

# “ Climate mainstreaming in water strategies in the Arab Region: Lessons from a capacity development experience”

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Country: Cairo, Egypt

- **Climate Change Impacts in the Arab Region**
- **Climate Change and SDG's – Agenda 2030**
- **Regional and National Initiatives & Success stories cc adaptation**
- **Climate mainstreaming in water policies and strategies**
- **Lessons learned and capacity development needs in the Arab Region**

# Climate Change : is the Biggest threat to Development !!

- Climate Change is a risk multiplier to social and peace instability and conflict. (complexity of converging risks and challenges)
- The Arab Region is the most vulnerable region to climate change where water crisis and food insecurity are escalating, with climate change aggravates the challenges
- Its widespread, unprecedented effects disproportionately burden the poorest and the most vulnerable.



**Climate change impacts on both water resources demand and availability at different spatial and temporal levels**

# Climate Change Risks are on the rise... while international endeavors to combat them are still lagging behind !!!



بمناسبة يوم البيئة العالمي «الأهرام» ترصد:

## مخاطر تغير المناخ تزداد... والجهود الدولية عاجزة!

للمرة: قاعدة بيانات غازات الاحتباس الحراري في مصر

بعثاتنا من الكربون ١٧٧ مليون طن سنويا  
لتكلفة الصحية والبيئية ١٢,٧ مليار دولار

الدكتور مجدي علام المنسق العام لمشروع الإبلاغ الوطني الثالث حول تغير المناخ أن مصر نحو ١٧٧ مليون طن من انبعاثات الكربون المكافئ من مختلف الأنشطة الصناعية، وهي الغازات المسببة للاحتباس الحراري، وأن التكلفة الصحية والاجتماعية لهذه الانبعاثات تبلغ ٧٢ دولارا مقابل الواحد أي ما يقدر بنحو ١٢ مليارا و٧٤٤ مليون دولار سنويا. وبحول اتجاه الحكومة للتوسع استخدام الفحم كمصدر للطاقة أوضح الدكتور مجدي أن الفحم يمكن أن يزيد انبعاثات الكربون إذا لم تبادر الحكومة المصرية بالتقليل من الاعتماد على المازوت الذي تقترب منه من الكربون من خلال...



خبراء البيئة والتنمية:

### متى نرى استراتيجية وطنية لمواجهة الأزمة؟

أزمة مياه خطيرة تهدد دول الشرق الأوسط بحلول عام 2040 بسبب تغير المناخ



### الصيف زاد ٣ أسابيع!

يقول الدكتور ويند عربان الخبير بالمركز العربي لدراسات المناطق الجافة والأراضي القاحلة، أن ظاهرة الزوج من الريف إلى المدينة تتفاقم عاما بعد عام، حتى أن نسبة تقدر بـ ٧٠٪ من السكان في المنطقة العربية أصبحوا يعيشون بالمدن، وقد خسرت مصر نحو نصف مليون فدان في السنوات الماضية عدل يبلغ حوالي ٢٠ الف فدان سنويا بفعل البناء على الأراضي والأثر الاقتصادي لذلك يقدر بخسارة نحو ١٠ ملايين نسمة إلى العشرة الثمات...

### أساسا: ارتفاع مستمر في منسوب سطح البحر

أثبتت الدراسات التي أجرتها وكالة ناسا للفضاء عبر الأقمار الصناعية ارتفاعا فعليا في منسوب سطح البحر يقدر بنحو ٥٧,٤٣ مليمترًا منذ عام ١٩٩٧. وقالت الوكالة إن تغير المناخ كان هو سبب الارتفاع الرئيسي وراء هذه الظاهرة، وأن ارتفاع مستوى البحر جاء نتيجة لعاملين: ذوبان الكتل الجليدية بالقطب الشمالي والمناطق الباردة، وتمدد البحار بسبب ارتفاع درجة حرارة المياه. ويوضح في مستوي سطح البحر منذ عام ١٩٩٥ بمعدل سنوي ١,١٦...

