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National adaptation is also a global concern

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TRANSBOUNDARY IMPACTS AND THE NEED FOR A GLOBAL ADAPTATION GOAL FRAMEWORK

Although national to subnational levels have a key role to play in adaptation, the international community dealing with climate has also a role to play, beyond raising awareness and providing funds. A central argument is that there is risk that countries will not be able to adapt to the current climate change trajectory, and so that non-adaptation will have impacts beyond national boundaries. This paper thus claims that national adaptation is also a global concern. It then argues for the development of a post-2015 Global Adaptation Goal framework allowing monitoring progress and better sharing experiences and, more importantly, building both a collective understanding of what adaptation means and shared tools to capture adaptation efforts and limitations on the field.

KEY MESSAGES TO THE POST-2015 CLIMATE NEGOTIATION PROCESS

To design a Global Adaptation Goal framework supposes to address at least four challenges, which in turn highlight key areas of progress for the post-2015 climate negotiation process. (i) The challenge now is more about gathering existing adaptation assessment tools in a coherent framework rather than about inventing new metrics. Henceforth there is a need to *develop a refined synthesis of the existing frameworks to assess adaptation efforts* qualitatively and quantitatively, at the country level. (ii) Which mechanisms to be used to allow monitoring progress? National Determined Contributions (NDCs) could be useful vehicles, so there is a need *to strengthen the NDCs framework on Adaptation* (structure, content, multi-year work plan) to ensure the learning process and lay the foundations for the action/goal adequacy assessment at the global scale. (iii) We need a global institution to take the lead. And given its experience in climate change affairs, it is important *to reaffirm the key role UNFCCC could play in tracking adaptation and induced transboundary risks at the global scale*. (iv) Tracking adaptation and transboundary effects of non-adaptation is an extremely sensitive issue that will raise various political barriers. Accordingly, there is a need *to anticipate political barriers by developing a constructive argumentation* on the usefulness of a global Adaptation tracking process, and more broadly of a Global Adaptation Goal.

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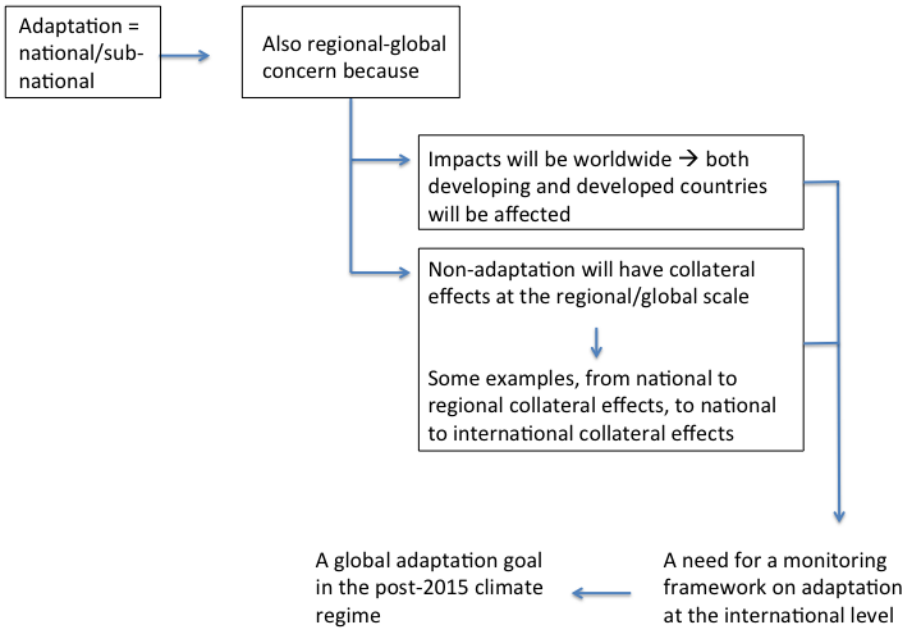
INTRODUCTION

IPCC Fifth Assessment Report (AR5) comprises three chapters on adaptation, all within Working Group II (Klein *et al.*, 2014; Mimura *et al.*, 2014; Noble *et al.*, 2014) and synthesising more than 1,300 scientific papers. Two main common conclusions on the geographical scale issue come up from these chapters. First, there is a growing number of adaptation responses emerging in both developed and developing countries, making it not only a problem of/challenge for "the South". Second, adaptation is essentially a matter of national to subnational scales. For example, Mimura *et al.* (2014) write: '*the national level plays a key role in adaptation planning and implementation, while adaptation responses have diverse processes and outcomes at the subnational and local levels (high agreement, robust evidence). (…) National governments assume a coordinating role of adaptation actions in subnational and local levels of government, including the provision of information and policy frameworks, creating legal frameworks, actions to protect vulnerable groups, and in some cases, providing financial support to other levels of government*'. Also, Noble *et al.* (2014) write: '*Among the many actors and roles associated with successful adaptation, the evidence increasingly suggests two to be critical to progress; namely those associated with local government and those with the private sector*'.

It is definitely true that the national to subnational levels have a key role to play in adaptation, essentially because implementing adaptation will primarily have benefits at these scales (e.g. reducing the induced effects of climate change impacts, enhancing local/national societies' adaptive capacity, preserving key ecosystems, diversifying economic means, etc.—Klein *et al.*, 2014) and because key development choices are generally decided at those levels (i.e. the sovereignty issue). However, nothing substantial is claimed about the role for the international community, this latter being usually limited to raising awareness on the importance of launching adaptation processes (Mimura *et al.*, 2014) and providing developing countries with funding. As a result, the general understanding is that the implementation of adaptation only concerns national to local stakeholders, and therefore that stakeholders outside of the national boundaries are not directly concerned, neither in the design nor in their implementation of the options.

