

## Climate, Trade and Water: A “Grand Coalition”?

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### ABSTRACT

This paper argues first that the climate, trade and water communities should leave aside their prejudices, and it provides clear evidence that the three communities confront the same vested interests when trying to solve their common problem of free riding. It then argues that such strong similarities speak in favour of “sister” world regimes in these three domains. These sister regimes should first share the key principles of non-discrimination (national treatment and most favoured nation) embodied in the WTO. Second, by contrast, the climate and water communities should review the other WTO rules in order to adapt them to their specific demands when necessary. Interestingly, when doing so, these two communities may provide much needed inspiration for improving some rules of the current trade regime. Finally, the climate and water regimes may also adopt provisions on pricing that are not needed by the trade regime, which deals mostly with well-functioning markets.

**Keywords:** Non-discrimination, national treatment, most-favoured nation, tariffs, carbon border tariffs and taxes, subsidies, export measures, technical barriers to trade, sectoral agreements.

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## 1. INTRODUCTION

The climate, trade and water communities have a long history of mutual distrust. In the past, each community has seen its own topic as the most important policy issue, which could suffer no constraints from other quarters. But recent years have sent the same grim signal to the three communities. World negotiations on trade (Doha Round) and on climate (COP 15 and 16) are much closer to failure than to success (Messerlin, 2010; Lloyd, 2011). Serious international discussions on water have not even begun, despite the fact that if nothing is done, severe water scarcity is expected to occur more rapidly than climate change (Brabeck-Letmathe, 2008), with such risks being compounded if the climate does change as predicted.

This paper argues that, in contrast with this long history of prejudice, the three communities should realize that they have many deep interests in common, that they therefore have strong incentives to envisage mutually beneficial actions, and that they should launch serious trust-building actions in the years to come. The paper suggests a few specific initiatives as illustrations of what could be done if every side realizes how close their core interests are.

Section 2 spells out some key common points between climate, trade and water issues, which will be the source of strong incentives to work together. First, the three communities face very similar fundamental economic problems of free-riding. Second, and even more crucially from a policy perspective, they face the same friends and foes. This critical feature—rarely mentioned despite strong evidence—opens the way to a “Grand Coalition” that could mobilize the leverage needed to speed up the international negotiations on the three topics, something that none of these communities has been able to achieve alone for its own topic.

Sections 3 and 4 go one step further by looking at what all these similarities mean when one tries to design the world climate and water regimes. In this paper, a ‘regime’ is defined as a set of rules that makes countries confident enough to negotiate joint targets (such as cuts in CO<sub>2</sub> emissions, in tariffs or in water over-use) to enforce them in good faith, and to settle their disputes on implementation when such disputes arise. The world trade regime already exists, with the text of the General Agreement on Tariffs and Trade (GATT) setting the rules and the World Trade Organization being the forum to negotiate cuts in tariffs (or other trade barriers) and the place to settle disputes. Sections 3 and 4 argue that the climate and water regimes should be ‘sisters’ of the trade regime. The term ‘sister’ underscores the fact (i) that each community should have its own world regime (i.e. rules and institution), (ii) that these regimes should share some key rules, but (iii) that they should also keep some degree of freedom by adopting tailor-made rules in order to address specific demands in their respective domains.

Focusing on ‘regimes’—that is, on ‘setting the rules’—is essential. Giving too much precedence to negotiations over setting rules is a dangerous game in the long run, as currently illustrated in the trade area. The Doha Round saga, with its incredibly stubborn struggles over tiny tariff cuts, is generating a rancorous environment which risks undermining the core GATT rules (disciplines). The GATT founding fathers understood these disciplines as the most valuable component of the world trade regime. This view (largely forgotten today) proved correct in 2008–2009. During these troubled years, the GATT rules on tariff commitments were essential to avoid a trade crisis on top of a financial crisis. There is another reason to focus on setting the rules. Climate and water regimes are necessary if one wants to avoid disputes in these two domains being settled under WTO

law, a situation that the climate and water communities are unlikely to accept.

## 2. THE BASIS OF A GRAND COALITION: SIMILARITIES

The current relations between the climate, trade and water communities are often dominated by prejudice. The climate and water communities see trade as an activity exacerbating their problems and the world trade regime as imposing intolerable constraints, while the trade community perceives the constraints imposed by the climate and water issues as obstacles to freer trade, one of the most powerful engines of growth.

This section briefly develops the similarities by extending an earlier work on the similarities between climate and trade (Messerlin, 2010) to the water case. It begins by providing some basic information on trade and water issues.

### 2.1. ‘Virtual trade’ in water

There are three ways to trade water. First, water can be traded under the directly saleable form of bottled mineral waters and other beverages. This represents a tiny share of traded water. Second, ‘freshwater’ can be traded via pipelines (as best illustrated by California and its neighbouring US States, or by pharaonic projects from Southern to Northern China) or ships (attempts to trade water from Southern France to Catalonia). The volume of this trade is even tinier than for mineral waters, and more importantly there are serious doubts about the economic and environmental efficiency of the available technologies. Interestingly, some preferential trade agreements (PTAs) ban this kind of water trade, as best illustrated by the Canadian ban in the NAFTA context. Lastly, freshwater can be traded as a key input included in other products, which are essentially farm products. It is estimated that 70 to 80 percent of the water used in the world is used by farmers. This feature makes the ‘virtual trade’ of water occurring under the form of trade in farm products by far the largest share of traded water. It also reduces the cases of market failures with a purely local impact (for such cases, see WTO Report, 2010).

Like any trade, water trade disconnects production and consumption. A country could thus reduce the use of its own water (by having more water-efficient domestic farm production) and at the same time it could increase the use of ‘foreign’ water (by importing more foreign farm products). This situation has been observed in the climate context, for instance with Britain cutting its

CO<sub>2</sub> emissions by 14 percent while increasing its CO<sub>2</sub> consumption by 20 percent (Barrett, 2011). That said, interestingly, it is estimated that compared to autarchy, current international trade allows substantial savings in terms of world water amounting to roughly 20+ percent of total water use (Chapagain et al., 2006). This figure gives a crude estimate of the opportunity cost of rejecting the GATT-based trade regime in the water context, despite the current very distortive domestic water policies characterized by no pricing/taxing mechanism, no recognition of externalities and, even worse, by a routine implementation of policies subsidizing the use of water (and thereby accelerating its scarcity) in many countries, as best illustrated by the recent drought in France and a few other EU Member States.

This brief presentation on trade in water deserves further comment. The treaties sharing the water of rivers among the countries having access to the same river (Danube, Nile, etc.) do not deal with water trade, in other words they do not deal with the non-navigable use of water in the rivers because of the opposing interests of upstream and downstream riparians. Rather, they consist in imposing water quotas (“water rights”) on the countries concerned to be used for domestic production in these countries. These water-sharing treaties deserve a final remark. It could be argued that, assuming everything else remains constant, the misuse of such treaties (with a country keeping more water from a river than it should) could be counter-balanced, partially or even totally, by virtual trade in water under the form of farm exports from the non-compliant country to the other countries along the river.

### 2.2. The basis of a Grand Coalition

Table 1 identifies three levels of similarities: those related to a common problem, those related to common foes and those related to common friends, the latter two being crucial from a policy perspective.

