National strategy for adaptation to climate change adverse impacts: The case of Cyprus

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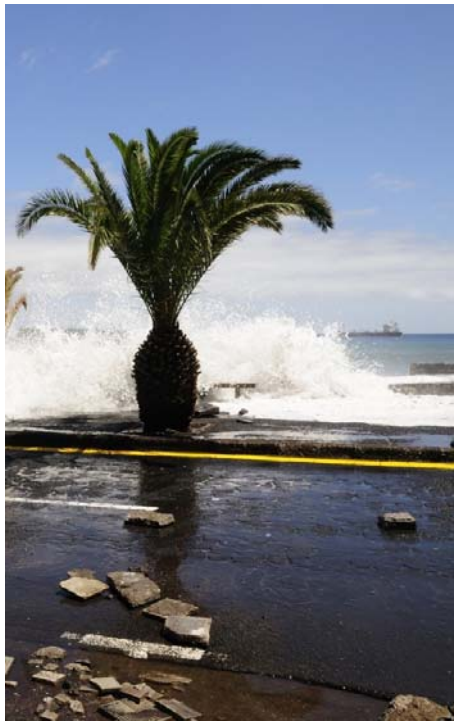


ADAPTtoCLIMATE Conference, March 27 2014

Climate change

- Warming of the climate system is unequivocal
- It is strongly believed that this is attributed to a great extent to anthropogenic greenhouse gas (GHG) emissions from the mid-20th century.
- Global average air and ocean temperatures are increasing, precipitation patterns are shifting, snow and glaciers are melting, global average sea level is rising and extreme weather events, such as floods, droughts and heat waves are becoming more frequent and intense.
- Independently of the future climate change scenarios and of the efforts for mitigating GHG emissions, it is believed that climate will continue changing in the coming decades due to the previous and current GHG emissions.

Why adaptation?

- Climate change impacts are becoming more obvious throughout the globe, with certain areas, natural systems, populations and sectors of economy being more or less vulnerable to these impacts.

- International and European policy on climate change in the past had primarily focused on mitigation and on the reduction of GHG emissions

