How to better plan for adaptation?** What needs to be included and integrated across sectors?

##### 3.1.3. Local Actions

**What are the pro’s and con’s of response options (i.e., hard and soft methods and costs) to adapt to global and climate change?** How can or will local climate adaptation be done in practice? The challenge is to develop initiatives at the local level and to share information on these initiatives.

##### 3.1.4. Financing Adaptation

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<sup>2</sup> From HLP note 25Jan2009

**Is there a need for additional finance?** What are the blockages to effective financing for adaptation? What are the response options? How important is it to close the financial gap for adaptation and to tap into additional funding resources outside ODA? And how should this be accomplished?

### **3.2. Water-related Migration, Changing Land Use and Human Settlements**

#### 3.2.1 Rural-Rural Migration

In rural areas, as environments become inhospitable to people, they may be pushed to move elsewhere, to places where their locally specific knowledge may no longer apply. Conflicts over scarce resources (such as water) can also play a role in migration. Displaced people, especially vulnerable groups (such as women or farmers), may not always receive the support they need in places of destination and there is also a potential for conflict in these new locations. For those displaced from one rural location to another where adequate infrastructure is not available and where they are directly dependent on the environment for survival, there can be an over-exploitation of natural resources leading to a lack of potable water, soil degradation, clearing of land, as well as pollution and potential epidemics. It is important to understand the specific context in which rural to rural migration takes place, particularly through an examination of the impacts and consequences for water resources management and changing land use patterns as well as growing and declining human settlements.

#### 3.2.2 Rural- Urban Migration

The world's mega cities, a majority of which are located along coastal areas, will most likely face the largest migration pressures in the future. It is in coastal areas, where 70% of the world's cities with over 5 million inhabitants are located, that is thought to face the largest migration pressures. Mega cities cluster in these waterfront areas, attracting migrants to sprawling slums and simultaneously exacerbating water demands, waste water flows and solid waste dumps and create even more unexpected pressures on existing infrastructure and resources quality and availability. The need is to explore the interaction between water resource demands, developments in rural areas and migration; possibilities to improve the living conditions of migrants in mega-cities; and coping strategies for overloaded infrastructure in urban planning.

#### 3.2.3 Crossing Borders/Seas

For centuries, populations have moved towards water. However, global changes today can provoke mass displacements that have undeniable impacts on the environment and on water resources. There are several different drivers which lead to different types of migration patterns. Many can be

linked to water and its influence on patterns of land use or natural physical processes. It is not known how much these various drivers may or may not result in international migration. Nor is the impact of international migration on state of the environment in areas of origin well known. Furthermore, it is not yet known whether those who migrate first are relatively well off (“those who can migrate, will migrate”) or those who migrate first are those with the greatest direct dependence on environmental quality. It is therefore, highly significant to explore the main drivers which motivate people to migrate across borders and seas. In particular the role of migrants in local development in source countries through remittances as well as the potential of legal instruments which facilitate migration circulation with positive impact on local people in their homelands . Migration processes within a trans-boundary basin management context also needs to be examined.

#### 3.2.4 Need for synergies in policy research and implementation on

There are complex interdependencies among climate change, environmental degradation and migration and a substantial scope and need for synergies in policy and research, interdisciplinary multi-stakeholder collaboration and the development of comprehensive approaches at the country level. The Climate Change, Environment and Migration Alliance (CEEMA) is an emerging multi-stakeholder global partnership bringing together concerned actors such as international organizations, interested groups of states and representatives of the private sector, the scientific and professional community and civil society from a range of perspectives including environment, migration as well as development and humanitarian assistance. The major aim of CEEMA will be to mainstream the environmental and climate change considerations into the migration management policies and practice and to also bring migration issues into the world’s on-going environmental and climate change discourse. This aim will be pursued through a combination of awareness raising, research, policy development and practical action. In the last session, CEEMA will be officially launched and the founding members of the Alliance including International Organization for Migration (IOM), UNITED NATIONS UNIVERSITY (UNU), United Nations Environment Programme (UNEP), and Munich Re Foundation (MRF) will deliver their Mission Statements.