**Science provides enough evidents !!!!**

# Extreme Weather Events in the Arab Countries!!!



**Flooding in Morocco on 2014**



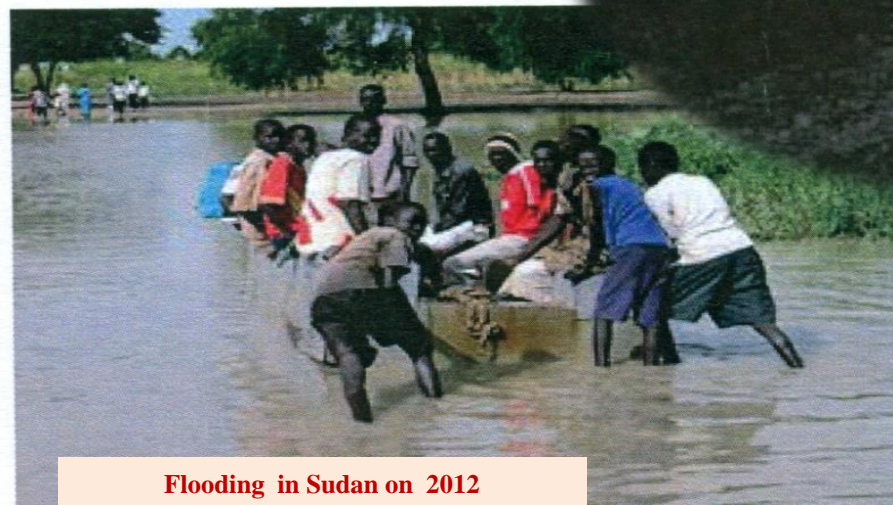
**Flooding in Saudi Arabia, on 2016**



**Flooding in Amman, Jordan on 2011**



**Flooding in United Arab Emirates on 2013**

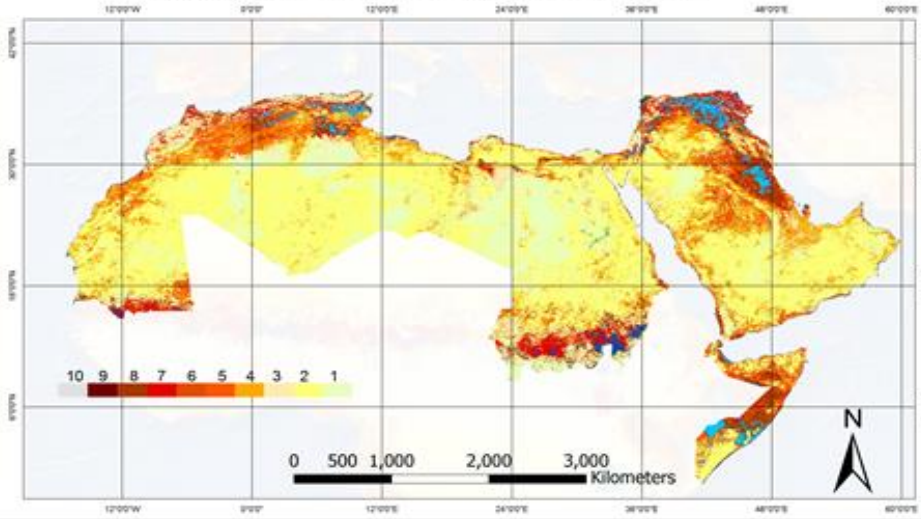


**Flooding in Sudan on 2012**

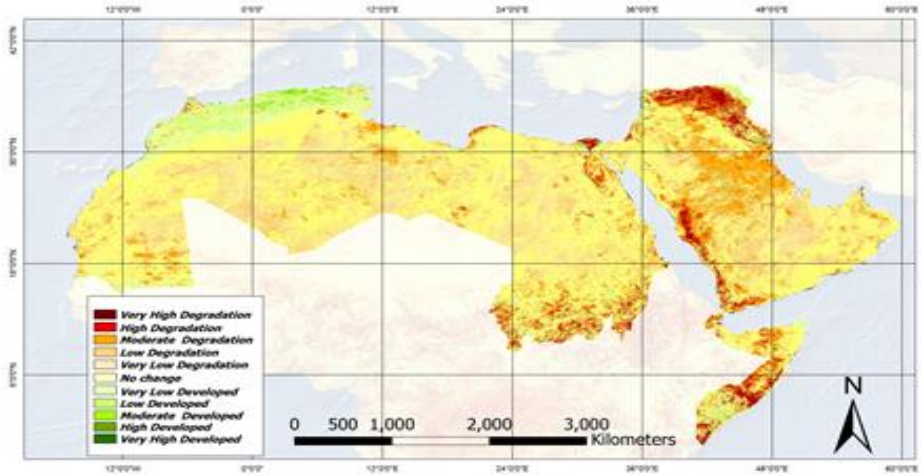


# Productivity Loss 2002-2012 in the Arab Region

**Agriculture Drought Hazard 2000 - 2011**



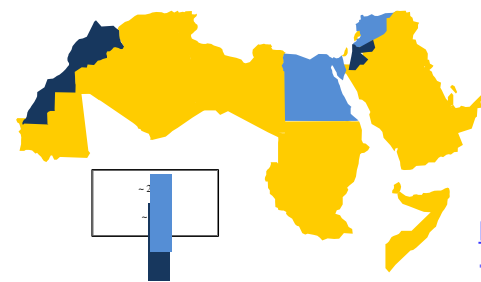
**Monitoring Vegetation Changes 2000 - 2011**



Productivity Loss 2002-2012	Area (million ha)	total Area (%)
Drought	55	12-15
Land Degradation	14	62
Combined	6	27

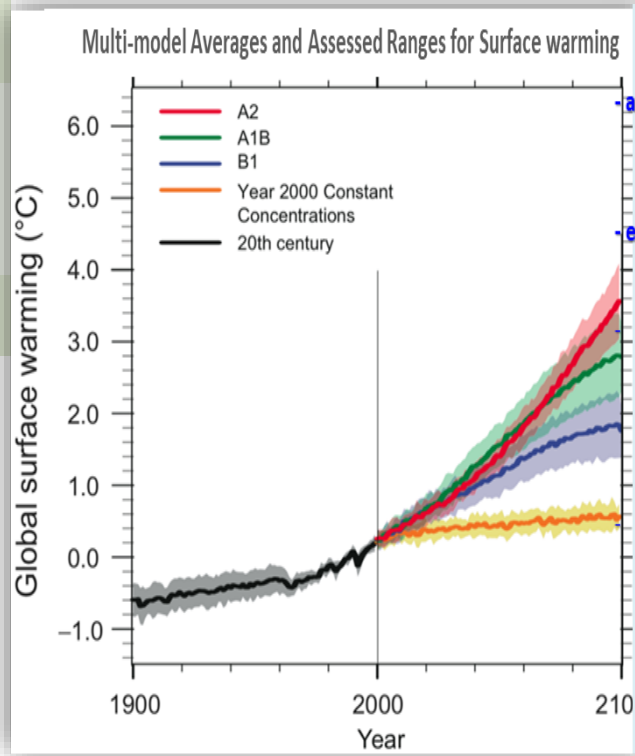
- 2.5 million peoples loss jobs
- 1.1 billion \$ loss in crops productivity
- 52 billion \$ total losses

# Climate Change Impact In the Arab Region (Forecast 2010 – 2050)



**Impact on :**

- water resources (increase in water demand)
- agriculture (decline in land and crop productivity)
- energy use (high consumption)
- man (loss of energy and reduced capability to work)
- Summer Season integrated by 3 weeks, hot waves from 16 to 80 days.



	Syria	Jordan	Morocco	Egypt
Water resources (-%)	20%	50%	50%	10-30%
Water Demands (+)	20-40%	2-3 fold	7-10 fold	15-20%
Agriculture (Water availability) (-)	30%			20-30%
Agriculture Production (-)	Cotton phased out	Replacement of highly labour intensive crops		8-47%
Food Prices (+)				16-68%

**10% -50% Reduction of Water Resources**

**Reduces GDP per year**

- 1-1.5% for developed countries
- 6-9% for developing countries

# Despite the Year 2015 was the Hottest Year!! Geneva, Feb. 2016 It is the year of Global Commitment

## and Responsibility Towards SDG's!!!!

- Sendai frame work (DRR), Japan
- COP 21, Paris
- COP 22, Morocco



**Human Rights to life**

- **SDG's Goal 13 calls for urgent action not only to combat climate change and its impacts, but also to build resilience in responding to climate-related hazards and natural disasters.**