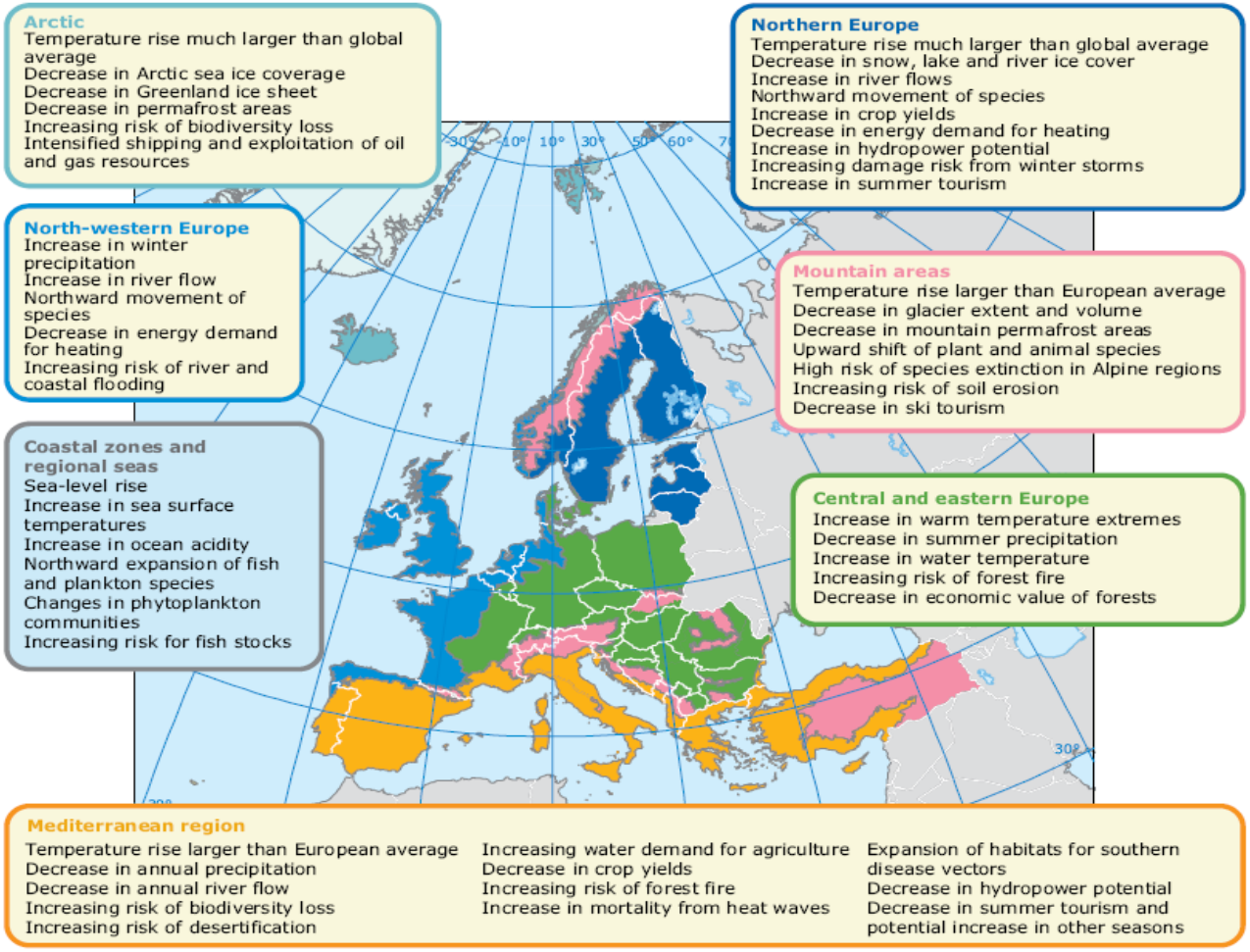
- It is now clear that, apart from mitigation, adaptation to the adverse effects of global warming and climate change is necessary.

Adaptation: definition

Adaptation consists of actions responding to current and future climate change impacts and vulnerabilities. It means not only protecting against adverse impacts and minimizing the damage they can cause, but also building resilience and taking advantage of any opportunities that may arise.

- ☑ *The earlier we plan adaptation responses, the better equipped we will be to cope with challenges.*
- ☑ *It is less expensive to take early, planned adaptation action than to pay the price of not adapting.*

Key observed and projected impacts from climate change for the main regions in Europe (EEA, 2012)



United Nations Framework Convention on Climate Change (1992)

Article 4

1. All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

"*Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing (…) measures to facilitate adequate adaptation to climate change*"

WHITE PAPER (EC, 2009)
Adapting to climate change: Towards a European framework for action

The objective of the EU's Adaptation Framework is to improve the EU's resilience to deal with the impact of climate change. The EU's framework adopts a phased approach. **Phase 1** (2009-2012) lays the ground work for preparing a comprehensive EU adaptation strategy to be implemented during **Phase 2**, commenced in 2013. Phase 1 focuses on four pillars of action:

1) building a solid knowledge base on the impact and consequences of climate change for the EU,

2) integrating adaptation into EU key policy areas;

3) employing a combination of policy instruments (market-based instruments, guidelines, public-private partnerships) to ensure effective delivery of adaptation and

