

# Policy-making in the face of climate change, water conflicts and human security

## CLICO Policy Brief No. 2

### Climate change, conflicts and human security

Climate change will have a massive impact on environmental and, consequently, social and economic conditions all over the world. Developing countries are likely to be hit the hardest. Thus, climate change raises concerns concerning conflict and human security. The UN defines human security as a situation where the social, political, environmental and economic conditions conducive to a life in freedom and dignity are present.<sup>i</sup> Human security is multi-faceted, including notably freedom from diseases, hunger, unemployment, crime, social conflict, political repression and environmental hazards. Climate change is intimately linked to some of them (e.g. hunger), and less directly related to others (e.g. crime).

The conceptual framework of the CLICO project (Fig. 1) shows how climate change and water availability influence conflicts and human security. Threats to human security affect different groups of people differently. People are vulnerable to a different extent depending on where they live, how they earn their income and –

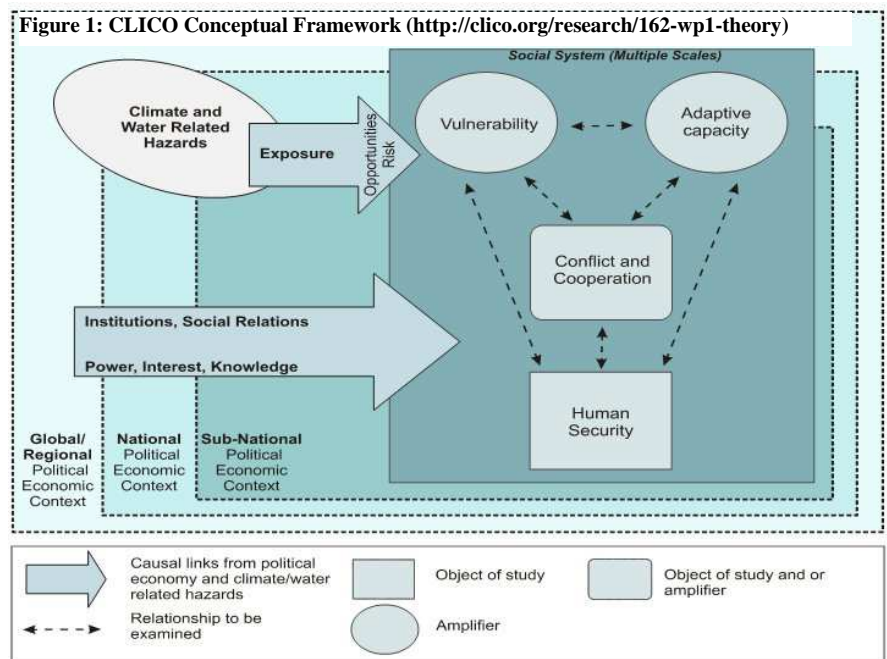
quite significantly – how poor or rich they are.<sup>ii</sup> Vulnerability may change over time, depending on the capacities of people to adapt to changed environmental and social conditions, changes in economic conditions or targeted policy interventions.

Changes in environmental conditions may exacerbate existing conflicts or may even create new ones. Climate change, which in many regions is likely to cause more frequent droughts or floods and lead to sea level rise, may thus lead to disputes over how scarce water resources are used or to conflicts in the wake of

natural disasters.<sup>iii</sup>

At the same time, research suggests that faced with scarcity or a disaster, humans do not always fight, but frequently cooperate.<sup>iv</sup> Whether or not climate change will undermine human security and/or create conflicts, will depend on the political, cultural and socio-economic structures that shape the behaviour of social actors. However, policy responses to address the interface between climate change, water conflicts and human security are only beginning to emerge.

The following sections are based on a review of national (Mediterranean, Middle East and Sahel) and international policies, which are relevant to adaptation and enhancement of human security in the face of hydro-climatic hazards. The review did not consist of exhaustive checking of all relevant policies but followed a case study approach to allow more focused insight into selected interesting efforts. Thus, the conclusions drawn are only an initial insight into the current policy situation, into which more in-depth analysis is needed.