Starting with the common problem, economic analysis suggests a well known basic similarity: climate is a global public good while water is a local public good (a “common pool resource”, Perry et al., 1997; Le Vernoy, 2010) with water resources becoming rivalrous only once the level of water exhaustion is reached. Like all public goods, climate and water are thus subject to free-riding in the absence of efficient property rights. As water is a local public good, property rights may be more easily managed by collective action, such as the centuries-old water irrigation systems of the

**Table 1.** The basis of a Grand Coalition

	Climate	Trade	Water
Common problem Public good Instrument Optimal level One world/multilateral	World Tax/price Positive but unknown Multilateral (COPs)	World Tax (tariff) Zero and known Multilateral (WTO)	Local=world Tax/price Positive but unknown Not yet clear,(only regional level)
Common foes (interests opposed to an economically sound solution to the problem)	Steel, chemicals, etc.	Steel, chemicals, etc., farmers	Farmers
Common friends (interests favouring an economically sound solution to the problem)	Exporters of clean goods and countries developing comp. advantages	Exporters	‘Efficient’ farm exporters (water costs included)

‘bisses’ in the Swiss Valais region or the ‘Dujiangyan’ in the Sichuan province of China.

Surprisingly, the fact that “free trade” is also a public good is less often recognized. However, it is clearly subjected to the free-riding instinct which re-emerges time and again when, despite robust economic analysis and history, countries believe that they would be better off by imposing tariffs on their imports while getting free access to the markets of the rest of the world. Such free-riding behaviour is due to the fact that trade liberalization benefits each country as a whole, but generates some losers within the country (the so-called Stolper-Samuelson theorem). These domestic losers are the natural force behind the free-riding instinct of every country, which is likely to stay with us forever.

The fact that few observers realize today that freer trade is a public good is largely due to the existing world trade regime, that is, the GATT/WTO principles which have been very successful in limiting countries’ deep free-riding instincts in trade matters, and in inducing them to move together in a process of ‘multilateral’ liberalization.

In addition to the public good aspect, Table 1 shows that the three communities rely on similar instruments (taxes or prices). There is a vast debate on the costs/benefits of taxes vs. prices in the climate context (Tirole, 2009; de Melo, 2011) and it is beyond this paper to summarize this literature. In order to remain as simple as possible, this paper assumes the use of taxes. A treatment in terms of prices may raise additional issues (Monjon and Quirion, 2010) but would not change the basic points addressed in the paper.

Table 1 also shows that the political environment of the three communities is increasingly similar. Interestingly, all three communities have gone through the same evolution. At the beginning, each wanted to take action at the world level, before recognizing that sovereign states remain the key actors. The 19<sup>th</sup> century was dominated by the idea of ‘universal’ free trade, but the GATT is built on the recognition that the path to freer trade will be a long road paved by multilateral agreements.

Until COP 15, the climate community was for the most part convinced that a “world” tax/price was the solution. Since COP 15, it has largely been realized that countries are in the driving seat, and that a multilateral approach is the only one that will be politically achievable for a very long time. In the water case, as the realization of the challenge ahead is much less advanced in most countries, the level of action is yet undefined. But, the fact that ‘virtual water’ occurs over very long distances—as does virtual trade in CO<sub>2</sub>—can only facilitate the recognition of a ‘multilateral’ framework as the key source of decision.

That said, there is one notable difference between the climate/water communities and the trade community, which is the optimal level of taxation (or pricing). The trade community enjoys a better position than the two other communities because it knows that the optimal tariff level is zero percent (if one excludes the case of ‘large’ exporting or importing countries and other quantitatively unimportant externalities) and because it has the additional advantage that, from a political perspective, cutting taxes is generally less difficult than raising taxes. By contrast, the level of the tax/price is “unknown” in the climate and water cases, except that it should be positive, hence politically costly to impose. Being unknown, this optimal level has thus to be achieved by a trial and error process, which makes the political process even more difficult, particularly in the climate case (the local dimension of water as a public good may soften these difficulties).

### 2.3. Building a coalition: Common foes

Were it alone, a common problem would not be a strong enough motive from a political perspective to serve as a basis for building a coalition. Much stronger is the fact that the communities share the same foes and friends. There is considerable evidence that this is the case for the three communities in question, with a strong correlation

**Table 2.** Common foes to climate or water and trade, selected sectors

CO <sub>2</sub> -intensive Sectors		Water-intensive Sectors	
Sectors <sup>a</sup>	Protectionist Pressures <sup>b</sup>	Sectors <sup>a</sup>	Protectionist Pressures <sup>b</sup>
Highly intensive sectors			
Aluminum	***	Beverage	High tariffs
Cement	***	Farm, food	High tariffs
Chemicals	***		
Pulp & paper	***		
Steel & iron	***		
Moderately intensive sectors			
Aviation		Apparel	*** <sup>c</sup>
Boards	***	Electronics Hitech	***
Ceramics		Electricity/Energy	
Copper		Forest products	***
Expanded clay		Metals & mining	***
Glass	**	Pharmaceuticals	
Magnesite	***		
Manganese	***		
Man-made fibres	***		
Nickel	*		
Potassium	**		
Starch	***		
Textiles	***		
Tyres	***		
Zinc			

Sources: European Commission (2009) for CO<sub>2</sub>-intensive sectors. Morrison et al. (2009) for water-intensive sectors. Author's assessment of protectionist pressures.

Notes: [a] Underlined sectors are particularly CO<sub>2</sub>- or water-intensive. [b] Protectionist pressures are estimated by the frequency of anti-dumping, anti-subsidy or safeguard measures applied to the sector (the higher the number of stars, the more frequent these measures are; sectors with no star have not used these types of measures in a noticeable way). [c] Some agricultural raw products used in textiles can be highly water-intensive, as best illustrated by cotton.

between CO<sub>2</sub>-intensive sectors (climate), water-intensive sectors (water), and protectionist industrial and farm interests (trade).

Table 2 provides additional complementary information. It lists the CO<sub>2</sub>-intensive and water-intensive sectors, that is, the sectors that will constitute the bulk of the opposition to increasing taxes for climate and water reasons. It also lists the sectors that are the most active in seeking more protection, as revealed by the frequency of their use of conditional protection (anti-dumping, anti-subsidy and safeguard measures). It suggests a clear correlation between CO<sub>2</sub>- or water-intensity and protectionist pressures (very few CO<sub>2</sub>- or water-intensive sectors do not exhibit strong or notable protectionist pressures).

Table 3 gives more detail on the common foes of the trade and water communities by splitting the farm sector into crops and animal products. The average tariffs on these farm and processed products are several times higher than the tariffs on industrial products for the OECD countries. This observation suggests two remarks.

First, it underscores the fact that the trade and water communities face the same foe—the farm sector. This result is strongly reinforced if the subsidies granted to the farm sector by OECD countries, and increasingly by some emerging economies (such as China recently) are taken into account, as shown by the calculations of the producer and consumer subsidy equivalents (OECD, 2011).