What this paper argues (Figure 1) is that such a view is too restrictive, as it does not take into account the benefits from domestic adaptation—and also the risks from non-adaptation—beyond national boundaries. The regional to global dimension of adaptation thus remains disregarded, while at least two arguments strongly support a better consideration of the transboundary effects of national policies: impacts of climate change will affect all the countries around the world, making adaptation *per se* a worldwide concern; and there is a risk that countries will not be able to adapt, which will have negative collateral effects at the regional to global scales. Section 1 of this paper deals with the first argument, when section 2 deals with the second one. Section 3 explores the consequences for the international community on climate change of considering adaptation also as a global concern. It notably argues for the development of a post-2015 Global Adaptation Goal framework, raising four key recommendations to be addressed to the negotiation process.

Figure 1. The rationale of the paper



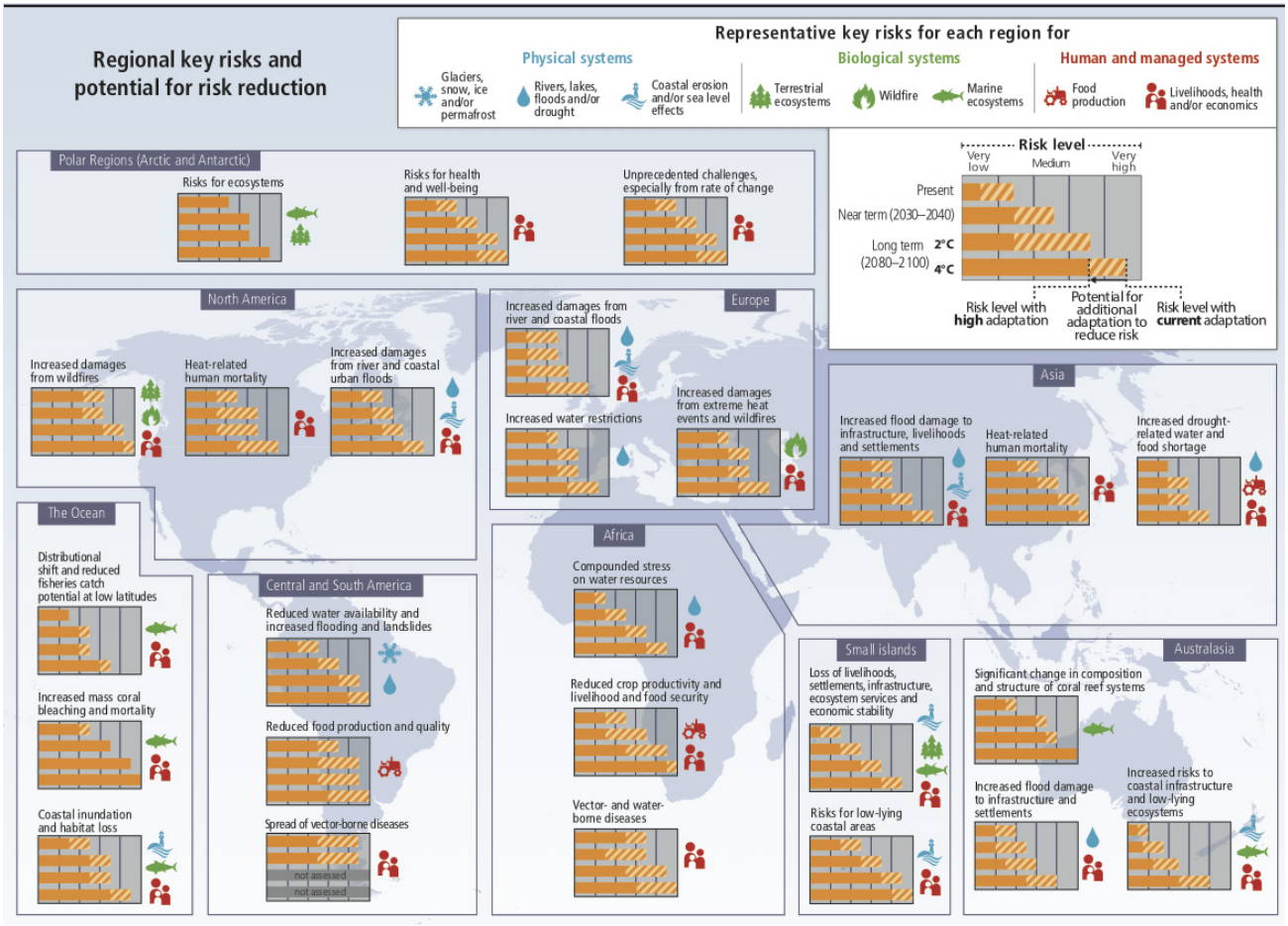
1. IMPACTS WILL BE WORLDWIDE AND FOR SOME OF THEM GLOBAL

As shown in IPCC AR5, all countries around the world will be affected by the impacts of climate change, i.e. both extreme events and gradual changes (IPCC, 2014). Climate change already started to have impacts at the global scale, and all the regions will remain at risk of being impacted over the century, depending upon mitigation and adaptation efforts (Figure 2).