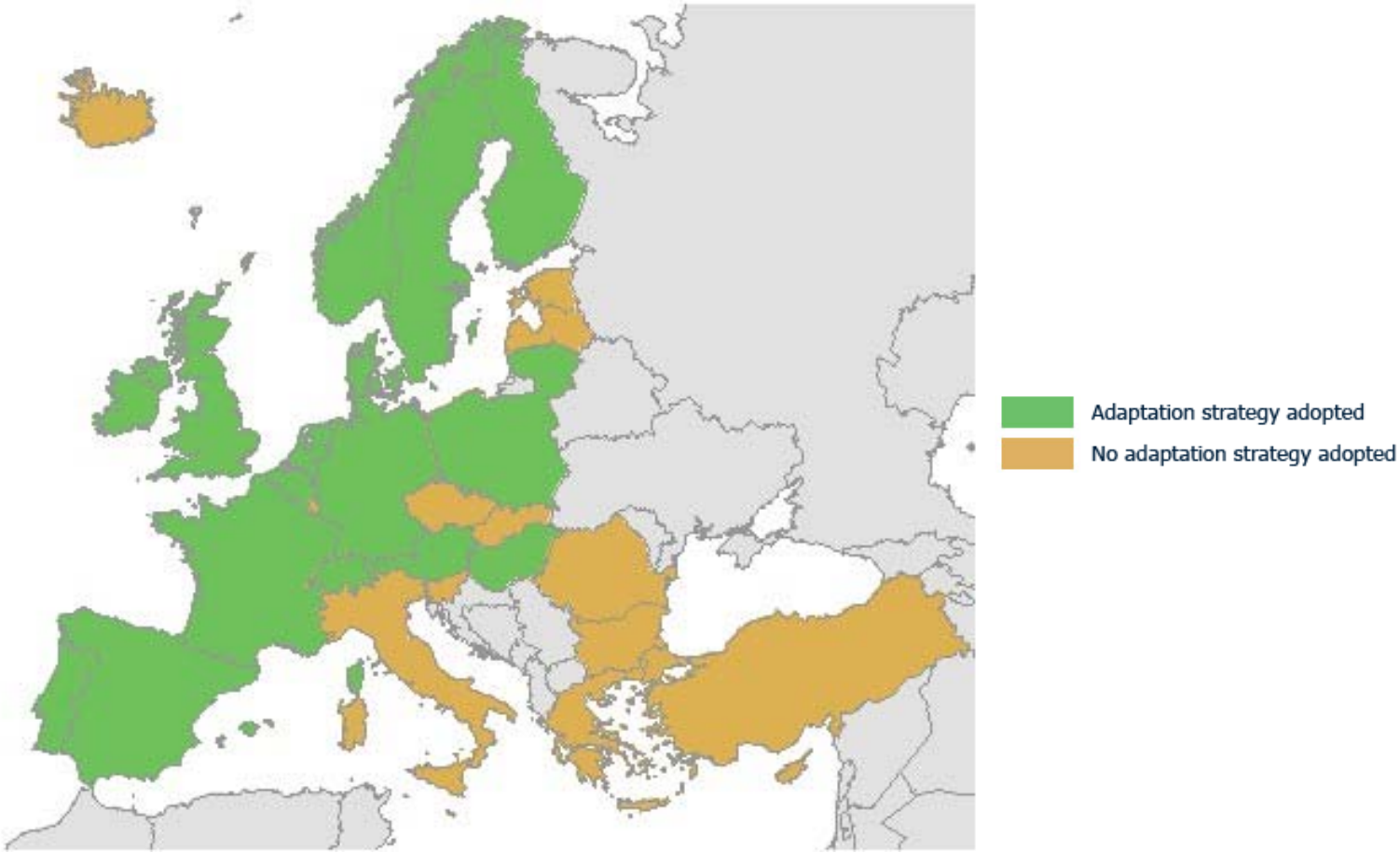
4) stepping up international cooperation on adaptation.

An EU Strategy on adaptation to climate change (EC, 2013)

The overall aim of the EU Adaptation Strategy is to contribute to a more climate-resilient Europe. This means enhancing the preparedness and capacity to respond to the impacts of climate change at local, regional, national and EU levels, developing a coherent approach and improving coordination. The main areas of action recognized are:

- Promoting action by Member States
- Better informed decision-making
- Climate-proofing EU action: promoting adaptation in key vulnerable sectors

Adoption of Adaptation Strategies in the EU countries



Development of a national strategy for adaptation to climate change adverse impacts in Cyprus

LIFE10 ENV/CY/000723

Start date: 01-09-2011

End date: 31-3-2014

Duration: 31 months

Project budget: 1.358.847 € (50% EC funding)

Project website:
http://uest.ntua.gr/cypadapt/

The main aim of the CYPADAPT project is to strengthen and increase Cyprus adaptive capacity to climate change impacts through the development of a National Adaptation Strategy.