Second, Table 3 suggests that trade liberalization in the farm sector would have an important impact on water use. If water scarcity or CO<sub>2</sub> emissions are not properly reflected in the production costs for food or industrial goods, countries may appear to have comparative advantages in certain productions that they do not have in reality (a variant of this argument is taken up in the context of PTAs, see below). Consequently, there is a need to accompany trade liberalization with the appropriate water policies. Such policies should focus on the supply and demand for food. Supply policies would range from the adoption of more economically sound agricultural policies to the adoption of those creating the necessary mechanisms (markets and/or collective action) for an appropriate pricing of the water used by farmers. Demand policies would consist in a wide range of health policies aiming to balance the increased demand for food fuelled by higher incomes in the emerging economies and increased concerns for a healthy diet (avoiding heart diseases, overweight, etc. caused by unbalanced and/or excessive food consumption).

## 2.4. Building a coalition: Common friends

So far, the picture is less clear for common friends than for common foes—largely because the situation is evolving rapidly. As exporters of



**Table 3.** Implicit tariff rates on virtual water, 2007

	Applied Tariffs (%)			Bound Tariffs (%)		
	OECD Countries	Developing Countries	All Countries	OECD Countries	Developing Countries	All Countries
All agricultural goods	16.7	15.3	15.5	31.3	60.9	57.5
Crops	12.5	17.0	12.6	23.7	58.9	43.8
Water requirements <sup>a</sup>	2,992	5,753	4,536	2,992	5,753	4,536
Animal products	13.5	14.2	9.6	19.4	58.1	40.2
Water requirements <sup>a</sup>	6,587	10,066	8,396	6,587	10,066	8,396
All industrial goods	3.3	9.9	9.2	5.6	33.1	30.1

Source: WTO Tariff Profiles 2010, WITS.

Note: [a] Average water requirements (cubic meters per ton). The tariffs for all industrial goods may be higher than the average of the tariffs on crops and animal products because tariffs on tobacco and beverages tend to be very high.

environment-friendly products are still a small proportion of all exporters, they are only just starting to mobilize constituencies for supporting their interests. However, some industrial and advanced emerging economies (Germany, Sweden, and China) have begun to be aware of their emerging comparative advantages in environment-friendly products, and are increasingly eager to negotiate on such a basis. The situation is more complex in the water case, where there are emerging intra-national conflicts between water-saving farmers and water-wasting farmers, and competition between farmers and industrial and household water-users.

Another important source of evolution is the converging views on growth in the three communities. On the one hand, the climate and water communities are increasingly aware that poor countries badly need growth and that they are unwilling to sacrifice it on the altar of climate or water, all the more so because, for the many poor countries that are also small, the future climate or water situation is only very marginally dependent on their actions in these domains. On the other hand, the trade community is increasingly conscious that growth and climate or water are not necessarily antagonistic. Some industrial economies that were still recently emerging economies—such as Korea—are actively pursuing policies combining growth and climate/water concerns; the so-called ‘Green Growth’ approach (Lee, 2010; Lee and al., 2011; Young, 2011).

### 3. SHIFTING FROM LITIGATION AND NEGOTIATIONS TO SETTING THE RULES

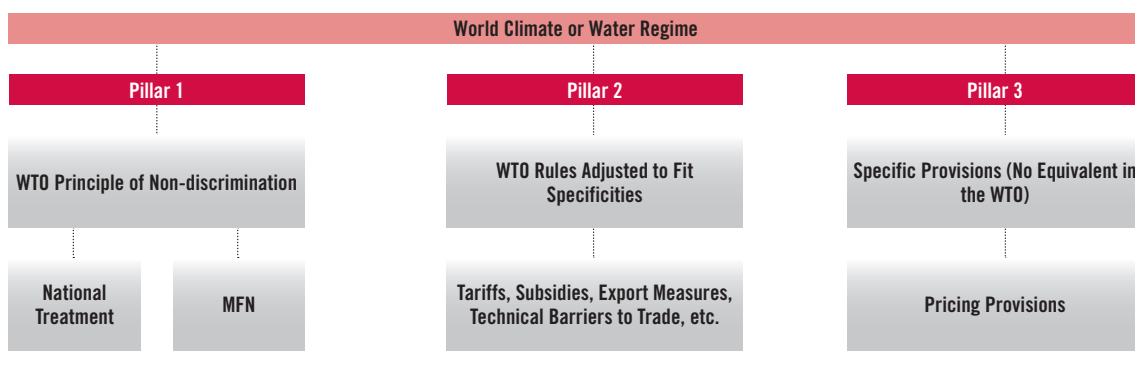
When looking at the potential connections between the existing world trade regime and the international climate and water regimes in the making, the existing literature does not take into account the above-mentioned similarities.

Rather, the vast literature on climate (Charnovitz, 2003; Pauwelyn, 2007; Houser et al., 2008; de Melo and Mathys, 2010; Hufbauer and Kim, 2010; Kommerskollegium, 2009; Moore, 2010; Horn and Mavroidis, 2010; Low et al., 2010; Kleen, 2011) and the limited one on water (Yang and Zehnder, 2007; Hoekstra, 2010) have entirely focused on all the potential conflicts and litigation issues that could occur between trade on the one hand, and climate or water on the other.

#### 3.1. From litigation to negotiations: the General Agreement to Reduce Emissions

The few papers that have made a more ‘friendly’ reference to GATT when examining the climate-trade nexus have given precedence to negotiations, as best illustrated by the proposal of a General Agreement to Reduce Emissions (GARE, Talbot and Antholis, 2011). GARE “*would perform the GATT-like function of setting the rules, arbitrating disputes and creating incentives for still other countries to coordinate in reducing emissions.*” The problem is that the reference to GATT is largely formal. The authors do not specify the GATT-like content of GARE. The similarity that they stress between GARE and GATT boils down to the “A” component of the acronyms—the fact that GARE would be an ‘agreement’, as GATT was. The reason is that the adoption of an agreement would require only 60 votes in the US Senate, while the adoption of a treaty would require 67. As critical as US constitutional constraints might be, they cannot be the key argument when building a world climate regime.

The GARE proposal is entirely focused on the negotiations on cuts in CO<sub>2</sub> emissions. It argues that the best way to make progress in these negotiations would be to limit them to the eight or so largest economies, with the progressive involvement of more countries. This approach does not

**Figure 1.** Sketching the world climate and water institutions

correspond well to the GATT history. In 1947-1948, it is true that the agreed tariff cuts (the equivalent of cuts in CO<sub>2</sub> emissions or in water use) involved a limited number of industrial GATT Members. But the GATT text itself was signed by a much wider group of countries, many of them being small or medium-sized economies. Shifting to the most recent years, the Doha Round negotiations have repeatedly shown that negotiations on tariff cuts limited to the largest economies (Brazil, China, the EU, India and the US) are far easier to conclude than negotiations involving a larger (multilateral and plurilateral) set of countries.

### 3.2. Focusing on setting the rules: the case for ‘sister’ institutions

In contrast to the existing literature, the rest of this paper focuses on ‘setting the rules’ by raising three questions. First, should the key WTO principle of non-discrimination be adopted by the climate and water international regimes? Second, do other WTO rules (such as those on subsidies, conditional protection, technical barriers to trade, etc.) fit the legitimate needs of the climate and water communities, and, if not, what should be done? Finally, is there a need for specific regulations addressing the specific demands of the climate and water communities?