Of course some countries are at the frontline and will be affected first (e.g. small islands, Arctic and desert margins), but when looking over the century, no country is in a safe position (Murray *et al.*, 2012). Considering ocean issues for example (Howes *et al.*, 2015; Weatherdon *et al.*, 2015), impacts of ocean acidification and warming are already detectable on several organisms in low latitudes (e.g. warm-water corals), mid latitudes (e.g., seagrass, bivalves) and high latitudes (e.g., krill, pteropods). Such impacts have started and will continue to have consequences on various ecosystem services such as, e.g., recreational services for coral reefs (Burke *et al.*, 2011), bivalves fisheries and aquaculture at mid latitudes (e.g., in the USA—Cooley *et al.*, *forthcoming*), and fin fisheries at mid and high latitudes (Weatherdon *et al.*, 2015). These examples show that the cascading effects of climate-related changes must be thought not only at a country scale, but also more and more at the global scale. Coming back on the ocean example, acidification and warming, and thus also sea level rise, will generate complex chain of impacts: due to ocean's role in regulating climate change (i.e., atmospheric CO_2 and heat capturing), changes started to occur in the physics and the chemistry of the ocean (decrease in pH, increase in sea surface temperature, de-oxygenation, etc.). These changes in the basic parameters of the ocean (see left hand side of Figure 3) started to induce major consequences on organisms and ecosystems in terms of abundance, phenology, geographical distribution, invasive species, prey-predator relations, and species extinction (see central part of Figure 3). As in a domino game, key human sectors are now at risk (especially fisheries, aquaculture, coastal risk management, health, coastal tourism), which will induce huge problems at the national level, but not only (see right hand side of Figure 3). Changes in fish catch potential in a given area will indeed question international fishery agreements between the Parties concerned (e.g. in the western and eastern part of the Pacific, in North Atlantic, in polar seas), which will have in turn consequences on the industry (profitability, jobs, etc.), markets and prices in several countries, and then on international competitiveness. The more the current panorama of international agreements will be challenged, the more climate change will question food security, human security, geopolitics and development at the global scale (WEF, 2015).

This first argument ("impacts will be worldwide and for some of them global") highlights that

Figure 2. Representative key risks for each region, including the potential for risk reduction through adaptation and mitigation, as well as limits to adaptation



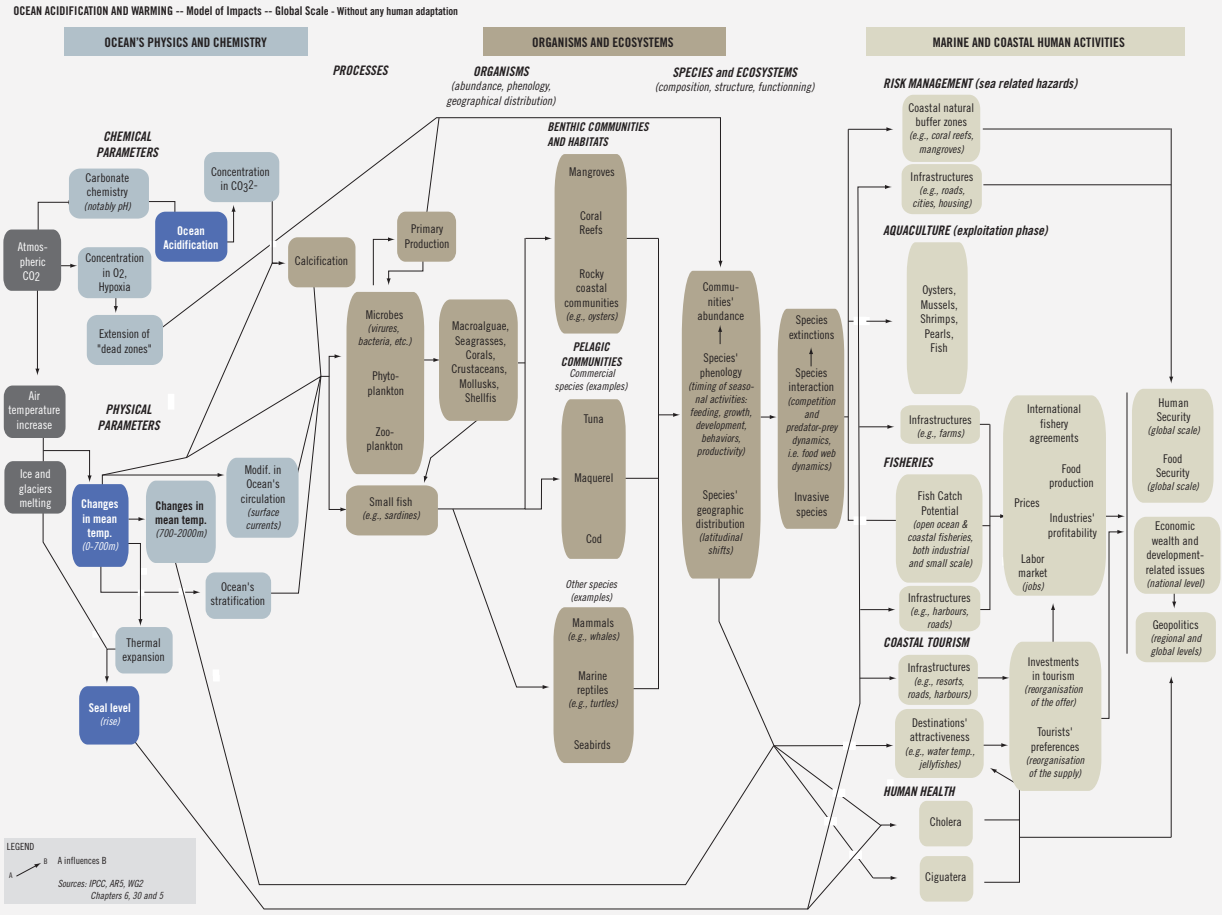
Source: IPCC (2014, figure SPM.8).

coping with climate change impacts, i.e. adapting, is a worldwide concern: each country will be affected, and so each of them have to design and implement adaptation to reduce its own future vulnerability and secure its own development pathway. It also suggests that some impacts will be transboundary, so that bilateral to multilateral cooperation will be needed. This advocates for the international community to support efforts in terms of experience sharing, capacity building, bilateral to multilateral investments, etc. This is already what the Cancun Adaptation Framework suggests. We however argue here this is not sufficient because it limits cooperation on adaptation only to countries that have common direct and revealed interests. Yet, the chain of impacts approach shows there will be a lot of partly unpredictable ramified consequences, what the international community has to acknowledge. This latter thus has to move forward: first, because there is a need to anticipate future impacts before they occur (i.e., also address the non-revealed impacts); second, because there is a need now to also consider indirect impacts (i.e., cascading effects), which supposes to enhance a global sense of responsibility not only on Mitigation, but also on Adaptation. A final complementary reason emerges from the chain of impacts approach: in case a country fails in adapting, this will have consequences beyond its national boundaries. This point is developed in the following section.