### Emerging policies: UN and EU level

Very few policies currently address explicitly the link between climate change, water, human security and conflict or cooperation. Of the few policies that explicitly address the link, most are located at the international level, such as:

- The Environment and Security Initiative (ENVSEC)<sup>v</sup>, which is a partnership between the Organisation for Security and Co-operation in Europe, the United Nations Development Programme, the United Nations Environment Programme, and the North Atlantic Treaty Association. Its main objective is to contribute to the reduction of environment and security risks and strengthen cooperation on this issue. ENVSEC supports vulnerability assessments, early warning and monitoring of environment and security risks, improving awareness on the interrelation between the environment and security, providing technical expertise and mobilizing financial support for clean-up and remediation activities.
- The Global Environment Facility Focal Area on International Waters supports both adaptation and mitigation measures. One of its main objectives is to “catalyze multi-state cooperation to balance conflicting water uses in transboundary surface and groundwater basins while considering climatic variability and change.”<sup>vi</sup> It thus aims at reducing cross-border tensions over water allocation and quality issues by helping countries to manage transboundary waters together, in the context of climate change.
- The Strategy for Water in the Mediterranean, whereby one of the issues addressed is promoting “collaboration at transboundary and sub-regional level, building upon and contributing to regional integration and cooperation, taking into account economic, social and environmental problems, as a means for avoiding conflict and promoting peaceful co-operation”.<sup>vii</sup> While the future strategy would thus appear to take into account the water – conflict nexus, so far the strategy has not been adopted.

→ The European Security Strategy (ESS) conceptualizes security in broad terms, mentioning both national as well as human security.<sup>viii</sup> The ESS itself does not refer to climate change. However, in the 2008 “Solana Paper”, two high-ranking EU officials argue that: “Climate change is best viewed as a threat multiplier which exacerbates existing trends, tensions and instability. The core challenge is that climate change threatens to overburden states and regions which are already fragile and conflict prone.”<sup>ix</sup>

All in all, human security or conflicts are only in few cases explicitly mentioned in the formulation of concrete water and climate change policy instruments. Even UN and EU institutions that address security issues such as the ENVSEC initiative do not seem to have gone a long way towards integrating climate change specifically.

### Emerging policies: Mediterranean region

The Mediterranean and the Middle East are among the regions in the world most exposed and vulnerable to floods and droughts.<sup>x</sup> Such weather events are likely to increase in number and strength as a result of climate change. So far, hardly any strategy, policy or institution explicitly targets the link between climate change, water conflicts and human security in this region. An exception is the Spanish National Climate Change Adaptation Strategy,<sup>xi</sup> which refers explicitly to human security and states that the evaluation of climate change impacts and vulnerability of different sectors and systems must also consider impacts of climate change on human security, including food security and related components such as poverty or social inequality.

However, awareness of the importance of climate change and the need for adaptation is growing. Adaptation policies and policies in various fields, including agriculture or water, do address risks for human security linked to water and climate change. Some examples are the following:

- An agricultural insurance scheme in Turkey,<sup>xii</sup> which covers risks from floods and flash floods, among other natural disasters.<sup>xiii</sup> A sharp increase in the number of insurance contracts concluded with agricultural

producers indicates that this insurance scheme is an innovative and useful policy tool to enhance human security and well-being of agriculture dependent communities in the face of climate change. However, the scheme does not cover drought: this is problematic as more and heavier droughts are a likely impact of climate change in Turkey.