In a nutshell, this section argues for three answers illustrated by pillars 1, 2 and 3 of Figure 1, respectively. First, the basic principle of non-discrimination, on which the world trade regime is based, is also shown to be crucial for the international climate and water regimes (pillar 1). Second, when (and if) they are needed, the other WTO rules should be adjusted to address the specific problems faced by the international climate and water regimes (pillar 2). Lastly, the climate and water regimes may need to develop some specific rules because they deal with incomplete markets (pillar 3).

Figure 1 deserves a preliminary remark. It may

give the impression that the ‘sister’ climate and water regimes are derived from the trade regime, and that there are no influences in the other direction, that is, from climate or water to trade. Leaving such an impression (WEF, 2010) would miss a crucial point in the building of a world global architecture. As stressed below, there are a number of badly designed provisions in the world trade regime that would require serious redrafting. The best illustration is the various instruments of conditional protection (anti-dumping, anti-subsidy and safeguard). All these instruments were conceived as a means to face potential trade shocks and to permit the necessary adjustments—in short, the price to be paid for making trade liberalization smoother. But, over the last 50 years, they have shown notoriously negative consequences, often in the opposite direction to their initial intent. In this context, drafting better provisions on adjustment policies in the climate and water international regimes would be a welcome help for the trade community to review these badly written GATT/WTO provisions.

## 4. DEVELOPING THE CONTENT OF THE SISTER INSTITUTIONS

This section suggests some elements of the content of Pillars 1, 2 and 3. It does not purport to be exhaustive, or to suggest the right solutions. It simply aims to offer suggestions that could be worth exploring in more detail.

### 4.1. Pillar 1: Sharing the fundamental principle of non-discrimination

Many members of the climate and water communities perceive the ‘non-discrimination’ principle of the trade regime as an unacceptable obstacle to the goals that they would like to achieve in their

respective domain. In the GATT/WTO context, this principle has two components—‘most-favoured nation’ (MFN) and ‘national treatment’ (NT) (Horn and Mavroidis, 2011).

- The MFN principle (GATT Article I) requires that a country impose the same tariff on the imports of a given good independently of the country of origin of the imports.
- The NT principle (GATT Article III) requires that a country impose the same domestic tax(es) on goods imported and on “like products” produced domestically. In other words, NT intends to create a level playing field between foreign and domestic products in domestic tax matters (once tariffs are paid).

#### 4.1.1. The current situation

Today, these two principles are in fact largely applied in the climate and water context in an indirect way. This is clearly the case for the NT principle: imported farm and industrial goods are widely subjected to the same domestic taxes as their domestic like products, with no consideration for their relative CO<sub>2</sub>- or water-intensities.

The situation is more complex for the MFN principle. Most tariffs imposed on farm products are MFN-based, since very few preferential trade agreements (PTAs) cover such products. By contrast, the MFN principle seems restricted in the case of industrial products by the many PTAs that systematically cover these products. However, this restriction is much less severe than it seems at first glance. This is because the last 20 years have witnessed substantial unilateral and multilateral tariff cuts, meaning that the tariff differences between countries that are parties to a PTA and those that are not are often small or negligible. Today, less than 17 percent of world trade is eligible for preferences, while no tariffs are imposed on 45–55 percent (China, EU, US) to 80 percent (Japan) of the imports of the large economies (Carpenter and Lendle, 2010). If preferential tariff margins from PTAs are larger for US and EU exporters (2.8 percent and 4.9 percent respectively), this is because they reflect the higher tariffs imposed by the emerging and developing countries. However, preferential tariff margins can be large in a few sectors (for example, 15.8 percent of US exports receive preferences above 5 percent, another 2.5 percent above 10 percent, and another 1.2 percent above 20 percent).

Interestingly, the climate, trade and water communities should share very similar views on PTAs. It is well known that the trade community has ambivalent feelings on PTAs. It perceives them as potential contributors to the new trade rules that are needed by globalized economies (on investment,

norms and technical barriers to trade, etc.) and that seem to be too difficult to design within the WTO forum. But, the trade community also perceives PTAs as a potential threat to the multilateral (GATT/WTO-based) trading system, since PTAs have the capacity to distort trade flows—not so much by tariff differences (for the reason mentioned above) but by non-tariff barriers of all kinds (from rules of origin to technical norms and regulations, etc.).

The climate and water communities have good reasons to share the concerns of the trade community. After all, a good produced by a country using a CO<sub>2</sub>/water-intensive technique could face no tariff when entering a country if this country is a PTA partner, whereas a similar good produced with a CO<sub>2</sub>/water-minimizing technique by a country not party to the PTA could face a tariff. In short, PTAs may favour excessive CO<sub>2</sub> emissions or water use.

#### 4.1.2. Looking at MFN and NT as a ‘package deal’

What follows argues that the climate and water international regimes should adopt the non-discrimination principle because the MFN-NT conjunction offers the best joint disciplines on two symmetrical threats—carbon tariffs and carbon border taxes (CBTs)—which are already widely felt in the climate context and are nascent in the water case. In fact, the MFN-NT can be seen as a package deal between the developing and industrial countries.

#### 4.1.3. Carbon tariffs and the MFN principle

The emerging countries feel threatened by ‘carbon tariffs’, which are tariffs that industrial countries would impose on their imports from countries having ‘incomparable’ climate policies. This threat has often been expressed by many Western Leaders over the last few years. The targeted countries are unspecified, but they are clearly the emerging (efficient) economies. By definition, such carbon tariffs will be discriminatory since they will target specific countries.

Interestingly, this kind of discrimination is not acceptable for the climate or water communities for the following reason: such carbon tariffs would not mirror the ‘right’ CO<sub>2</sub>- or water-intensity, since they are calculated on a country basis, not on a product basis, meaning that goods with low CO<sub>2</sub>- or water-intensity will be charged the same tariff as products with high CO<sub>2</sub>- or water-intensity. In other words, they have very little chance (if any) of being an acceptable second-best solution for the climate and water communities. Claiming that such carbon tariffs could at least be ‘useful threats’ forcing countries to join a climate or water regime

is not a strong argument. Set too low, such carbon tariffs are unlikely to exert a credible threat. Set too high, they are also unlikely to be credible because they will harm all the countries, including the countries initiating the threats. Last but not least, in both cases, the trade community feels entitled to look at such carbon tariffs as purely discriminatory measures since they do not bring positive ‘trade-offs’ in terms of reducing externalities, that is, CO<sub>2</sub>-emissions or water over-uses.

As a result, the emerging economies have a strong incentive to demand the MFN principle in the climate and water regimes in order to eliminate the threat of the carbon tariff instrument, and they should receive the support of the three communities. This conclusion does not mean that nothing should be done to reduce the externalities; it simply means that such actions should abide by the NT principle as argued now.