2. NON-ADAPTATION WILL HAVE TRANSBOUNDARY NEGATIVE EFFECTS

The problem of international coordination for climate change has been often characterized as the necessity to coordinate collective Mitigation action in order to prevent climate change impacts that will affect countries only on an individual basis, leading to low incentives for countries to participate in collective action. Reframing the nature of this coordination game formulation is

Figure 3. The chain of impacts of ocean acidification, ocean warming and sea level rise on key coastal and marine human sectors



Sources: Pörtner *et al.* (2014); Hoegh-Guldberg *et al.* (2014).

therefore particularly important. Putting Adaptation efforts also as a coordination issue into the picture can reopen the range of both forms of and reasons for international cooperation. In such a perspective, it is particularly important to understand the reasons why coordinated Adaptation action is also necessary, as impacts of non-adaptation would not be restricted to one country.

The argument in the first section is therefore incomplete as it insidiously supposes that each country will effectively adapt and limit the consequences of climate change impacts to its national boundaries. Starting from here, three problems arise. First, as reminded above, impacts of climate change will not only be local and/or limited to national boundaries. Some issues will necessarily have to be dealt regionally, e.g. in the case of water resources from the Senegal or the Nile Rivers. Second, there is a risk that adaptation initiatives in one place will have adverse effects either in the same place or in neighbouring or interconnected ones. So enhancing adaptation here can lead to increasing vulnerability there (Barnett and O'Neill, 2010; Magnan, 2014; Noble *et al.*, 2014). Third, we have to acknowledge that given the current limited knowledge on how to make adaptation happen on the ground (Mimura *et al.*, 2014) also due to the existence of climate uncertainty that can bring "surprises" (e.g., unexpected feedbacks effects, tipping points, etc.—Alley *et al.*, 2003; Schneider, 2003), there is a risk that all countries will not succeed in becoming adapted in the coming decades.

When put together, these three problems lay the foundations for the second argument in favour of considering adaptation also as a global concern: there is a risk that non-adaptation at the national to subnational scales have negative effects at the regional to global scales. In such a case, adaptation in specific places moves from a sovereign issue to a collective problem. Here below, three contrasted examples are used to illustrate various geographic levels of such collateral effects: on one neighbouring country (example 1), and on several countries at the regional scale (example 2) and at the international scale (example 3). These examples help coming up with a more generic perspective.

Example 1 – The migration side of small islands adaptation

Figure 4 illustrates an archetypal chain of impacts of climate change and ocean acidification on a small island, more specifically an atoll. Global environmental changes combined with local anthropogenic pressures affect natural resources (e.g., ground- and rainwater, soils, sand and coral material, mangroves, coral reefs), economy (e.g., fishing, agriculture and tourism) and living conditions (e.g., health, building and infrastructures) (Nurse *et al.*, 2014; Duvat *et al.*, 2015). In an adaptation perspective, the island (i.e., its institutions, individuals, etc.) can go for four main complementary areas of options to address both future one-set events and/or gradual changes: restoring/preserving key ecosystems (especially in an atoll: coral reefs, beaches and mangroves); restoring/strengthening the economic means and developing new activities (ideally less climate-sensitive); developing coastal protections in the most strategic areas for the island development and organising coastal retreat in others; and displacing people at risk, either internally if some safer areas exist on the island, or internationally. The migration option supposes that island's adaptation can partly rely on displacing pressures onto another territory, which induces collateral effects to the destination. This latter is thus definitely, although indirectly, concerned with how the migrants' place of origin will deal with the impacts of climate and ocean changes. From an anticipative perspective and considering its own interest, a first relevant option for the potential destination country could be to help people from the island of origin to not migrate, i.e. through bilateral cooperation. Given the pressure of potential climate change-induced migration throughout the world, one can easily transpose the reflection from bilateral cooperation to address a small island's adaptation challenge, to international and global cooperation to address vulnerable countries' adaptation challenge. Here, indirect collateral effects exist that cannot be ignored and that suppose an anticipative cross-scales approach.

