# International Trade Rules for Promoting Global Water-use Efficiency

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## Introduction

Water has been identified as the top concern in terms of impact in the Global Risks 2015 report recently issued by the World Economic Forum. The US National Intelligence Council considers the nexus of food, water, energy and climate change as one of four overarching megatrends shaping the world by 2030.

Water use is growing at twice the pace of population growth (Kirsty, 2011) and, as a result, water requirements are expected to outgrow sustainable water supplies by 40 per cent over the next fifteen years. In fact, in just ten years, two-thirds of the world population may be experiencing water “stress.”

Not only water shortages are becoming acute but we are also wasting more water. Few countries price water appropriately and there is little to no transparency about subsidies given to the sector. Wrong incentives and policies are leading to unsustainable management of a scarce and precious resource.

In order to cope with this challenge, various national and international agencies are exploring options and devising strategies. This paper aims to explore if existing international trade rules can effectively promote efficient water use and, if not, could World Trade Organization members negotiate new rules for this purpose.

Some 70 per cent of the fresh water used is for agricultural purposes and evidence suggests that removing water subsidies could reduce its use by 20 to 30 per cent. The primary focus of this paper is on rules, which may be applicable to disciplining subsidies given to water used in irrigation.

Not discussed here is trade in water-related services as that is being covered in another paper in this book. Also trade in bottled water is not covered as the current WTO rules adequately deal with it, and which, in any case, is insignificant compared to the total use of water.

This paper consists of two parts, which cover WTO rules on the supply side and those applicable on the demand side. The first part focuses on irrigation subsidies which are responsible for most of the fresh water wastages while the second part discusses virtual water trade (trade in embedded or embodied water) and measuring water footprints and the role that an increased knowledge in this field could play in making WTO rules more effective for promoting sustainable use of water[[2]](#footnote-2).

## Supply Side issues

There is no specific WTO or any other multilateral environmental agreement (MEA) relating to trade-related aspects of water, though there are some general rules which can also apply to water.

The main issue on the supply side is subsidies given to irrigation water, which results in under-pricing and encouraging the overuse of fertilizers and inefficient use of water.

There are two WTO agreements which impose restrictions on agricultural subsidies: (1) the Subsidies and Countervailing Measures (SCM) Agreement and (2) the Agreement on Agriculture (AoA). While the SCM agreement applies to all subsidies and generally forbids both export subsidies and other subsidies that can be shown to have trade-distorting effects, the AoA is more specific for agricultural subsidies.

The objective of the AoA, as given in its preamble, is “to establish a fair and market-oriented agricultural trading system…” and to “provide for substantial progressive reductions in agricultural support and protection sustained over an agreed period of time, resulting in correcting and preventing restrictions and distortions in world agricultural markets”.

The AoA distinguishes between two types of subsidies: (1) "domestic support" and (2) "export subsidies." Domestic support subsidies are categorized in three "boxes" - the Amber Box, the Blue Box, and the Green Box. Amber box is used for all domestic support measures considered to distort production and trade. These subsidies must not exceed 5% of agricultural production for developed countries and 10% for developing countries. Blue box subsidies can also be considered amber box subsidies but they require farmers to limit production and must be made on fixed areas and yields.

Green Box covers subsidies that have no, or at most minimal, trade distorting effect on production. Therefore, there are no spending limits on these subsidies.

Although a majority of WTO members do not notify any irrigation subsidies, about a third who do so mostly list them under the Green Box. One of the reasons is that the governmental services programs such as infrastructural services including water supply facilities are specially listed in the Green Box.

Strictly speaking, it is not correct to do so as the Green Box is meant for government service programmes, such as research, disease control, infrastructural services, including roads and other means of transport, market and port facilities, etc. Although the Green Box does include undefined water supply facilities, what is clearly meant by that is irrigation infrastructure and not subsidies for inputs or operating costs. Subsidies for input of irrigation water do not qualify as having “no, or at most minimal, trade-distorting effects or effects on production.” Sheltering irrigation subsidies under Green Box is against the overall concept of this scheme.

There are many studies to show that most irrigation subsidies are trade distorting. For example, according to a report published in the New York Times (Nixon, 2013), “in the United States millions of dollars in farm subsidies for irrigation equipment aimed at water conservation have led to more water use, not less, threatening vulnerable aquifers and streams… water tables have fallen 150 feet in some areas — ranging from 15 per cent to 75 per cent — since the 1950s, scientists say, because the subsidies give farmers the incentive to irrigate more acres of land.”