#### 4.1.4. Carbon border taxes and the NT principle

The industrial countries feel they risk losing any capacity to move ahead on CO<sub>2</sub>/water policies if they are unable to impose ‘carbon border taxes’ (CBTs) on certain imported goods. CBTs are very different from carbon tariffs. They are based on a mechanism similar to the one that, over the last 50 years, has routinely solved the existing differences among countries in domestic taxes, such as the value-added taxes (VAT). They require two (not one) synchronized adjustments: the exporting countries remove the carbon taxes (if any) that they impose on their goods when they are exported; and the importing countries impose their domestic carbon taxes (if any) on the goods they import (as well as on those they produce). This mechanism ensures the full respect of the NT principle of non-discrimination, since imported and domestic products are taxed at the same level. Industrial countries would feel reassured if they could enforce such a mechanism (again routinely implemented in the VAT case).

As a result, industrial countries have incentives to demand the NT principle. However, the NT principle is more complex than the MFN principle, and it generates more balanced views in the trade, climate and water communities.

The trade community fears that CBTs will be a backdoor to protection under environmental excuses. This fear is nurtured by the complexity of calculating CBTs, which could easily fuel ‘excessive’ CBTs (Jensen, 2009). The key question is whether there is an alternative to CBTs in the existing arsenal of trade instruments, and whether or not this alternative would be more costly than CBTs. Indeed, there are available instruments: anti-dumping,

anti-subsidy or safeguard procedures could easily be adapted to cover ‘unfair’ competition for climate or water reasons. And for the protectionist interests, these instruments have a huge advantage over CBTs: they can be triggered by individual complaining firms, and can thus be tailor-made to the precise needs of the plaintiffs. By contrast, CBTs have to be calculated for a product resulting from different production processes operated by a (possibly high) number of different firms, and will thus require numerous negotiations and compromises among the many vested interests involved. In short, the (much) lower discriminatory capacity of the CBTs compared to the anti-dumping, anti-subsidy and safeguard instruments is a good incentive for the trade community to accept CBTs (conditional to the fact that anti-dumping, anti-subsidy and safeguard measures based on environmental concerns could not be imposed on top of CBTs).

The climate and water communities fear that the NT principle will excessively limit the sovereignty of a country willing to price or tax CO<sub>2</sub> emissions and water use, and that CBTs will only partially solve the problem of ‘leakage’. However, such fears seem to have recently receded under various forces.

- The prevalent notion of a world tax/price for CO<sub>2</sub> in the climate community logically implies that, for a given product, a ton of CO<sub>2</sub> in a foreign country should be treated the same way as a ton of CO<sub>2</sub> in the domestic economy—and therefore that these two tons should not be subjected to some kind of discrimination. This evolution is reinforced by two factors: the growing realization that the burden sharing of the ‘past’ emissions should be addressed by international transfers (not by trade rules); and the increasing recognition that the values attached to CO<sub>2</sub> emissions in industrial and emerging economies appear much closer when one looks to the actions taken by these countries rather than to their rhetoric.
- In the water case, the fact that water is a local public good has two opposite effects. On the one hand, it makes it easier to solve the property rights allocation problem and to price/tax water in a suitable way. On the other hand, it makes it more difficult for the water community to realize that all these local taxes/prices will be subjected to a dynamic process of convergence towards some ‘world’ tax/price for a drop of water from any origin (adjusting for the ‘quality’ of the water). This is because water is an input to farm products that are interconnected by world trade.
- Last but not least, both the climate and water communities are realizing that governments are not ‘benevolent despots’ capable of making

the right decisions from a collective perspective when there is strong opposition from vested interests. The trade community has had ample time to realize how governments are often unable to discipline such interests by exerting their ‘internal’ sovereignty. The history of trade policies is an endless tale of governments trapped by their domestic interests, unable to balance the various domestic interests in a fair way under the pressure of aggressive (even if tiny) lobbies. Recent years have shown similar limitations in the climate and water cases. COP 15 has been a painful wake up call for the climate community, and a similar lesson can be drawn by the water community from the recent droughts in Europe.

#### 4.1.5. Summary of the MFN-NT ‘package deal’

To conclude, pillar 1 could witness a major deal on setting the rules: the emerging economies have a strong interest in being protected by the MFN principle, while the industrial countries have a strong interest in obtaining the NT principle—meaning that the global climate and water regimes should be built on the same non-discrimination principle as the trade regime.

That said, building trust among the three communities on the NT principle emerges as a critical issue for the coming years. It will benefit from the ongoing evolutions in the thinking of the three communities regarding the benefits and costs of the NT principle. It could also immensely benefit from careful work on the topics and provisions under pillar 2.

### 4.2. Pillar 2: Adjusting the other WTO rules when necessary

The fact that the non-discrimination principle offers a robust framework to be shared by the international climate, trade and water regimes does not mean that the other WTO rules should share the same fate. The public good feature of climate and water issues is likely to require some notable adjustments of certain WTO rules. What follows focuses on several key candidates for such adjustments: tariffs, subsidies, export measures and technical barriers to trade. This is not an exhaustive list. For instance, it leaves aside the core issue of ‘like products’ because this is thoroughly examined by Horn and Mavroidis (2011), and it does not examine independently the case of public procurement (most of the points developed below for subsidies could be used for public procurement).

Pillar 2 issues deserve a preliminary remark. They should *not* be conceived as requiring the

design of a complete international climate or water regime from Day One. Of course, it could be that, as in 1947-1948 for the trade regime, all countries would be able to agree on a fully-fledged international climate or water regime in one international conference.

But, it may well be the case that the world is not ready for such a bold move. After all, GATT benefited from a century of international trade treaties promoting trade liberalization, starting with the 1860 Free Trade Treaty between France and the United Kingdom. There is no equivalent for the climate and water cases. It therefore seems more plausible that building the international climate or water regime would require a sequence of agreements, an evolution that better fits the recent history of the international environmental treaties (Barrett, 2011). It could thus be the case that countries would first agree, say, on a code on subsidies in the climate or water regime, then on a code on export taxes, etc. All these steps will require building increasing trust and confidence among the three communities. Note that, even from this perspective, the world trade regime remains interesting not so much because it provides useful references (provisions to adopt or to adjust) but because it gives a broad sense of the global framework that should ultimately be achieved.

#### 4.2.1. Tariffs and CBTs

The GATT text does not define a ‘tariff’. Only recent WTO documents have paid some attention to this issue because, during the Uruguay Round, it was realized that such a missing definition was costly (particularly in the context of farm liberalization) for the following reason. Tariffs can be expressed in two main ways: in *ad valorem* terms (as a percentage of the price of the product free of duty) or in specific terms (in euros, dollars, etc. per physical unit of the product). These two definitions have a markedly different impact on the effective level of protection: more precisely, specific tariffs (frequent in agriculture) potentially have a much larger protectionist impact than *ad valorem* tariffs—hence the will to shift to *ad valorem* tariffs since the Uruguay Round.

The climate and water communities should thus be careful when introducing the notion of CBTs, which is so critical for a mutually acceptable use of the NT principle: too loose a definition of CBTs would favour industrial countries while too strict a definition would favour emerging economies. More precisely, defining CBTs would require some agreement on at least two parameters.

- First is whether CBTs should be defined in *ad valorem* or specific terms. As already argued (Messerlin, 2010), the definition in *ad valorem* terms



offers the best balance between the opposite interests of the industrial countries and of the emerging and developing countries. This would not be an easy decision to make since the domestic climate or water regimes tend to use prices or taxes that are expressed in specific terms.