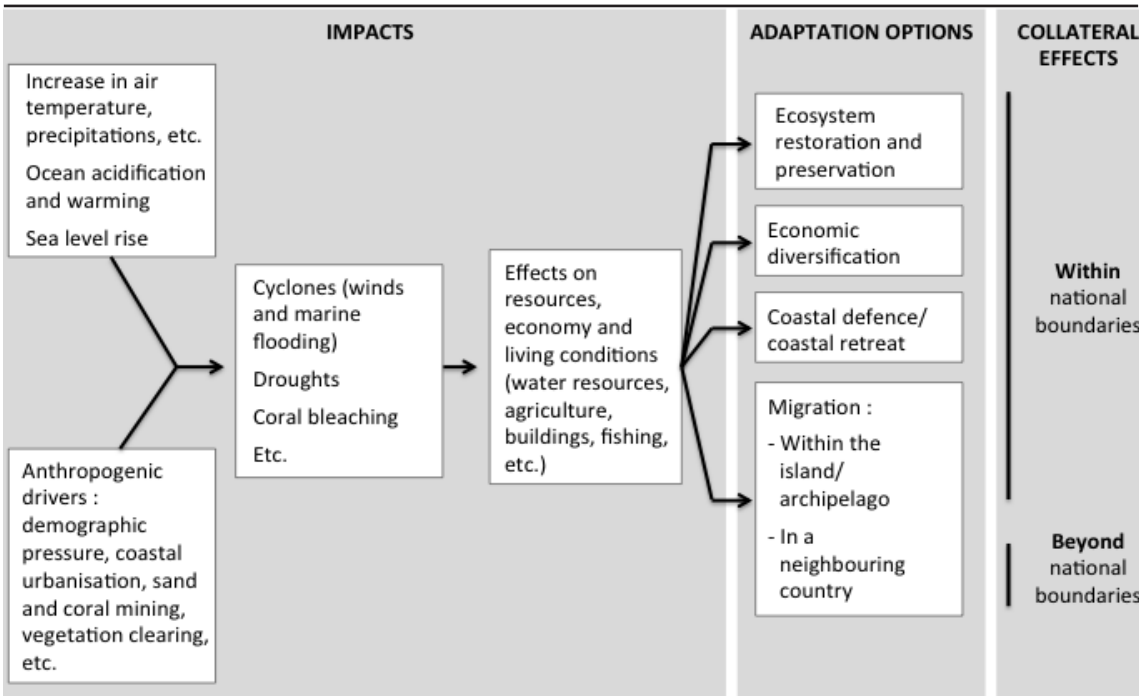
Example 2 – Adaptation for Transboundary Water resources management institutions in Africa

In semi-arid areas like the Senegal river basin, the allocation of a scarce water resource between sectors and between the countries sharing the same resources is organized through institutions, like the OMVS (Office de Mise en Valeur du fleuve Sénégal) or the ABN (Autorité du Bassin du Niger), established on the basis of an international negotiation between the riparian countries. The current allocation of water and dimension of water management infrastructures have been decided and designed based upon data on past climate variability and levels of precipitation and runoff. As a result, future changes in variability and average runoff are not well anticipated by national adaptation policies that will however have to manage changes in future needs, particularly in irrigation. Because of the high uncertainty in climate change impacts and future climate variability patterns in the region, adaptation efforts would probably need to include shifting from the former cropping system in irrigated areas to completely different types of crops and cropping systems. Yet, this has to be anticipated in order to prepare possible reconversion of whole supply chains. In the event of non-anticipated water restrictions due to the unpreparedness of agricultural sectors, the institution in charge of transboundary water management (e.g., OMVS or ABN) would have to drastically reallocate water from one sector to another, or from one country to another, which would lead to radical political conflicts within as well as among countries. Conflicts of that scale are not the ones that transboundary water management organisations have been designed to handle, and would probably directly necessitate United Nations intervention.

Example 3 – Soya, Brazil, China and Europe: international commodity markets between national adaptation and global adaptation

Europe and China are important importers of South American soya to feed their livestock. In a business-as-usual scenario, the demand for feed and soya in particular will continue to grow with the increase of the share of animal products in diets in main regions of the world, and also in South America itself due to internal demand. The international market for soya will therefore be more tensed than today (Paillard *et al.*, 2011). If a series of extreme climatic events severely reduce the capacity of South American countries to produce soya, which is presented as possible under certain climate change scenarios, in a time where its internal demand for feed will already have increased a lot, non-adaptation at the domestic scale would lead to decisions of export restrictions severely impacting the price of soya on global markets, and leading to important negative economic impacts on livestock sectors in China and/or Europe. Coordination to avoid the impacts of such a non-adaptation scenario would thus be necessary. Economists have already explained for a long time that when a country stops or restricts its exports in the case of a drought affecting its own capacity of agricultural supply, it actually

Figure 4. Illustrating chain of impacts for small islands



Source: Nurse *et al.* (2014).

exports its variability to the rest of the world. The volatility of global commodity markets is therefore recognized as an issue for international coordination. Hence the efforts within the World Trade Organisation or the G20 to progress towards a better coordination on world commodity markets, in the aim of avoiding as much as possible export bans and relying on the fluidity of world markets to be able to react to climate shocks. The case of a market like the future market for soybeans, where the tension is due to an increase in demand even in the major producers, and where climate change might particularly impact also these major producing countries, shows that the fluidity of world markets does not seem a sufficient adaptation measure for climate change impacts. Contrary to the non-adaptation scenario, an adaptation scenario would rely on coordinated anticipation of future tensions on the soya market, translated into domestic food and agricultural strategies in South America, China and Europe, to enable changes from the business-as-usual scenarios in the food sector in all three regions.

From a more generic perspective

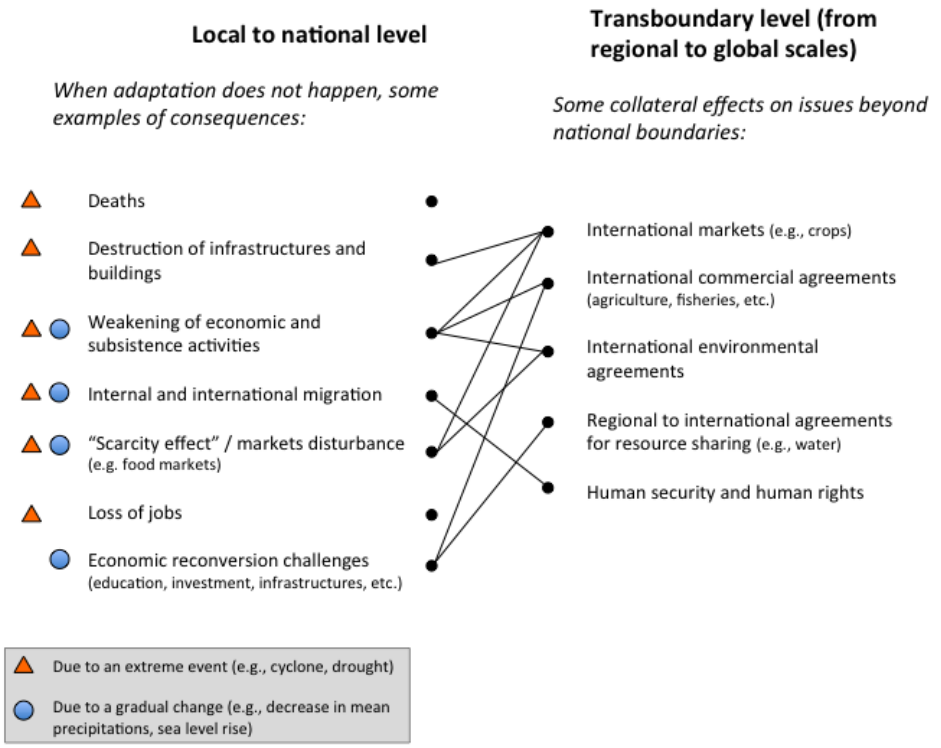
These three contrasted examples show various pathways from local/national impacts to regional/global consequences and concerns. When upscaling the approach by considering a wider panel of climate change impacts related to both one-set events and gradual changes, one can come up with a more generic view of the possible transboundary effects of domestic non-adaptation onto the regional to global scales (Figure 5). This indirectly demonstrates the potential benefits for the international community to consider adaptation also as a global concern.