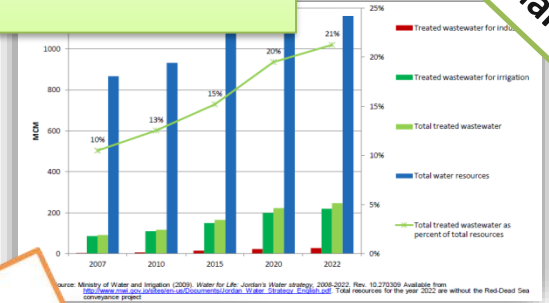
UNDP AND CLIMATE CHANGE  
November, 2016



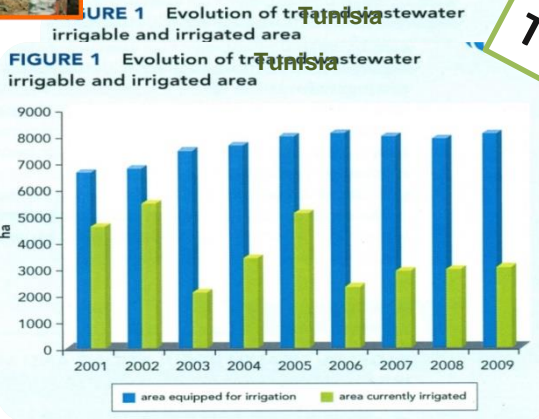
# Adaptation and Mitigation Policies

## Success Stories / Good Practices at national level

Jordan



Egypt



Tunisia

Morocco



Saudi Arabia



United Arab Emirates



MASDAR Green City



Irrigation Improvement

## Renewable Energy – NCWR Use and recycling

## Key Messages

- LAS – “ Regional Arab Water Security Strategy” (2010 – 2030).
- LAS Arab Strategy for Disaster Risk Reduction (2020).
- LAS “Arab Strategic Framework for Sustainable Development” (2015 – 2025).
- Regional Water Scarcity Initiative (FAO -2015)
- UN/ESCWA Regional Initiative (RICCAR) (2007).
- GIZ/ACCWaM Program on “Adaptation to Climate Change in the water Sector” (2013-2017).
- CRN – Regional Initiative for Climate Risk NEXUS Food Security, Water Scarcity and Social Vulnerability in the Arab Region (UNDP, WFP, UNSIDR and AWC) (2016).
- Water Security :Response to local, regional and Global challenges” Strategic Plan IH-VIII (2014-2021)- (Water related Disasters and Hydrological Change”.

- ❑ Mainstreaming of CC Adaptation and Mitigation measures ,
- ❑ Adopting a holistic Nexus approach to achieve the SDG’s,
- ❑ Enhancing use of non-conventional water resources and long - life infrastructure and renewable Energy projects ,
- ❑ Providing information, knowledge, technology and sustainable fund ,
- ❑ Improving Water and Climate Governance (Institutional – Legal issues, bottom-up vision...),
- ❑ **Promoting Training to resilience and adaptive capacity to climate change, (Improving Education, Awareness and stakeholder engagement, climate leadership).**
- ❑ Disseminating Success Stories and Exchanging Good Practices and experiences.

- **How potential impacts of climate change is addressed in National and Regional water strategies????,**
- **How to better address and mainstream climate change adaptation policies into water strategies????**
- **How to enhance the capacities to better address climate change based on lessons learned????**

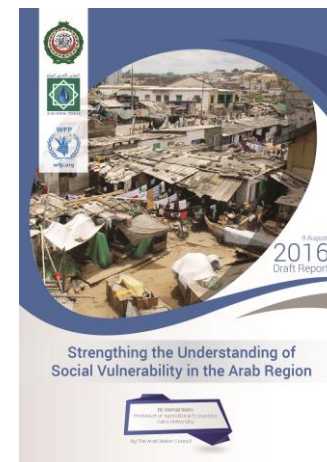
## Gaps:

- Sectoral approach (policies)**
- Effective Dialogues (common understanding)**
- Data / information (analysis)**
- Participation /sharing knowledge**
- Capacities (tools, technology , responses and readiness)**
- Climate Governance (unclear roles and responsibilities, incentives for local communities, regulations, early warning systems)**

# Mainstreaming of Climate Change (Impact and Adaptation) into national water resources management strategies and action plans (Training Manual)