Similarly the Global Subsidies Initiative (GSI) launched by the International Institute for Sustainable Development (IISD) has been examining issues relating to irrigation subsidies in different countries. Their estimates suggest that in Spain subsidies to irrigated agriculture may be about € I billion per year for the period 1998–2008. Even in low and middle-income countries, there are huge government allocations for agricultural subsidies. In India, irrigation subsidies for 2010-11 were estimated at USD 4.7 billion (Anwarul & Ashok, 2013).

In addition to major irrigation projects, many governments subsidize diesel or electricity for tube-wells to assist resource-poor farmers. In the AoA, such subsidies can be claimed under “development box”, and are permissible for low-income or resource-poor producers in developing countries as these producers are considered to have a relatively marginal impact on markets. However, there are serious concerns about this at the WTO as well as at the national level. Discussions at the WTO are about defining such producers to limit such spending. At the national level,

There is on-going debate about this in the WTO as well as at the national level as to how some reforms could be introduced for limiting such subsidies. At the WTO focus is on defining such producers. One of the options being considered is the area of agricultural holding. At the national level, depletion of ground water and use of higher levels of fertilizer than would occur otherwise, are forcing the pace of reforms.

Besides the AoA, the other major instrument in the WTO toolbox is the Agreement on Subsidies and Countervailing Measures (“SCM Agreement”). In order to understand the applicability of SCM vis-à-vis the AoA, it is important to understand its essential features and the relationship between the two agreements.

The SCM addresses two separate but closely related topics: multilateral disciplines regulating the provision of subsidies, and the use of countervailing measures to offset injury caused by subsidized imports.

Subsidy, as defined in this agreement, is a measure that meets three basic elements: it must be a financial contribution, it must be made by a government or any public body within the territory of a member, and it must confer a benefit. However, even if a measure is a subsidy under the definition of the SCM Agreement, it is not subject to the disciplines of the SCM Agreement unless the concerned subsidy is a specific subsidy.

The SCM Agreement creates two basic categories of subsidies: those that are prohibited, and those that are actionable (i.e., subject to challenge in the WTO or to countervailing measures). If the subsidy is contingent on export performance or upon the use of domestic over imported goods then such subsidies are prohibited.

The other category is actionable subsidies, which are not prohibited but are subject to challenge, either through multilateral dispute settlement or through countervailing action, in the event that they cause adverse effects to the interests of another member. If they cause injury to a domestic industry through subsidized imports, then they are countervailable. If they cause adverse effects (e.g., export displacement) in the market of the subsidizing member or in a third country market, they can serve as the basis for a complaint related to harm to a member's export interests. Finally, there is nullification or impairment of benefits where the improved market access presumed to flow from a bound tariff reduction is undercut by subsidization.

Irrigation subsidies seem to meet the category of actionable subsidies and are thus challengeable either through multilateral dispute settlement or through countervailing action whether they conform to the AoA or not. However, it will require the complaining party to show the existence of a specific subsidy as well as “adverse effects” to its interests. The fact that no one has so far challenged irrigation subsidies shows that most members find it difficult to establish causal link between the subsidy and the factor evidencing serious prejudice. They may also not do it for fear of tit-for-tat action.

## Making WTO Rules more effective

In order to make the current WTO disciplines more relevant and effective to deal with irrigation subsidies, the following steps are being proposed.

The first phase would be to bring more transparency regarding notifying irrigation subsidies. At present, they are not accounted separately but included in the overall figures for agricultural subsidies, some of which can be genuinely regarded as Green Box. This mix makes it difficult to single out irrigation subsidies and apply WTO disciplines.

Another step would be to bring some uniformity in the way irrigation subsidies are calculated and notified to the WTO. Given that measuring subsidies to the irrigation sector is not an easy task, there has been no serious effort to tackle this issue. Recently the IISD has looked into this issue and made some recommendations for quantifying irrigation subsidies. Their methodology seems to be neutral and workable. If used globally, it could substantially improve reporting and making accounting of subsidies more uniform.

Furthermore, there should be closer scrutiny of the notifications submitted to the WTO. The notifications should be up-to-date and harmonized so as to make them comparable.

While bringing more clarity regarding the scope of Green Box and ensuring better measurement and timely reporting of irrigation subsidies to the WTO would raise awareness on this issue, there may be a need for tougher disciplines and more cooperative efforts to meet the overall objective of reducing subsidies and thus improve sustainability.