3. WHAT DOES CONSIDERING THE TRANSBOUNDARY DIMENSION OF ADAPTATION MEAN FOR INTERNATIONAL CLIMATE NEGOTIATIONS?

3.1. The need for a Global Adaptation Goal

Sections 1 and 2 demonstrate why the international community should feel concerned by what is happening at the national level in terms of adaptation, beyond only providing funds. Such a claim supposes the international community to have a framework designed to allow monitoring progress and better sharing experiences. Yet, such a framework supposes to rely on both a collective understanding of what adaptation means and shared tools to capture adaptation efforts and limitations on the field. This argues in favour of the development of a Global Adaptation Goal within the post-2015 climate regime.

Figure 5. The possible collateral effects of non-adaptation at the national level on the regional to global scales



In previous works, we defined Global Adaptation Goal as the commitment of the international community to ensure human security[1] (or well-being) in a +2°C world,[2] meaning first, enhancing adaptation efforts when possible, and second, providing adequate answers for those whose security could not be covered in a +2°C world (Magnan *et al.*, 2014). In a nutshell, this means that in order to structure and organise collective action at the global scale, the international community could be inspired by the way the framework for Mitigation has been progressively developed, i.e. the definition of a common goal and of references and tools to track progress and efficiency. Such an idea of a Global Adaptation Goal also emerged, although on quite different bases, from International Agencies such as the United Nations Environmental Programme (UNEP, 2014) as well as from informal bilateral discussions with developing countries and groups of countries that confirmed the supply from Parties to the UNFCCC to go ahead in the context of negotiations in terms of better identifying what should be behind "Adaptation". The approach of building a "parallelism" between mitigation and adaptation also emerged from a recent paper from the Organisation for Economic Co-operation and Development (Helgeson and Ellis, 2015).

Defining a framework for a Global Adaptation Goal—that would thus also allow addressing the risks of negative effects of non-adaptation from national to regional/global scales—is not achievable by COP21 in December 2015, as this formerly requires in-depth collective discussions among Parties on various items (see sub-sections below). However, and given the previous developments, we argue here this perspective must become an essential pillar in the post-2015 climate regime. What is reasonable to expect from COP21 is a general declaration, ideally within the legal agreement and signed by all the Parties, on "a commitment to adapt that implies the development of an international framework for enhancing adaptation worldwide, preventing countries from transboundary

1. Human security is in response to widespread and crosscutting threats. These threats can spread rapidly within and across nations and give rise to more intractable crises that seriously challenge both Governments and people. At the same time, human security underscores the universality and interdependence of a set of freedoms that are fundamental to human life (Definition from the *United Nations Office for the Coordination of Humanitarian Affairs*).
2. Based upon recent developments in climate research (see AR5's outcomes), Science criticises this +2°C target, arguing that we are currently rather on track to a +3 or +4°C world. Although we agree with such a conclusion, we advocate for a discourse that fits in the negotiation language, i.e. the +2°C objective of the Copenhagen Accord. The main reason is that ignoring such a political landscape will lead to provide the negotiation arena with unsuited insights and recommendations.

negative effects, and ensuring the world is on track to adaptation".

3.2. What benefits to expect from a post-2015 Global Adaptation Goal framework?

At this stage, three major benefits can be expected. First, as well expressed by Helgeson and Ellis (2015), the international climate community could help '*raise the political profile of adaptation at a national level, and thus facilitate enhanced national-level coordination, institutions, planning and/or actions*' (2015: 26), meaning it could '*help to catalyse domestic action on adaptation*' (2015: 27). The incentive role of the international climate community well functioned for the Mitigation issue, and there is no reason it cannot also be a driving force for the Adaptation issue.

Second, a Global Adaptation Goal framework will be a key tool to help answering the following critical question: "are we, as Humankind, on track to being adapted to a warmer world?" Answering this question raises fundamental issues such as individuals' well being (equity, human rights, etc.) and the right to development, for example. Tracking adaptation is thus of key importance, and the UNFCCC actually advocates for this when it invites Parties to '*formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to… facilitate adequate adaptation to climate change*' (UNFCCC, art. 4.1b).

Third, and given the previous developments, it is easy to understand that the better we will track adaptation at the national level, the better we will anticipate and be able to avoid the negative effects of non-adaptation on the regional to global scales.

3.3. Recommendations for structuring a post-2015 Global Adaptation Goal framework

As reminded above, to design a Global Adaptation Goal framework will not be an easy task, especially because this supposes to address at least four challenges (on metrics, mechanisms, leading institutions and political barriers), which in turn highlight key areas of progress for the post-2015 climate negotiation process.