### 3.3. Managing Disasters

Water related disasters impact not only the water sector: irrigation, hydropower, water and sanitation and drinking water provisions but also the food security; the safety of infrastructures such as roads, railways, schools, hospitals and homes; the health; and the ecosystems. The impact of water related disasters is therefore on the overall sustainability of development the human beings have achieved so far. The changes that are taking place both in terms of climate as well as the geopolitical, demographics and socio-economic are bound to accentuate the situation. Climate change and the resulting extreme conditions (e.g., floods and droughts) are the driving force behind the large scale migration of population from the rural areas to large urban centres. These large concentrated habitat and the vulnerability of the displaced people generally aggravate water and sanitation problems, unemployment situation and overall quality of life in the newly sprawling cities. The migrants generally occupy the most vulnerable areas and thereby expose themselves to water related risks.

With over 90% of deaths resulting from natural disasters attributed to water-related disasters, of which floods and droughts being primary killers, and millions of people affected especially among the poorest, water-related disasters are serious impediments to sustainable development and poverty reduction. Huge economic losses can also be ascribed to water-related disasters, including massive impacts to infrastructure, private properties, shelter, health and food production, thereby reducing the human security of the populations affected and threatening the achievement of the international targets such as Millennium Development Goals and Hyogo Framework for Action.

Even under current geographical, meteorological and socio-economic conditions, the level of Water-related Disaster Risk Management is far from sufficient and many vulnerability factors are ever-increasing due to globally-observed changes such as mal-planned urbanization, population growth in slums and marginalized areas. It is now evident that the risks resulting from Climate Change will cause extra burdens such as extreme precipitation and tropical cyclones, more frequent floods and droughts, all of which leads to the fundamental problem of “too little water” and “too much water.”

Shifting from “Reactive” to a “Pro-active” approach to manage water related disasters risk in the changing climate of uncertainties in assessments and predictions of hydro-meteorological extremes is a challenge in itself.



### Human Resources

Integrated human resource mobilization provides the basis for understanding and promoting concerted actions among different stakeholders/parties. This aspect will be discussed in the session 1.3.1 on “Dialogue session” under following key question: “How can we stimulate and facilitate (more) effective co-production between government, science and civic society to better prevent water related disasters, mitigate their effects and / or improve the response”.

### Technologies

There are already available technologies on both soft and hard, and high/advanced to conventional/indigenous perspectives. Integrated technology application provides the practical tools to deal with disaster events in each stage of disaster management cycle. This aspect will be discussed in the session 1.3.2 on “Technologies for water-related disaster management” under the following key questions; “How should we enhance the use of existing and new technologies to manage disasters induced by climate change and population growth?” and “How should we incorporate technologies for minimizing economic and human loss into domestic institution and culture?”.

### Capacities to adapt changing risks

Integrated approach to adapt changing risks is a key to shifting from “Reactive” to a “Pro-active” approach to manage water related disasters risk in the changing climate of uncertainties in assessments and predictions of hydro-meteorological extremes. This will bridge the existing gap between on one side climate change scientists and the water risk managers and on the other side spatial policy, urban (re)development and urban planning. This aspect will be discussed in the session 1.3.3 on “Managing Water Related Risks in Changing Climate” with following key question; “How to make a paradigm shift from reactive to a proactive approach to management of risks through adaptation?”

### Actions/tools in emergency need

Emergency responses often entail strings of frustrations. Coverage and result tend to be limited, untimely and very costly. There is a strong need to bridge the gap from emergency to normalization, by integrating all available actions/tools for adequate water and sanitation to the people who need most. This aspect will be discussed in the session 1.3.4 on “Water Management During and After Disasters /Conflict” with following key question; “How to guarantee adequate services of water

infrastructures and appropriate environmental and living conditions before, during and after disasters and/or armed conflicts?”