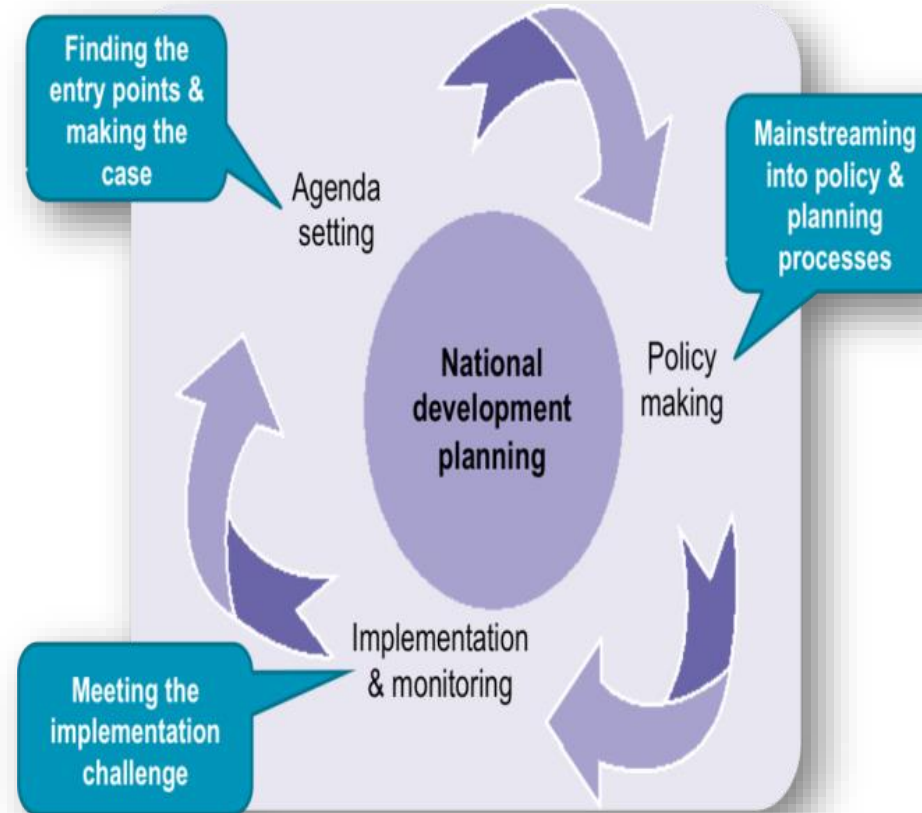


**Regional Training**



# The objectives of the Manual

- How to formulate national water policies, strategies and action plans,,
- How to mainstream climate change into water policies, strategies and action plans,
- A living document that should be updated regularly,
- Case studies/examples from the Arab region,
- Trainer's Manual (TOT).



**Mainstreaming climate change  
in policy development**

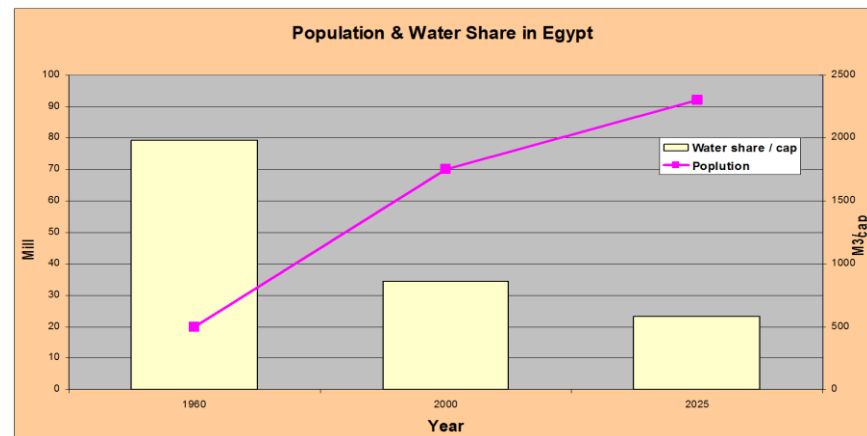
## Target groups

- **Ministers and top decision makers**
- **Water policy and strategy developers – water resources planners**
- **Water management practitioners**