Metrics: Defining metrics at the national level always raises problems, i.e. the one of representativeness ("do the metrics we use capture what is really happening on the field?") and of comparability ("one metric can be relevant for a country, but not for another one"). This is due to the complex context-specific nature of Adaptation. While metrics must cover both results and processes at work, they can be qualitative or quantitative, each of these formula carrying limitations. Despite these difficulties, there are growing efforts from the scientific and international communities to define such metrics, but these efforts remain scattered. As a result, the challenge now is probably more about gathering such approaches in a coherent framework rather than about inventing new metrics. Henceforth the following recommendation to be addressed to the post-2015 climate negotiation process (and so indirectly to COP21):

- *Recommendation 1:* To **develop a refined synthesis of the existing frameworks to assess adaptation efforts** qualitatively and quantitatively. Such a synthesis would take into account both the scientific and grey literature, and come up with pragmatic proposals to be discussed by the Parties to UNFCCC in order to identify a list of indicators to apply at the country level (given that all indicators will not be equally relevant from one country to another).

Mechanisms: Associated with the metrics issue is the one on the mechanisms to be used to allow monitoring progress. Here again, options for Adaptation could be inspired by options for Mitigation, i.e. regular national reports to the UNFCCC. And here, National Determined Contributions (NDCs) could be useful vehicles. First, because Adaptation has also been mentioned in the Lima Call for Climate Action as a needed component of NDCs. NDCs are indeed recognized as being a useful channel to express what each Party to the UNFCCC understands is a fair share in the international cooperative effort to deal with climate change. In this view, strengthening the Adaptation part of NDCs is just consistent with the need for a substantial cooperative work on this issue, beyond national boundaries. Second, and in line with the previous argument, because NDCs can be seen as useful instruments to share knowledge and experience, and thus to build the complete picture of national and global Adaptation progress, in the aim of tracking the adequacy between actions and goals at the global scale. Third, because NDCs are tools allowing reporting on '*institutional aspects at the national level (e.g., integrating adaptation within national development planning, strengthening governance and enabling environments), planning aspects (e.g., undertaking a national adaptation plan process), financial aspects (e.g., developed countries to formulate adaptation support plans) and information-related aspects (e.g., developing countries to showcase their adaptation efforts and*

needs)' (Helgeson and Ellis, 2015: 29). What is lacking is the metrics to be used.

- *Recommendation 2:* To **strengthen the NDCs framework on Adaptation** (structure, content, multi-year work plan), first to ensure the learning process about the best ways to tackle Adaptation challenges, i.e. identify good and bad practices and the ways to replicate success and avoid failures; and second to lay the foundations for the action/goal adequacy assessment at the global scale. Note here that there could still be a debate on whether NDCs should remain focussed on mitigation efforts and information on adaptation should be channelled otherwise (i.e., "NDCs bis"). Although keeping an open mind on this point, we argue in favour of an equal treatment between Mitigation and Adaptation under the same instrument. Of course such a point cannot be addressed at COP21, and it will need to be part of the post-2015 work programme.

Leading international institutions: As previously mentioned, tracking adaptation would be relevant in order to improve national and collective action, allocate priorities (in terms of funding resources, consistent frameworks to be used, technology needs and areas of cooperation), develop capacities to better understand the transboundary effects addressed in this paper, and even assess additional Mitigation efforts. There may be many different interested players, notably: international funding institutions, insurances and reinsurances companies, investors, humanitarian and development agencies, and national to subnational governments. Yet, the UNFCCC could be the place to play that role, as it already does with Greenhouse gas inventories. It already has got some previous tools already in place: the compilation of National Adaptation Plans, the Adaptation Committee, NDCs, etc.

- *Recommendation 3:* To **reaffirm the key role UNFCCC could play in tracking adaptation and induced transboundary risks at the global scale**. Starting from this, the UNFCCC is to evolve towards a new understanding where its major role would be to become the setting where the international community can keep a common vision on what is going on, as well as on the lessons to be drawn from national experiences. The comprehensive perspective does require following up the Adaptation process. To ensure this function, it is key for the post-2015 negotiation process, first, to generate a shared understanding of what a Global Adaptation Goal could be. Second, and from a more practical perspective, maybe there will be a need for developing a kind of *Global Observatory of Adaptation Implementation and Induced Transboundary Risks* (i.e., an UNFCCC report) addressing Adaptation tracking at the global scale through a synthesis of adaptation parts of NDCs.

Political barriers to overcome: Tracking adaptation and transboundary negative effects of non-adaptation is of course an extremely sensitive issue as it will undoubtedly raise various political barriers. First, because of the fear on the side of those not feeling able to develop metrics and reports. Second, because of the fear on the side of those feeling "potential donors" that can be blamed for the damage and demanded for funding. Although these postures are understandable, they are no longer tenable: given the argumentation developed in this paper, transboundary negative effects cannot be neglected and national adaptation needs to be recognized as also being a global concern.

- *Recommendation 4:* To **anticipate political barriers by developing a constructive argumentation** on the usefulness of a global Adaptation tracking process – and more broadly of a Global Adaptation Goal – and on the co-benefits to be expected. Here again, this challenge falls under the post-2015 climate negotiation process. Some first points can be raised here that only serve as food for thought. *(i)* Adaptation at the national and sub-national levels is a learning case that still requires specific support, and so strengthened cooperation. *(ii)* The need is there, but it currently suffers from an approach to Adaptation mainly based on intuitions, so that are at high risk of not prioritising properly, of not supporting the most relevant measures (i.e. limiting the risk of non-/mal-adaptation and induced collateral effects within and outside the country), and even of being unfair. There is thus space for a more structured and professional approach. *(iii)* Eventually, the "we all are on the same boat" rhetoric (i.e., acknowledging for possible transboundary negative effects of non-adaptation) means all the countries need an Adaptation tracking process to be in place to go beyond the "wait and see" mood.