#### **4. Key conclusions and recommendations**

##### **4.1. Climate Change**

###### Governing

Water needs to be a priority in policies and planning for adaptation. Issues such as demographic change, economic growth and river basin degradation give rise to greater near-term concern than climate change in water management and services. However, making water a high priority in adaptation will reinforce and strengthen the resilience of water systems and make responses to ‘water crisis’ more effective.

Starting adaptation with water will generate multiple benefits across sectors, increasing resilience across the economy and society. This implies looking outside the water box and across sectoral borders.

The governing arrangements and mandates for coordination of adaptation at both national and international levels and therefore the role played by Water Ministries ought to be shaped based on the central role water plays when it comes to adaptation to climate change.

Many water systems and water services are operating below standard, and ought to strive towards “best practice” in operations and maintenance in combination with demand management. This can be a big step towards adapting to climate change, by making such water systems more adaptive and resilient.

Efforts ought to be made to align policies on water and adaptation in the lead up to CoP15 in Copenhagen. This will make both water and adaptation policies stronger.

### Local Actions

The multi-scale and multi-disciplinary challenges associated with climate change impacts, adaptation, vulnerability and mitigation can only be tackled by broadening the portfolio of response options on a local level, especially if water resource managers and water service managers are to adapt successfully to global and climate induced changes in the water resources.

### Planning

Investing in improving the information available is needed, but so are approaches to planning and decision making that can respond to the need for action without waiting for 'perfect information.' Climate change means we must cope with more uncertainty relating to water than we are used to.

For "hot spots" water development plans whether national, regional or site specific should be made resilient to enable management of the risks of climate change. This implies using structural measures (for example building reservoirs for surface and groundwater, restoring natural functions of river basins, heightened defenses, extra supply capacity) as well as non-structural (pricing, regulations, insurance, spatial planning, communication, capacity building and citizen participation), and making use of the best available climate information. Uncertainty about climate information should not be an excuse for inaction.

### Financing

Given its critical role in development and adaptation, water should be given specific attention in the process of closing the financial gap for adaptation and tapping into additional funding sources outside ODA. Also, international efforts for scaling up financial resources for adaptation must be harmonized under an overarching financial architecture. Similarly, adaptation investments at the national level should be optimized and move from stand-alone projects to sector-wide and programmatic interventions. The concept of "additionality", as "one-size-fits-all" criteria to access funding, needs to be reconsidered and adaptation funds to provide for a greater portion of the adaptation costs (including "no-regret" options).

### Capacity building

In order to adapt to climate change local capacity to do so is prerequisite. Presently the capacity to establish vulnerability to acquire relevant and tailored climate information, to make use of climate information in planning processes and to acquire the financial commitments for adaptation programmes are in an early stage of development. Also capacity building programmes for sector professionals are in early stage.

Strengthening leadership, professional capacity and communication on climate and adaptation is essential equally so in developed countries, countries in transition or developing countries. .

Capacity building and information for sector professionals (in particular LDCs) is essential. Do not wait with adaptation for more accurate data to emerge, because adaptation starts now: act now, and act locally, with the help of community-based, participatory processes, and of traditional knowledge. The real way forward is to educate people to use probabilistic decision making tools and to transfer technology (soft and hard) to low-level water managers and developing countries.

Capacity building is needed in the area of vulnerability and adaptation assessment processes (including economic assessments and access to appropriate models, tools and methodologies), and for linking of these processes with the planning and implementation of concrete action.

### Drought<sup>3</sup>

Dry regions commonly have a long history of coping (though not all) with water scarcity and climatic variability. Traditional water management approaches can therefore be very applicable already, although there is a need to understand the limits of these coping strategies.

Like in all geographic areas, solutions demand integration across sectors, in government and implementation. However, institutional and organisational barriers constrain progress on implementation.