- The other key parameter is the ‘base’ on which CBTs should be calculated. Today, trade flows are routinely expressed in ‘gross’ terms, an inaccurate measure as illustrated by the well known iPod case. When firms export the iPods that they assemble in China, tariffs are levied on the gross value of the iPods, which is the sum of the value of the components made in other countries (Japan, Korea, the US, etc.) and of the value added created in China where these components are assembled. It is estimated that the gross (commercial) value of an iPod in 2010 (290 US dollars) can be decomposed into 275 US dollars of components produced out of China and 15 US dollars of value added created in China (Jara 2010). Using gross trade flows has thus two clear flaws. First, it heavily distorts the world trade picture—in the iPod case, it massively overstates China’s exports of goods. Second, it makes it difficult for observers to realize that taxing imports of iPods from China has a detrimental effect on exports of iPod components from Japan, Korea and the US, hence on these economies.

These conclusions are key to this paper because gross trade flows are equally inappropriate from a climate (or water) perspective. CBTs based on gross trade flows would tax value added (hence CO<sub>2</sub> emissions) created in Japan, Korea and the US when producing components as if it were CO<sub>2</sub> emissions produced in China. Rather, CBTs should focus on the CO<sub>2</sub> emitted in China. Consequently, they should be levied only on the value added created in China when assembling the iPod components into the final product. This approach is the only one that makes sense from a climate perspective—particularly if, as is often the case, assembly is not the most CO<sub>2</sub>-intensive activity.

The world climate or water regime should thus include provisions (or a code if a piecemeal approach is adopted for building the climate/water regimes) that would clarify the definition of the CBTs and the base on which they will be calculated. It seems logical that these provisions would be designed at the same time as the adoption of the MFN/NT principles, since they play such a key role in the way the NT principle will be used. Note in passing that the trade community should welcome such provisions in the climate/water regimes since they would help to clarify tariffs, and hence

to improve the quality of the existing and future tariff commitments.

Another interesting aspect of a trust-building exercise among the three communities is the meaning of ‘applied’ and ‘bound’ tariffs. In the trade regime, negotiations deal only with bound tariffs (those that a country is committed to enforcing after GATT/WTO negotiations, with the need to compensate or the risk of being subjected to retaliations in case of non-compliance). Under GATT/WTO rules, a country is free to implement ‘applied’ tariffs lower than its bound tariffs. But, such applied tariffs play no role in WTO tariff negotiations: they are usually decided after such negotiations (often unilaterally) and they have few connections with them.

In the climate case, it makes sense to combine these two notions, as indeed has already been done by several countries (such as Australia) since COP 15. A country could announce unilateral ‘bound’ cuts in CO<sub>2</sub> emissions as the minimal cuts in CO<sub>2</sub>-emissions that the country is legally committed to enforcing independently of the outcome of the ongoing or future negotiations. At the same time, the country could also announce its readiness to ‘apply’ more ambitious cuts if the ongoing negotiations happen to be successful. And it should specify the conditions for enforcing these ‘applied’ cuts (how long it will enforce them without a successful outcome of the negotiations, how it will come back to the initial situation in case of failure of the negotiations, etc.). Such a feature would be very useful for the world climate regime, particularly if there is a sense of urgency (a condition that does not exist in the trade case). A similar approach could be envisaged in the water case in terms of improved pricing of water resources. For instance, a country could table bound and applied shares of its water resources that it will subject to a pricing/tax system.

#### 4.2.2. Subsidies: ‘good’ and ‘bad’

The current WTO rules on subsidies date back from the Uruguay Round, that is, from a time when it was felt necessary to impose strict disciplines on subsidies. This strict approach was generated by the repeated experiences of massive and utterly inefficient subsidies during the two or three decades before the Uruguay Round (1970s and 1980s). However, the Uruguay Round text included some exceptions to this strict discipline, the so-called ‘non-actionable’ subsidies used for research and development, environmental protection and regional development. The window for these exceptions was limited to five years (ending in December 1999) and was not extended. The deadlock of the Doha Round makes it impossible

to review this situation, as requested by the developing countries at the beginning of the Doha Round.

The climate/water communities have a clear interest in allowing ‘good’ subsidies, that is, those necessary for ensuring the emergence of enough renewable and clean energies and sustainable water use. For instance, Deutsche Bank has recently estimated at 500 billion euros per year the amount of investments in all forms of water (including drinking water and sanitation), and a substantial share of these huge investments is likely to be delivered with some kind of subsidization linked to public-private partnerships (Deutsche Bank Research 2011). Such subsidies are candidates for being examined as ‘non-actionable’ in the WTO context.

Would these exceptions pose problems for the trade community? No, not if they are carefully crafted—that is, if they are exclusively devoted to climate/water management and if they are granted in a non-discriminatory way ensuring the choice of the most efficient firms or operators for achieving the targeted goal(s).

Once again, the key point is that such conditions are equally crucial for the climate or water communities. The recent Australian Productivity Commission’s (2011) estimates of the implicit abatement subsidies per ton of CO<sub>2</sub> suggest huge differences among alternative technologies, with relatively low estimates for the ‘emission trading schemes’, (several times) higher estimates for large-scale renewables (biomass, wind, etc.) and considerably (up to one hundred times) higher estimates for solar panels. And for the same technology, these estimates also vary enormously among the countries—for instance, in the proportion of one to six for solar panels between China or Japan (the least subsidized solar panels) and Australia, Germany or Korea (the most subsidized panels).

In such a context, talking again about ‘industrial policy’ (Aghion et al., 2011) is very counter-productive. None of the three communities should be interested in an industrial policy. There are already illustrations of costly mistakes where the climate subsidies turn out to be industrial (or farm) subsidies, such as those granted to first-generation biofuels (in the EU and the US) or to certain solar panels (Germany). Rather, the climate, trade and water communities should look for subsidies well targeted to specific climate/water goals. This will not be an easy task. Arrow et al. (2008) provide a non-exhaustive list of key criteria to be met: stable commitments over a long period of time; a wide coverage, including the fundamental capacity to perform research in the future (for example, education and laboratory capacities); tolerance

of failures that could provide valuable information and institutions (such as independent agencies, peer reviews, multi-year appropriations, payments based on progress and outputs rather than cost recovery) that minimize the risk of capture of research and development subsidies by public or private vested interests. Striking the right balance would greatly benefit from good cooperation between the three communities while, absent such cooperation, vested interests will be able to distort their subsidies in their favour.

That said, it is important to stress that ‘bad’ subsidies do exist in the context of the climate/water regimes. In such a case, the WTO strict disciplines on subsidies with an impact on trade remain very useful, and they should be adopted by the climate/water communities without hesitation.

Indeed, there is a long list of subsidies that have been able to survive the WTO ban and that the climate, trade and water communities should fight. After all, eliminating current economically unsound policies may be among the best solutions to the current climate/water challenges. The lavish US and EU farm subsidies are among the prime targets. For instance, it has been estimated that cutting EU farm subsidies would expand the land devoted to forest by 7 percent—a substantial contribution to climate mitigation (Jomini et al., 2009). Similar actions could be taken against the huge subsidies to fossil fuels (Global Subsidies Initiative, 2010) or against those inducing farmers to over-use water.