REFERENCES

Alley R.B., Marotzke J., Nordhauss W.D., Overpeck J.T., Peteet D.M., Pielke R.A., Pierrehumbert R.T., Rhines P.B., Stocker T.F., Talley L.D., Wallace J.M. (2003). Abrupt climate change. *Science* 299: 2005-2010.

Burke L.M., Reytar K., Spalding M., Perry A. (2011). Reef at risk revisited. World Resources Institute Report – http://pdf.wri.org/reefs_at_risk_revisited.pdf.

Cooley S.R., Jewett L., Reichen J., Robbins L., Shrestha G., Weiczorek D., Weisberg S.B.(*forthcoming)*. Getting ocean acidification on decision makers' to-do lists: dissecting the process through case studies. *Oceanography*.

Duvat V., Magnan A., Gattuso J.-P. (2015). Small islands, ocean and climate. Special report to the scientific committee of the Ocean and Climate Platform – http://www.ocean-climate.org/wp-content/uploads/2015/03/small-islands-ocean_ScientificItems_BD-10.pdf.

Helgeson J., Ellis J. (2015). *The role of the 2015 agreement in enhancing adaptation to climate change*. OECD, Climate Change Expert Group, Paper No. 2015(1), 57 p – http://www.oecd.org/environment/cc/Role-of-2015-Agreement-in-Enhancing-Adaptation-to-cc-2015%281%29.pdf.

Hoegh-Guldberg O., Cai R., Brewer P., Fabry V., Hilmi K., Jung S., Poloczanska E. & Sundby S. (2014). *The oceans*. In: Field C. & et al. (Eds.), *Climate Change 2014: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

Howes E., Joos F., Eakin C.M., Gattuso J.-P. (2015). An updated synthesis of the observed and projected impacts of ocean warming and acidification on physical and biological processes in the ocean. *IDDRI Study*, 02/155246 p.

IPCC (2014). Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

Klein R.J.T., Midgley G.F., Preston B.L., Alam M., Berkhout F.G.H., Dow K., Shaw M.R. (2014). Adaptation opportunities, constraints and limits (chap. 16). In: Field C, Barros VR, Mastrandrea MD (Eds.) et al. Climate Change 2014: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, 2014.

Magnan A., Ribera T., Treyer S., Spencer T. (2014). What adaptation chapter in the new climate agreement? *IDDRI Policy Briefs*, 09/14, 5 p.

Magnan A. (2014). Avoiding maladaptation to climate change: towards guiding principles. *S.A.P.I.E.N.S.*, 7(1), online.

Mimura N., Pulwarty R., Duc D.M., Elshinnawy I., Redsteer M.H., Huang E.-Q., Ndi Nkem J., Sanchez Rodriguez R.A. (2014). Adaptation planning and implementation (chap. 15). In: Field C, Barros VR, Mastrandrea MD (Eds.) *et al.* Climate Change 2014: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, 2014.

Murray V., McBean G., Bhatt M., Borsch S., Cheong T.S., Erian W.F., Llosa S., Nadim F., Nunez M., Oyun R., Suarez A.G. (2012). *Case studies*. In: Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.), *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 487-542.

Noble I, Huq S, Anokhin Y, Carmin J, Goudou D, Lansigan F, Osman-Elasha B, Villamizar A (2014). Adaptation needs and options (chap. 14). In: Field C, Barros VR, Mastrandrea MD (Eds.) *et al.* Climate Change 2014: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, 2014.

Nurse L, McLean R., Agard J., Briguglio L.P., Duvat V., Pelesikoti N., Tompkins E., Webb A. (2014). Small islands. In: Field C. & *et al*. (Eds.), *Climate Change 2014: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

Paillard S., Treyer, S., Dorin, B. (Eds.) (2011). *Agrimonde: scenarios and challenges for feeding the world in 2050*. Quae publisher, Versailles.

Pörtner H.-O., Karl D., Boyd P., Cheung W., Lluch-Cota S. E., Nojiri Y., Schmidt D. & Zavialov P. (2014). *Ocean systems*. In: Field C. & et al. (Eds.), *Climate Change 2014: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

Schneider S.H. (2003). *Abrupt Non-Linear Climate Change, Irreversibility and Surprise*. OECD Working paper ENV/EPOC/GSP(2003)13/FINAL, 32 p – http://www.oecd.org/env/cc/2482280.pdf.

Weatherdon L., Rogers A., Sumaila R., Magnan A., Cheung W. (2015). An updated understanding of the observed and projected impacts of ocean warming and acidification on marine and coastal socioeconomic activities/sectors. *IDDRI Study*, 03/15, 46 p.

World Economic Forum (WEF) (2015). Global Risk Report: 10th edition. World Economic Forum – http://reports.weforum.org/global-risks-2015/

National adaptation is also a global concern

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IDDRI'S PUBLICATIONS

- Magnan, A., Ribera, T., Treyer, S., Spencer, T. (2014). What adaptation chapter in the New Climate Agreement?, IDDRI, *Policy Briefs* N°09/14.
- Deprez, A., Colombier, M., Spencer, T. (2015). Transparency and the Paris Agreement: driving ambitious action in the new climate regime, IDDRI, *Working Papers* N°03/15.
- Maljean-Dubois, S., Wemaëre, M., Spencer, T. (2014). A comprehensive assessment of options for the legal form of the Paris Climate Agreement, IDDRI, *Working Papers* N°15/14.
- Spencer, T., Fu, S., Zou, J., Colombier, M., Ribera, T. (2014). The mitigation framework in the 2015 climate change agreement: from targets to pathways, IDDRI, *Working Papers* N°07/14.

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