Project partners

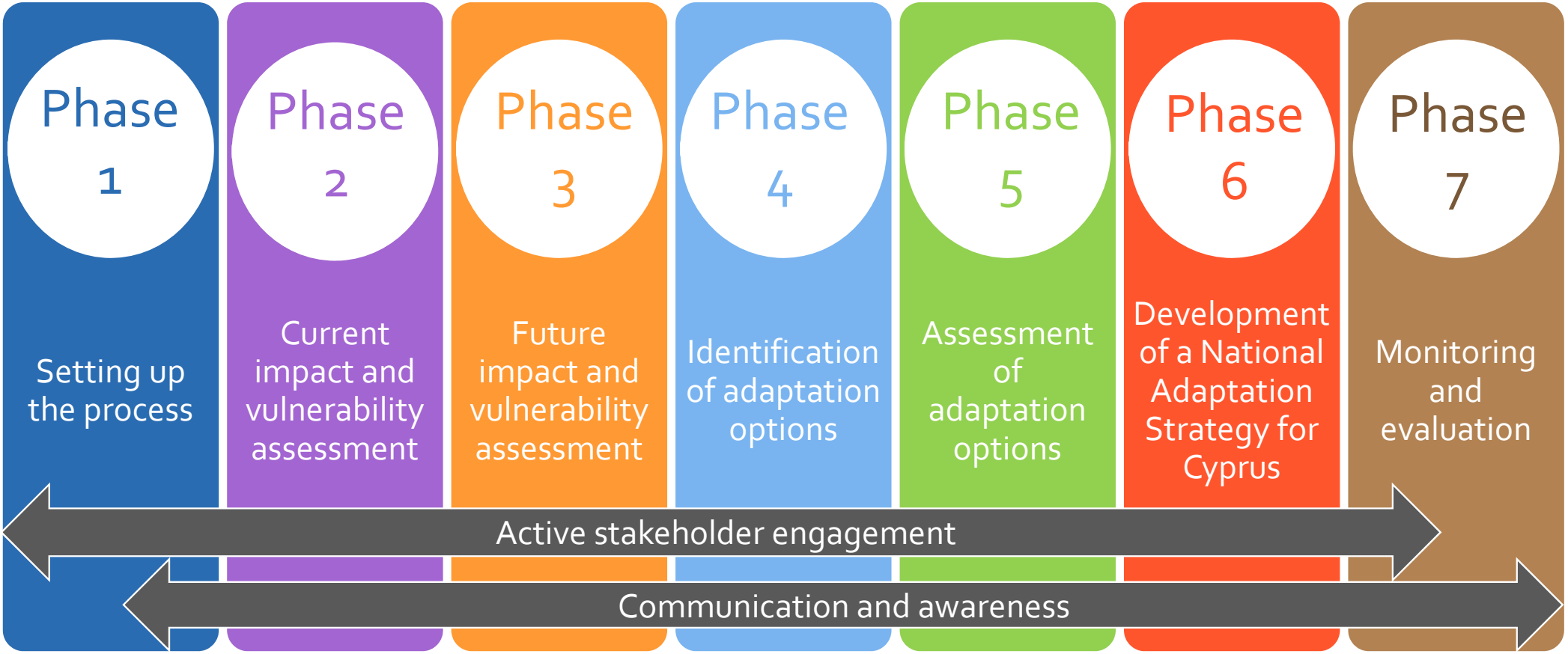
Coordinating beneficiary:

Department of Environment, Ministry of Agriculture, Natural Resources and Environment of Cyprus

Associated beneficiaries:

National Technical University of Athens

National Observatory of Athens


Phase 1
Setting up the process
Phase 2
Current impact and vulnerability assessment
Phase 3
Future impact and vulnerability assessment
Phase 4
Identification of adaptation options
Phase 5
Assessment of adaptation options
Phase 6
Development of a National Adaptation Strategy for Cyprus
Phase 7
Monitoring and evaluation
Active stakeholder engagement
Communication and awareness