- Measures to improve water availability, such as in Cyprus (borehole subsidy for saving potable water), in Spain (AGUA programme increasing desalination capacity) and in Israel (large scale desalination).
- Coordination of action against natural disasters in Italy (the country with the highest percentage of GDP expenditure for natural disasters among OECD countries<sup>xiv</sup>) via its National Civil Protection System

(NCPS). The NCPS is not only involved in disaster relief, but also in disaster prevention and forecasting. As part of an early warning system, the NCPS has been monitoring conditions in municipalities where landslides and floods are likely to occur. In addition, public outreach activities such as exhibitions and entertainment activities for kids were carried out to educate the public on how to behave when landslides and floods occur. These activities have increased awareness on such risks and stimulated local authorities to realize how they can better prepare.

There are also some policies in place that are explicitly aimed at conflict prevention, with the formation of water user associations in Egypt being one good example. However, these policies do not relate to climate change.

#### **Water User Associations minimising local water conflicts: an example from Egypt**

In Egypt, water has historically been a contested scarce resource. As a result of climate change impacts, it is expected that water will become even scarcer and its use more contentious.<sup>xv</sup> Past conflicts, which mostly occurred when farmers at the head of irrigation canals extracted water at the expense of farmers at the end of the canal, resulted in the exchange of harsh words, fist fights, and even murder in some cases.<sup>xvi</sup> In 1995, Water Users Associations (WUAs) were created as part of the Irrigation Improvement Programme (IIP). WUAs are voluntary organizations, made up of representatives of a district, selected by all community members. In a WUA, a group of farmers jointly allocates, distributes, and manages their common source of water. The IIP has reduced the number of disputes and conflicts over water and the WUAs have become a prominent factor in saving water.

#### **Policy-making under uncertainty: The example of transboundary treaties**

Forming policies to prevent conflict and risks to human security is difficult because the pace and impacts of climate change remain uncertain and can only be described in broad terms. Human interactions with their natural environment and among each other are even harder to predict than changes in natural conditions. How is one to prepare for risks, the shape and size of which cannot be completely specified yet?

One option is to integrate uncertainty into policies from the outset. Such mechanisms can be found, for example, in many trans-boundary water agreements which regulate the amount of water allocated to riparian states from a certain water body.<sup>xvii</sup> Several treaties include mechanisms which provide for uncertainty in future water availability such as stipulations for varying water

allocations in accordance with water availability in a given year, clauses regulating compensation for a party if one party is unexpectedly adversely affected by undesirable developments under the control of other parties to the agreement, legal means of dispute resolution or open ended rules that allow adaptation over time through pre-defined mechanisms. As climate change alters the patterns of water availability, such mechanisms can be instrumental to prevent disputes over proper water allocation from turning into more severe conflicts.

The CLICO project has produced a toolkit for policymakers and those involved in transboundary water negotiations and planning, which provides a typology of different types of water-sharing agreements. The toolkit gives examples of each type of agreement and offers observations about the conditions under which each type is most likely to be effective.

## More information and contacts



This policy brief was produced by Ecologic Institute ([www.ecologic.eu](http://www.ecologic.eu)) as part of the research project on “Climate change, hydro-conflicts and human security” (CLICO). CLICO is carried out by 14 research institutes from Europe and the Middle East. It examines the relationships between hydro-climatic hazards, human security and conflict. CLICO publishes regular policy briefs. CLICO is funded under the 7<sup>th</sup> Research Framework Programme of the European Union (FP7). More information on CLICO and research results can be obtained at [www.clico.org](http://www.clico.org) or by contacting the CLICO project coordinator Dr. Giorgos Kallis (University of Barcelona), [giorgoskallis@gmail.com](mailto:giorgoskallis@gmail.com).

## Credits

This policy brief was written by Christiane Gerstetter (Ecologic Institute). It builds on research conducted by Giacomo d’Alisa (Universitat Autònoma de Barcelona), Itay Fischhendler (Hebrew University Jerusalem), Marisa Goulden (University of East Anglia), Katriona McGlade (Ecologic Institute), Mohamed Tawfic (Suez Canal University), Krista Timeus (Ecologic Institute) and Ethemcan Turhan (Universitat Autònoma de Barcelona), all participants in the CLICO research project. The views expressed are the author’s and do not necessarily reflect the view of CLICO partners or the European Commission.