There is a portfolio of technological options that can be applied in arid and semi-arid regions, such as re-use, rainwater harvesting, artificial recharge of groundwater and desalination. Water saving technologies also exist and need to be shared among regions.

## **4.2. Water-related Migration, changing land use and human settlements**

### *4.2.1. Key conclusions*

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<sup>3</sup> From Delft meeting (December 2007).

- Providing alternative livelihood strategies to the people who are prone to the environmental migration as a result of climate change can reduce their vulnerability. These adaptation measures if implemented in coordination with different stakeholders involved will reduce the out-migration from the rural areas.
- Traditional water sharing model should be revisited and the local water governing bodies should be preserved and strengthened through capacity development.
- Spatial planning can be a useful instrument to ensure sustainable rural development as well as introducing innovative solutions in the settlement programs such as insurances and credit schemes can be equally beneficial for the migrating population and the target/source population.
- There are hardly any initiatives/platforms that could raise policy and public awareness to address the challenges and realize the opportunities presented by the climate change, environmental degradation and migration nexus. The lack of information on these issue is a major challenge in developing innovative research approaches.
- There is a substantial scope and need for synergies in policy and research, interdisciplinary multi-stakeholder collaboration and the development of comprehensive approaches at the country level to address challenges and opportunities posed by Climate change and migration.

#### *4.2.2. Recommendations*

- There is a felt need to explore and identify through research the linkages between changing rural livelihood, resource scarcity, and conflict and migration pattern in order to implement effective measures to mitigate the pressure on resources and human security.
- Institutes and organizations involved in addressing Global changes and risk management ought to get involved in providing practical support to the vulnerable communities and states through building their capacity.
- To integrate the research outcomes of the WWF-5 into UNU-EHS and UNW-DPC program for building upon the lesson learnt and carrying them forward as future directions.
- Multi-stakeholder initiatives such as Climate Change, Environmental Change and Migration Alliance (CCEMA) should be used to promote institutional involvement of national and international agents to tackle the challenges of environmentally induced migration in the context of global changes and risk management.

### **4.3. Managing disasters**

#### *4.2.2. Key conclusions*

- The water related extremes are increasing both due to climate change as well as the changing demographics and geopolitical situation.
- These extremes, which have only been handled with a moderate success in the past, particularly in developing countries, are extracting a heavy toll of life and property and threatening the sustainability of development.
- Under the changing climate these extremes are likely to be more frequent and higher in magnitude, thereby pose a great challenge to the human society in terms of looming food crises, pressure on natural resources, loss of livelihoods and in loss of life.
- It is vital that the characteristics of water related extremes, their changing characteristics and their impacts on socio-economic and ecological conditions are fully understood under the changing climate. This requires not only the reliable projections of various climate change scenarios, but also the way these scenarios would impact the hydrological cycle, including the extremes.
- Water related infrastructure, particularly to mitigate the impacts of water related extremes would require to be designed under this changing scenario where the future is not going to be a reflection of the past. It would require pursuing new areas of research.
- Due to a variety of gaps in the present knowledge in climate science, the future development path and behaviour of the society, lack of understanding of the impact mechanisms etc., definitive prediction of various extremes and the options available to mitigate their adverse impacts is limited. Under such uncertain situations, the decision making processes in managing various risks face a new challenge.

#### *4.2.3. Recommendations*

- The Hyogo Framework for Action provides an excellent starting point for dealing with disasters, duly incorporating actions at various stages of risks.
- Floods and drought management still follows the traditional approach in many countries, which largely relies on crisis management. This reactive approach has been ineffective.
- Managing water related risks under uncertain situations and with exacting demands such as food security, human safety and world peace calls for policies that are both robust as well as flexible. Robust so that they are not dealing with only the immediate crises at hand but are addressing the

long-term sustainability in an integrated and holistic manner. The policies need to be flexible enough so that the course of action could be modified based on the new information and knowledge generated by science. These adaptation policies have to provide 'no regret' solutions to the immediate problems. They should form a judicious combination of both the 'hard' as well as 'soft' solutions.