Selected policy areas for adaptation
Water resources
Biodiversity
Soil resources
Forests
Coastal areas
Fisheries & aquaculture
Energy
Tourism
Public health
Infrastructure
Agriculture

Phase 1: Setting up the process

- Step 1: Lay down the necessary actions for the development of the National Adaptation Strategy
- Step 2: Communication with relevant authorities for ensuring cooperation for providing the necessary data
- Step 3: Identification of other relative on-going actions and seek networking
- Step 4: A priori identification of potential barriers and development of a plan for overcoming them

Phase 2: Current impact, adaptation and vulnerability assessment

- Step 1: Collection of information regarding the current status of each sector or system for recording the baseline situation
- Step 2: Review of the observed climate changes that took place during the last decades
- Step 3: Identification and assessment of past and current climate change impacts and trends
- Step 4: Identification and assessment of past and on-going actions which contribute to adaptation
- Step 5: Assessment of the overall current vulnerability of Cyprus to climate change

Phase 3: Future impact, adaptation and vulnerability assessment

Re-assessment of the impact, adaptation and vulnerability assessment in view of future changes in climate and other socio-economic factors.

- Step 1: Estimation of the future baseline situation based on socio-economic projections
- Step 2: Projection of future climate changes with the use of regional climate models
- Step 3: Estimation of future climate change impacts based on the climate projections
- Step 4: Identification of planned actions which contribute to adaptation
- Step 5: Assessment of the overall future vulnerability of Cyprus to climate change

Phase 4: Identification of adaptation options

- Step 1: Review of the available adaptation options for addressing the identified vulnerabilities (best practices and guidelines). Development of a relevant database.
- Step 2: Review of the current international and European framework with respect to adaptation (Conventions, legislation, policies, plans, strategies)
- Step 3: Identification of the potential gaps between the measures that are being implemented in Cyprus and the available adaptation options and the framework on adaptation
- Step 4: Selection of the adaptation options that will be evaluated for their inclusion to the National Adaptation Strategy
- Step 5: Analytical description of selected adaptation options

Phase 5: Assessment of the identified adaptation options

- Step 1: Development of a Multi-criteria Analysis tool for the assessment of the identified adaptation options
- Step 2: Evaluation of the adaptation measures in terms of efficiency, environmental friendliness, technical and economic viability, synergies created, social approval etc. with the participation of various stakeholders and experts from all sectors
- Step 3: Prioritization of the adaptation measures and production of alternative adaptation scenarios according to:
  - the degree of vulnerability of the system to climate change
  - the weights assigned to the evaluation criteria
  - the weights assigned to the different stakeholder groups (competent national authorities, relevant national authorities, research institutes, NGOs, sectoral unions and associations and, civil society organizations).
- Step 4: Selection of the adaptation measures with the highest performance for their incorporation to the National Adaptation Plan

Phase 6: Development of a National Adaptation Strategy for Cyprus

- Step 1: Selection of the adaptation measures which were proposed through the MCA evaluation process
- Step 2: Identification of the available instruments and funding mechanisms for the integration and mainstreaming of the adaptation measures into national and sectoral policies (Rural Development Programme, Environmental Impact Assessment etc)
- Step 3: Suggestions for modifying the existing policies, strategies and legislation framework in order to take into account adaptation
- Step 4: Preparation of a draft National Adaptation Strategy
- Step 5: Consultation on the draft National Adaptation Strategy for its final approval

Draft National Adaptation Strategy of Cyprus

- The adaptation measures included in the draft Adaptation Strategy are:
  - actions that are already implemented or planned,
  - actions that are implemented but their efficiency and effectiveness needs to be enhanced and
  - actions that are not implemented but are considered necessary for enabling Cyprus to adapt to climate change.

- Overall, over 200 measures for enabling adaptation to the climate change impacts on the eleven policy areas of Cyprus are included in the NAS.