## Endnotes

<sup>i</sup> UNDP 1994. New dimensions of human security- Human Development Report, New York.

<sup>ii</sup> Barnett, J. 2001. The Meaning of Environmental Security: Ecological Politics and Policy in the New Security Era. London and New York: Zed Books, p.17ff

<sup>iii</sup> See for example German Advisory Council on Global Change 2007. Climate Change as a Security Risk, London: Earth Scan, [http://www.wbgu.de/fileadmin/templates/dateien/veroeffentlichungen/hauptgutachten/jg2007/wbgu\\_jg2007\\_engl.pdf](http://www.wbgu.de/fileadmin/templates/dateien/veroeffentlichungen/hauptgutachten/jg2007/wbgu_jg2007_engl.pdf)

<sup>iv</sup> Wolf, Aaron T. (2007) Shared Waters: Conflict and Cooperation. Annual Review of Environmental Resources 2007 (32): 241-269

<sup>v</sup> [www.envsec.org](http://www.envsec.org)

<sup>vi</sup> GEF (2011b) Results and Learning, SCCF. Available at: [http://www.thegef.org/gef/SCCF\\_Results](http://www.thegef.org/gef/SCCF_Results) (accessed 10 February 2011)

<sup>vii</sup> Union for the Mediterranean (2010). “Strategy for Water in the Mediterranean, Annex 1. of the Declaration of the IV Euro-Mediterranean Ministerial Conference on Water,” Barcelona.

<sup>viii</sup> *A Secure Europe in a Better World. European Security Strategy*. 12 December 2003.

<http://www.consilium.europa.eu/uedocs/cmsUpload/78367.pdf> (last accessed: 22 October 2010).

<sup>ix</sup> *Climate Change and International Security. Paper from the High Representative and the European Commission to the European Council (S113/08)*, 14 March 2008. [http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/reports/99387.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/reports/99387.pdf).

<sup>x</sup> Kallis, G. 2008. ‘Droughts’ Annual Review of Environment and Resources 33, pp. 85-118

<sup>xi</sup> Ministry of Environment and Rural and Marine Affairs (2006a). National Climate Change Adaptation Plan,

[http://marm.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/090471228000709c\\_tcm7-12445.pdf](http://marm.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/090471228000709c_tcm7-12445.pdf) [accessed on April 14, 2011]

<sup>xii</sup> Agricultural Insurance Law No. 5363

<sup>xiii</sup> Altınözlü, M. H./İçer, N. (2010). Meteorolojik Kaynaklı Riskler ve Tarım Sigortası (Meteorological Risks and Agricultural Insurance). Paper presented in Uluslararası Katılımlı 1. Meteoroloji Sempozyumu. Ankara: Turkish State Meteorological Service.

<sup>xiv</sup> OECD 2010. OECD Review of risk management policies: Italy 2010 - Review of the Italian national civil protection system Paris, <http://browse.oecdbookshop.org/oecd/pdfs/browseit/0310021E.PDF>

<sup>xv</sup> Most studies project a decline in Nile water availability of up to 70% in the future, see El Quosy, D. (2008). Integrated water management and farmers’ participation in Egypt. IGBP Regional Workshop, MENA, Cairo.

<sup>xvi</sup> Water Conflicts and Conflict Management Mechanisms in the Middle East and North Africa Region, Centre for the Environment Development for the Arab Region and Europe, 2006, p. 25, <http://water.cedare.int/cedare.int/files15%5CFile2862.pdf>

<sup>xvii</sup> See for the following Drieschova, A./Fischhendler, I. (2010). A Toolkit of Mechanisms to Reduce Uncertainty in International Water Treaties, Hebrew University: Jerusalem. One example for such a treaty is the Convention on the Protection of the Rhine, <http://www.iksr.org/index.php?id=33&L=3>