Disciplines on subsidies raise the important corollary question of the anti-subsidy measures (the measures to be taken if a country subsidizes unduly) to be allowed by the international climate/water regimes. As is well known, the anti-subsidy rules existing in the world trade regime are unsatisfactory. They do not require the subsidizing country to eliminate its subsidies (as EU law does). Rather, they allow importing countries to impose anti-subsidy duties on the subsidized products from trading partners. It happens that the procedures for determining these anti-subsidy measures are biased, and grant excessive protection to the domestic producers of the importing countries. Such an outcome is clearly not desirable for the trade community. But nor is it desirable for the climate/water communities. For instance, such anti-subsidy measures fail to reduce (or reduce insufficiently) the CO<sub>2</sub> emissions or the water use of the subsidizing country simply because they leave a lot of export markets—those with no domestic competitors induced to push for anti-subsidy measures—open to the goods benefiting from subsidized CO<sub>2</sub> emissions or water use. As a result, the climate/water communities should make serious

efforts to draft better anti-subsidy instruments than those in the GATT text—another illustration of how an appropriate design of the anti-subsidy rules in the climate/water context could help the trade community to review its own approach.

#### 4.2.3. Export measures

The current world trade regime on export measures is inconsistent: it bans export quantitative restrictions (export quotas) but it allows export taxes which have the same effect of reducing exports as export quotas. This loophole is undesirable from the trade perspective, as illustrated by two cases. The export taxes adopted by several countries that are large exporters of farm products (such as Argentina for soybean, India for rice and Russia for wheat) may have improved the terms of trade of these exporting countries, but at the cost of amplifying the 2007-2008 food crisis by artificially raising food prices with severe adverse effects on the poorest importing countries. The export taxes imposed by China on some CO<sub>2</sub>-intensive products may have pre-empted the risk of carbon tariffs being imposed by industrial countries and shifted the potential tariff revenues to the Chinese government, but with similar adverse effects on the rest of the world.

In all these cases, these loopholes are unlikely to have a desirable impact from the climate or water perspective because cutting exports is far from reducing domestic production for several reasons—they cannot therefore be considered as satisfactory second-best instruments (cutting CO<sub>2</sub>-emissions or water over-use). First, an export tax on a good is an implicit subsidy to the domestic consumption of this good. For instance, the above-mentioned export taxes are implicit subsidies to water use and CO<sub>2</sub> emissions embedded in the products domestically consumed in the exporting country. Second, the impact on production is further reduced if the export taxes are limited to the exports to the countries that could impose carbon tariffs (in this case, they are implicit subsidies to the consumption of the products concerned by the countries that are not seen as likely to impose carbon tariffs). Lastly, the impact on production is even more negligible if products can be stocked (as is often the case for farm products) with all the risks of waste associated with food stocks.

In short, adopting the rule of banning export quotas and taxes would make a lot of sense from a climate/water perspective. The case for such a ban is reinforced if there is the full set of appropriate domestic policies directly targeting the desired reduction of CO<sub>2</sub>-emissions and of water use. Finally, once again, the adoption of a ban on export taxes by the climate/water communities would help the trade community to establish the similar, much

needed discipline on export taxes in the GATT/WTO text.

The case of a ban on export taxes has a final interesting dimension: it involves PTAs in addition to the GATT/WTO text. Recent PTAs have often included such bans (this is one of the rare legally-binding rules that PTAs have been able to provide on top of GATT/WTO rules). However, bilateral commitments in this matter may make the rest of the world worse off if a PTA member imposes higher taxes on its exports to non-PTA members in order to counter-balance its inability to tax its exports to its PTA partner(s) by further cutting its exports to its non-PTA partners. Once again, the climate, trade and water communities have good reasons to work together to make the ban on export taxes a multilateral discipline.

#### 4.2.4. Sectorals and Technical Barriers to Trade

As suggested by Barrett (2011), an interesting option for building an international climate regime would be to break up the big climate problem into smaller agreements. (To our knowledge, there is no equivalent proposal in the water case, although this option also looks promising in this context.) There are already agreements of this type (seals, tunas, ozone depleting chemical substances, air transport fuel, and marine pollution from ships), and some of them, such as the Montreal Protocol (on ozone depleting chemical substances), have been successful. Barrett suggests five additional possible sectoral agreements: HFCs, fuel for aircrafts, iron and steel, automobile emissions, and electricity generation.

All these agreements share three features. First, they are ‘sectorals’ targeting well-defined sectors. Second, they boil down to the adoption of common technical norms at the world level. Third, they may include some trade ban, including with non-compliant countries. What follows analyzes these features from the trade community perspective.

The trade community may feel somewhat ambivalent about ‘sectorals’ because it tends to think in terms of the whole ‘universe’ of products and services in trade matters. But, the world trade regime itself is based on several layers of successive texts devoted to goods (GATT 1948), public procurement (Tokyo Code 1981), services (GATS 1995) and trade-related intellectual property rights (TRIPs 1995), to mention the most important ones. Indeed, such a piecemeal approach will continue and prosper in services, with the breaking up of the many different regulatory problems raised by services liberalization into sectoral agreements as already observed (financial services, telecommunications, etc.).



A substantial source of the discomfort of the trade community vis-à-vis sectorals comes from the bad memory of sectorals that have fragmented the main GATT/WTO trade regime and have been hard to re-integrate into it. It took 50 years to remove (still very imperfectly) the waiver on agriculture (1955), the massive *de facto* sectoral exceptions in textiles and clothing (with substantial remnants in provisions included in PTAs), the *de facto* exceptions on steel and iron (which have been eroded by market changes and international investment, but which could be easily reignited) and GATT Article IV on special provisions for cinematograph films (which is still untouched).

Would the climate/water sectorals generate a similar danger? The risk that this would be the case depends on two factors that are working in opposite directions.

On the one hand, climate sectorals would have a feature that the trade community should perceive as very positive: they establish common technical norms. In other words, they can radically eliminate one of the most contentious, hardest to crack problems in today's world trade, that is, technical barriers to trade (TBT). The only TBT they could generate is that the universal norms they impose may eliminate potential producers too poor to adjust to these norms. For instance, developing countries would be unable to afford the costs of introducing the Hlsarna process in iron and steel, or to sustain air-carriers requiring airplanes new enough to comply with the new fuel norms, etc. As stressed by Barrett, such a problem can be largely solved if the sectorals grant enough time to the developing countries for adjusting to the new norms or if they can be made to qualify for financing under the Clean Development Mechanism or its successor.

On the other hand, climate sectorals may include trade restrictions conceived as a way to enforce participation in the agreement. For instance, the Montreal Protocol has provisions banning imports and exports of the ozone-depleting substances at stake between parties and non-parties. Such provisions are likely to fuel concerns from the trade community. In the Montreal Protocol case, this provision was a success in the sense that it ensured full participation in the Protocol without having been used once. However, similar trade bans that have been included in other agreements did not ensure the success of the agreements (an undesirable result for the environmental community), while they risked disrupting trade flows (an undesirable result for the trade community).