Consultation and approval of the draft National Adaptation Strategy

- The Adaptation Strategy will go through three different consultation phases until it is finalized and approved.

  1st phase: The 1st consultation phase is internal and includes the presentation of the draft Adaptation Strategy to the sectoral Steering Committees of the project for their comments (*Completed*).

  2nd phase: The 2nd consultation phase refers to the publication of the revised document of the Strategy to the special web platform of the project ***Tell us your opinion*** for public consultation (*In progress*).

  3rd phase: The comments and suggestions received during the 2nd phase will be taken into consideration and form the final document which will be submitted by the Minister of Agriculture, National Resources and Environment for public consultation (*not started yet*).

  The Strategy will then be revised according to the results of the consultation and will be proposed to the Council of the Ministers and to the Parliament for its final approval and endorsement.

Phase 7: Monitoring and evaluation

Climate change is a long-term process while it is yet unclear which will be the impacts of climate change and when they are going to happen. For that reason, it is important that in parallel to the implementation of the Adaptation Strategy, a periodic re-evaluation of the NAS must be carried out.

In particular, the following must be monitored and assessed:

- the degree of vulnerability
- the sufficiency of the proposed adaptation measures
- the progress from the implementation of the NAS

- Step 1: Formulation of a specifically assigned Monitoring Team comprising of a number of concerned institutions and stakeholders
- Step 2: Identification of the appropriate monitoring indicators
- Step 3: Development of the monitoring methodology and plan

Communicate and raise awareness

Sharing information is an essential pre-condition for good adaptation. Information on climate change, impacts and possible adaptation actions should be bundled and refined in user-oriented ways to reach different audiences. A variety of communication and raising awareness activities have been carried out throughout the project implementation, such as:

- Launching Event
- Development of the project interactive website and blog
- Development and distribution of informative material (leaflets, newsletters, posters, notice boards)
- Publications in national and international scientific and technical journals/conferences
- Organization of raising awareness events
- Organization of the international conference
- Publication of the National Adaptation Strategy
- Layman's report (not published yet)

Stakeholder engagement

Active engagement of stakeholders and experts (relative ministerial departments, associations, non-governmental organizations, universities, research institutes, etc.) was recognized from the very beginning of the project as a key element for the successful implementation of the project.

Stakeholders were involved in several phases of the project and in particular during:

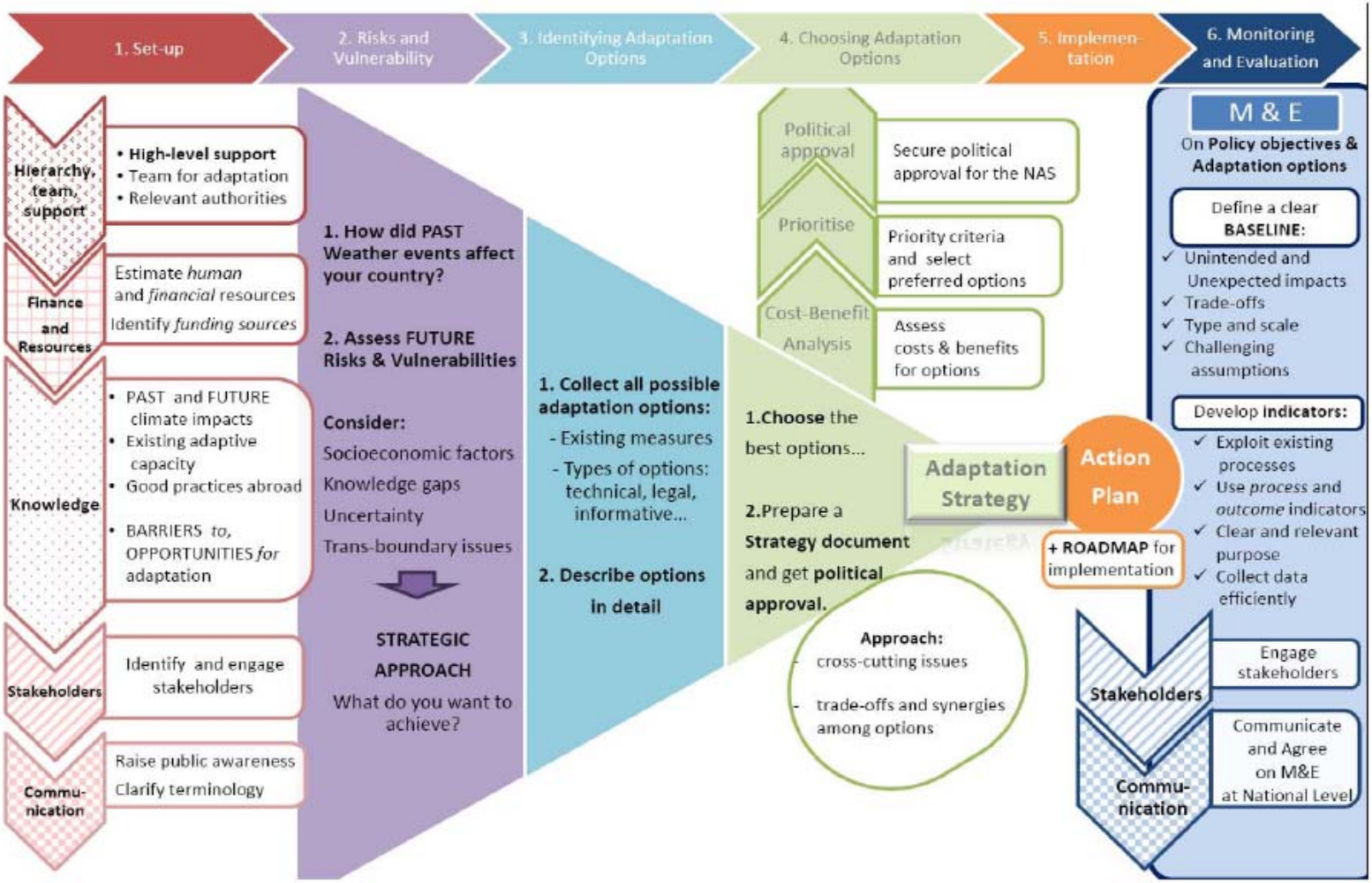
Phase 2&3: Assessment of current and future impact, adaptation and vulnerability assessment

Phase 4&5: Identification and assessment of the adaptation measures

Phase 6: Development of the National Adaptation Strategy of Cyprus.

Steps of the adaptation policy process

(An EU Strategy on adaptation to climate change. EC, 2013)



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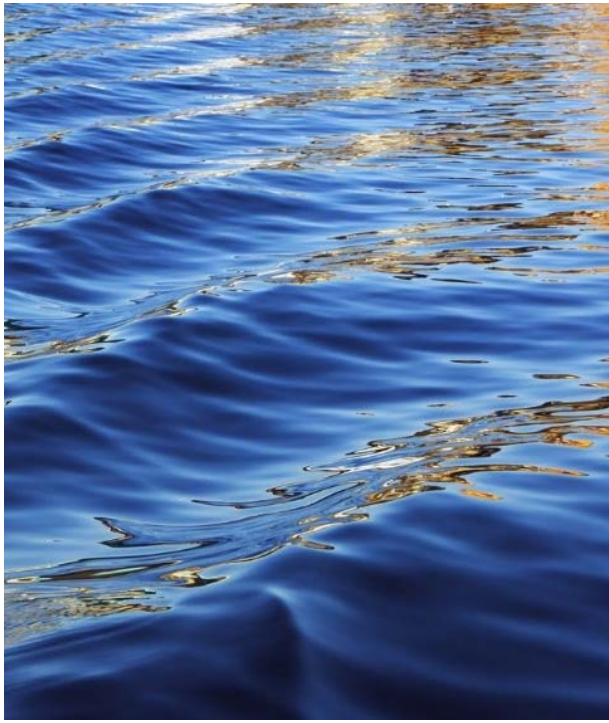
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