# Training manual contents

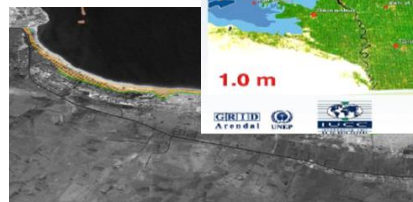
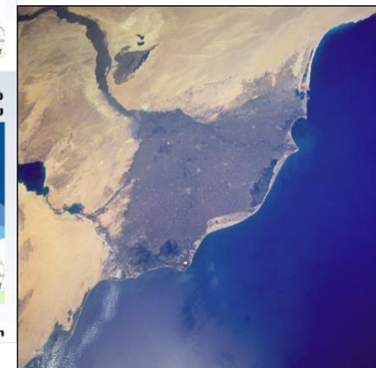
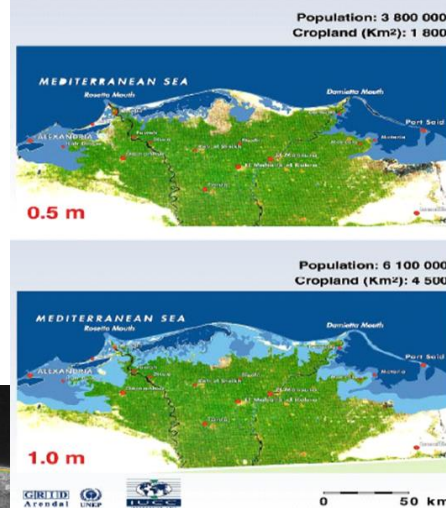
- Water and climate change challenges in the Arab region
- Concepts of IWRM including CC adaptation measures
- Overview of the current (national and regional) water strategies in the Arab region
- Formulation of water strategies
- Formulation of water action plans
- Establishing monitoring and evaluation systems for water strategies and action plans
- Water sector finance



## Case Study in Egypt

### Delta Area

Potential impact of sea level rise: Nile Delta



**Mainstreaming CC in Strategies Planning for Development**

## At local level:

### Develop Capacities and skills to enhance:

- Resilience communities (end-user's, farmer's, Bedwin, fisheries,.....)
- Identify stakeholders and active actors, gender engagement (ownership),
- Raise awareness, enhance Education and dissemination of practices,
- Climate readiness and better response to climate change impacts,
- Enhance traditional knowledge and local bottom-up actions.





## At national level:

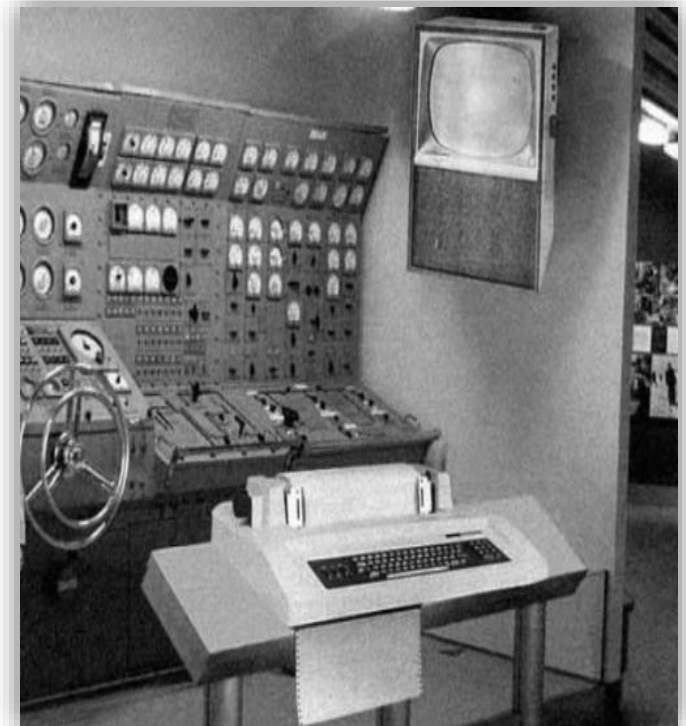
### Develop capacities and skills (water resources planners and practitioners) to:

- developing strategies included climate mainstreaming adaptation policies,
- Mapping / assessment (necessary tools and capacities to use advanced technology (RS, GIS , modeling,...) for better understanding of CC impacts and long-term resilience(risks, and Vulnerable social stresses,...),
- Ensuring availability of data, sharing knowledge and socio – economic indicators,
- Adopting legislation that better address and cope with climate change (improve climate governance) institutional structure, integrated holistic approach, (IWRM- Nexus) and coordination,.....),