The threat of trade bans is thus a feature that deserves careful attention. At first glance, there are two main cases.

- When the production of the products at stake is relatively concentrated (as in the ozone case, where the EU was by far the largest exporter of the banned chemicals) and/or when it is based on networks (as in airlines or shipping lines), trade bans may represent a threat credible enough to ensure full participation without needing to be actually used. In other words, the risk raised by trade bans may be acceptable in such cases.
- By contrast, when the production is widely dispersed, the risk of trade bans with a negative impact on world trade looks high, while their capacity to ensure full participation appears limited. In such cases, there is a need to consider the value of the solutions in the absence of a trade ban. Fisheries may illustrate this second group of cases. A solution to the unsuccessful trade bans in past fisheries agreements may be to specify the mechanism that each country would agree to implement for ensuring sustainable fisheries. For instance, such a mechanism could consist in a national catch quota to be split among domestic fishermen (individual licences), with these individual licences being tradable among domestic fishermen alone, or (probably better from an economic perspective, if not easier from a political point of view) among all the fishermen of the signatory countries. (Indeed, the EU and the US have enforced similar mechanisms for ozone depleting chemicals.) If such a mechanism is expected to improve the efficiency of the signatories' fishing industries through consolidation (as was the case in Iceland) compared to the fishing industries in the countries reluctant to sign, then it may represent a credible threat to the latter countries, and may therefore contribute to ensuring their participation.

Once again, all these cases will represent serious challenges for trust-building exercises among the three communities. Such exercises should not be limited to the time of drafting the agreements. They should be pursued with an elaborate (possibly pre-defined) system of review of the agreements in order to assess their quality (whether these agreements have achieved their climate or water targets at minimal costs in terms of trade, hence of growth) and their fairness (whether the initial agreement has not implicitly favoured the initial signatories too much for some unforeseen reason).

### 4.3. Pillar 3: Pricing provisions

As climate/water issues are characterized by the absence of a simple tax/pricing mechanism, the climate/water communities often tend to promote

international management in terms of quantities rather than management based on prices or taxes. For instance, it is argued that the limited availability of freshwater in the world calls for the imposition of a ceiling on humankind’s water footprint with a ‘fair’ sharing of the global water stock among countries. This could be achieved by creating an international water footprint permit system making it possible to issue ‘permits’ per country (Hoekstra, 2010).

The trade community has a long history of failure for such quota-based management dealing with a broad range of products (for instance, water is a component of a huge array of food products). This failure has two main sources. The first is political. It is hard to imagine that water-rich countries would surrender their sovereignty on their ‘excess’ domestic stocks of water. As a result, such broad initiatives risk being quickly fragmented into a complex web of initiatives with a much narrower focus in terms of products, ending up in a chaotic system (as best illustrated by the textile case). The second source is the allocation process for the ‘permits’. The half century-long experience of the trade community is that quotas (permits) are the most difficult instrument to handle for allocating scarcity in an international environment because they often end up as an unfair and perverse tool. Unfair because they tend to favour the countries that were the most powerful at the time of the creation of the allocating device (Whalley, 2011). Perverse because they create rents that give their initial beneficiaries massive leverage (power and money) for keeping the initial scheme unchanged while the world is changing.

As a result, it may then be attractive to include in the international climate or water regimes provisions providing internationally recognized pricing guidelines ensuring efficient climate or water management at the local and national level in a broad ‘bottom up’ approach. Such provisions would not be easy to design because they are likely to trigger opposition from the CO<sub>2</sub>-intensive or water-intensive vested interests. For instance, the water community is facing huge opposition to “pay for water” (Catley-Carlson, 2010). This opposition is declining among developed country households, which are increasingly conscious of the need to price/tax water and which then focus instead on the question of whether the existing pricing system is well conceived and/or implemented (rather than on the principle to pay as such). But, the fact remains that a strong exception to this positive evolution comes from the farmers who consume 70-80 per cent of freshwater.

Such pricing guidelines will be hard to negotiate from scratch. They are more likely to emerge

from successful national or regional schemes. For instance, the World Bank or key regional banks (Asian Development Bank, etc.) could more systematically lay down the basic guidelines they use for their own operations, creating healthy competition among the various alternative pricing guidelines. Such international guidelines on pricing in the global climate and water regimes would not be inconsistent with the WTO, as long as they do not create discrimination among countries, a condition to which the climate or water communities have no reason to object, to the extent that it is very likely that it will enhance efficiency to achieve the desired objectives.

## 5. CONCLUDING REMARKS

The current international situation has more difficulties delivering international agreements than the one prevailing until the mid-1990s. The 40 years following the Second World War were characterized by problems that were easier to solve and a cosier atmosphere than today. The economic problems were primarily limited to progressive market opening that could be largely handled by market forces; the US was an open-minded hegemon capable of limiting the free-riding behaviour of the small number of countries having some weight in the world trade system; the world economic fora were in fact homogeneous, since they were largely limited to rich countries; growth occurred at a sustainable pace for natural resources; last but not least, the “Cold War” was increasingly a *de facto* freeze in the geo-political world situation.

All this has evaporated, and today’s world situation is characterized by many more volatile and unknown factors. Some key economic problems—climate and water being the most prominent—have a much heavier dose of free-riding, and therefore require more collective action. There is no benevolent hegemon on the horizon, and there are at least six or seven existing or emerging heavyweight countries, resulting in a multi-polar world. Moreover, the growth of the vast emerging and developing economies is taking place at such a rapid pace that it imposes considerable stress on natural resources under the currently available technologies. Last but not least, there is a huge ongoing tectonic shift in the geo-political world situation (World Bank (2011)). In short, even though Whalley (2011) argues that the expanded bargaining set afforded by greater interaction between countries might lead to more positive outcomes for the provision of public goods, the economic problems tend to become more difficult to solve while the political environment is less prone to collective action.

This paper has argued that such circumstances call for a determined renunciation of their respective prejudices by the three main communities involved—climate, trade and water—and for an urgent trust-building exercise among them. Fortunately, as discussed here, there is a solid basis for a profound change of approach, which is to be found in the basic similarities of the problem faced by the three communities, and of their friends and foes.

The first consequence of these similarities is that they require a comparable structure for the three international regimes. This common structure is limited to the non-discrimination principle, which emerges as the necessary common cornerstone for the three international regimes. This paper makes an effort to go further than this first step by suggesting joint actions that would fulfil the needs of the three communities. The list of such common actions is already substantial,

reflecting how deep the similarities are. It would include: (i) the definition of tariffs and carbon border taxes; (ii) the definition of the necessary exceptions to the current WTO ban on subsidies for the ‘good’ subsidies required by climate or water policies; (iii) the upholding of WTO bans on the other subsidies; (iv) the common fight against the existing very costly ‘bad’ subsidies (agricultural subsidies, biofuels, fossil fuels, etc.); (v) a better definition of anti-subsidy measures and (vi) more generally of domestic adjustment policies; and (vii) the development of an approach in terms of sectoral agreements that breaks up into solvable questions the broad problem of climate and water at a minimum cost for growth. Of course, this ‘positive’ view of the relations between the three communities requires a sense of modesty among the members of each community as a prerequisite for trust building. ■

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