- The Integrated Management approach provides a suitable framework for water related risk management under IWRM. The proactive strategy of disaster risk management through a three pronged attack on reduction of risks by reducing magnitudes, vulnerability and the exposure of the economic activities and applying risk management principles, addressing issues at all the three phases of the risk management cycle: prevention, rescue and rehabilitation.
- Dealing with extreme water related risks requires addressing not only the scientific and engineering aspects but also the social, environmental, economic and legal and institutional aspects. The integrated approaches being multi-sectoral and multi-disciplinary pursuit require various stakeholders and players to play their part under a perceived set of conditions according to their experiences. The social aspects and involvement of all stakeholders – including civil society – from planning to implementation should be an integral part of disaster management.
- Adoption and implementation of such policies require appropriate knowledge base, institutional mechanism, financial resources and most of all close cooperation and collaboration at global, regional and national levels with participation of all stakeholders.
- Monitoring and early warning systems for water related disaster are essential for preparedness and response mechanisms. Recent efforts to improve drought monitoring and early warning have provided new early warning and decision- support tools and methodologies in support of drought preparedness planning and policy development. These tools need to be made available to the developing countries.
- The least developed countries (LDCs) and the Small Island Development States (SIDS) would require the greatest support from international community, not only in terms of financial resources but also in terms of early warnings of all water related hazards.

## 5. OVERALL THEMATIC CONCLUSIONS AND RECOMMENDATIONS

1. Climate change adds an additional risk factor for water resources management and water services provision on top of population growth, economic development, land use intensification and environmental degradation. The additional risk is further compounded by globalization in communication and travel as well as a changing attitude towards risk acceptance.

2. Climate change directly affects the functioning of ecosystems resulting in the degradation of the life supporting ecosystems and services they provide. It is precisely because the services will no longer be there or will have deteriorated that triggers migration to areas where they are still available. Thus, the deterioration or disappearances of ecosystems lead to disasters.
3. In this sense, climate change, migration and disasters all go closely together. The close inter linkages between climate change and variability with migration and disasters calls for coordinated management and response approaches for the three challenges.
4. Policies, institutions and disciplines are divided on climate change, migration and disaster management at the global, regional, national and local level. At the global level climate change is addressed under the UN Climate Convention; at national level it resorts under the Ministry of Environment. At the global level migration is dealt with by UNHCS; at national levels by ministries of Home Affairs. At the global level disasters are dealt with by the Hyogo Framework administered by UNISDR; at national level disasters are dealt with by various ministries including Home Affairs, sometimes sectoral Ministries and at the regional and municipal level. It is recommended that the coordination at global and national level between the three risks is looked into. At the practical level an important step forward would be to agree upon sharing Climate Information between the mandataries in an open manner. Another important step forward would be to share assessment methodologies for vulnerability across the institutional divides. A promising assessment methodology is the Strategic Environment Assessment to assess vulnerability and risk. This policy relevant instrument can be adjusted to make it relevant for climate impact assessments, but also the vulnerability to extreme events and to migration.
5. Presently climate change, migration and disasters each follow their own distinct planning process. For the UN Climate Convention the National Adaptation Plans of Action are recommended. The Hyogo Framework Convention recommends that disaster risk reduction should be factored into policies, planning and programming related to sustainable development, relief rehabilitation, and recovery activities in post-disaster and post-conflict situations in disaster-prone countries. Migration has no one global or national arrangement for planning yet. And IWRM is the widely accepted planning process for Water. The links between the planning processes are weak. Better coordination between the planning processes is very important.
6. The climate related information on early warnings, seasonal to interannual predictions and long-term climate change projections is essential for national development planning and implementation, climate risk management, adaptation and mitigation to achieve long-term sustainable development.