## At national level

- **Moving to risk management (early warning systems / more readiness (pro-active) in dealing with climate change impacts.**
- **Innovative means of scaling-up climate finance and better access to international climate fund (GCF) + ICZM,**
- **Monitoring and Evaluation of the implemented policies/ strategies,**
- **Educating and increasing awareness and participation at all level, (local, civil society, Media,.....),**
- **Developing a pipeline of projects to cope with climate change for climate finance.**



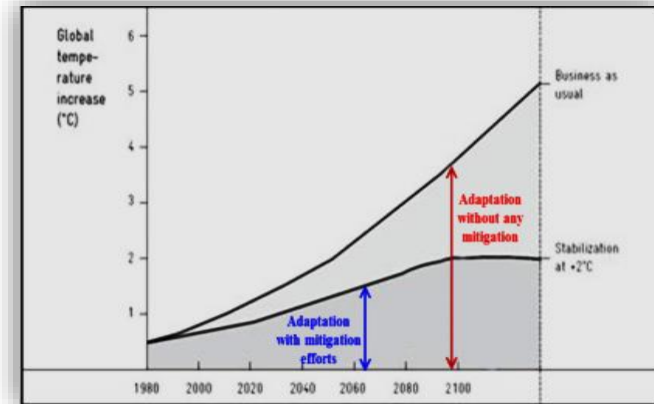
**Early warning & monitoring system**

# Lessons Learned / Priority needs for Capacity Development

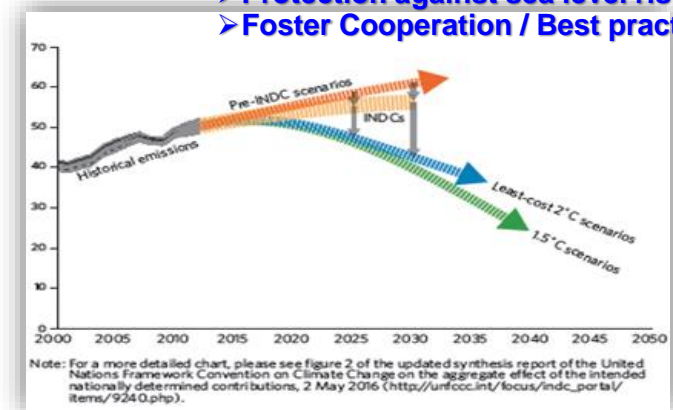
**At regional level:**

**Enhance capacities to:**

- Identify needs of the region and different sub-regions,
- Improve capabilities to use regional tools (downscale models/ early warning systems /....),
- Improve harmonization and standardization of data and indicators (social, economic,.....),
- Exchange of experiences and good practices within the region / outside region,
- Enhance better linkage between regional strategies and national strategies including SDG's
- LAS : to update the AWSS (2010-2030),  
To Scale - up coordination mechanisms,  
To Facilitate activities and knowledge networking on climate change adaptation



- Enhance Water Supplies
- Water Demand Management
- Protection against sea level rise
- Foster Cooperation / Best practices



**Climate change adaptation  
No regrets policies!!!!**

# What is next? The Way Forward

- Document, publish and widely disseminate all the training packages, case studies and success stories,
- Carry out training of trainers (TOT) (Regional & national level,
- Keep improving and enriching the training manuals (as a living documents),
- Establish help desk website, training network and electronic library (Focal Points),
- Establish a common Arab program for monitoring and early warning systems,
- Promote awareness on CC potential impacts,
- Promote sustainable systematic approach models and pro-active reaction to emergencies,
- Enhance innovative means and ways of scaling-up climate finance.
- Enhance cooperation and coordination mechanism (academia,.....).

## Opportunities

- SDG's agenda 2030 targets (Political momentum),
- Availability of international fund,
- Existing regional and national initiatives (good practices),
- Availability of guidelines and training manuals (ESCWA, GIZ, FAO, UNESCO, AWC, WFP, UNEP, WHO, UNDP...),
- Regional Knowledge platform (Hub) (RICCAR, FAO,.....),
- Human resources & infrastructure,
- Interest of partners & donors,
- Existing centers of Excellence, (AWA,.....),
- Political support (LAS-AWMC).

***To ensure water security and  
sustainable future in the Arab  
Region.....***

***Capacity Building on Water Crisis,  
mainstreaming and resilience to climate  
change and Natural Disasters is crucial  
to guarantee success !!!!!***



***Thank You***