There should also be more clarity about the interpretation of “low-income” or “resource-poor” farmers. This would bring some disciplines for measuring the *de minimus* limit of 10 per cent exemption calculated under Article 6.2 of the AoA.

For this purpose, two areas of negotiations can serve as models. One is the ongoing negotiations on fisheries subsidies and the other is the recently concluded Trade Facilitation Agreement (TFA).

Fisheries subsidies have many parallels with irrigation subsidies. In both cases, there is very poor disclosure and notification of subsidies. Furthermore, it is difficult to find countries that could not be accused of granting subsidies in these two areas thus making it awkward for most governments to point fingers at others for granting such subsidies.

It is, therefore, worth exploring if it is useful to follow the example of fisheries and have a separate agreement on water-related subsidies. Such an effort may not be acceptable to all the members as some may argue that this would not be within the WTO mandate which is concerned with trade-related matters and not sustainability. Furthermore, they could also argue that the WTO would not have the means to undertake this task.

Notwithstanding these concerns, and as a first step, it would be worthwhile for the WTO members to enter into an exploratory phase for possibly looking into clarification and improving WTO disciplines on irrigation subsidies. Such an agreement would enable members to put forward proposals that focus on improving sustainable use of water resources as is currently happening in case of fisheries subsidies. If a multilateral agreement is not considered doable, a plurilateral agreement between reform-minded countries could be negotiated.

The negotiations on fisheries subsidies can also provide guidance as to the kind of issues that are likely to arise and what would be a more acceptable way to proceed.

The TFA can provide guidance as to how a cooperative arrangement for achieving internal reforms can work through multilateral rules and by sharing best international practices. Other features of TFA, which can provide guidance, include having à la carte approach to determining the timing of implementation and joint action by donors to assist developing countries in implementing some of the provisions of the agreement.

No doubt having a water-specific agreement at the WTO would raise more awareness, bring transparency in policies and enable WTO members to peer-review one another’s policies. This would be a major contribution towards achieving one of the strategic objectives of 2013, the International Year of Water Cooperation, which is to “Strengthen international cooperation among institutions, users, social and economic sectors and others in order to reach a consensus on Sustainable Development Goals for the post-2015 era which will effectively address our future water needs (UN General Assembly, 18 August 2014).”

However, since water is not a commodity like most other items traded in international commerce, negotiating an agreement at the WTO would be very challenging and controversial. Civil society, which has strongly opposed including water-related services in the WTO Services negotiations, may oppose stricter disciplines on water use through WTO rules. At various WTO ministerial meetings, civil society slogan has been "Don't let the WTO get hold of our water". Their concern is that in the event of shortages in future, water “will eventually be distributed and sold much like petroleum is today.”

Another impediment may be that the WTO negotiations on new rule making have almost come to a standstill. The only significant agreement on rule making agreed so far relates to trade-facilitation, which was much less controversial. Handling difficult negotiations like that of water may be so daunting that most WTO members would be reluctant to make the effort needed for placing such an item on its agenda.

# Demand side and WTO rules

For the demand side, an important factor for promoting sustainability of water is how it is used for producing goods for exports. For this purpose, understanding the concepts of virtual water and water-footprint are important. These concepts are relatively recent in their origin but have received considerable attention.

Virtual-water content of a product (a commodity, good or service) is "the volume of freshwater used to produce the product, measured at the place where the product was actually produced"[[3]](#footnote-3). This refers to the idea that when goods and services are exchanged, so is virtual water. According to Prof. John A. Allan when a country imports one ton of wheat instead of producing it domestically, it is saving about 1,300 cubic meters of real indigenous water. If this country is water-scarce, the water that is 'saved' can be used towards other ends. If the exporting country is water-scarce, however, it has exported 1,300 cubic meters of virtual water since the real water used to grow the wheat will no longer be available for other purposes.

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Another related notion is of water footprint, which is “a way of assessing not only water use but potential environmental impacts related to water”. Now that the [International Organization for Standardization](http://www.iso.org/iso/home.html)  (ISO, 2014) has developed a [new standard (ISO 14046) which is designed to track how much water is consumed in producing goods and services](http://www.iso.org/iso/home/news_index/news_archive/news.htm?Refid=Ref1760), this concept perhaps will become as significant for estimating the impact of water-related activities as “carbon footprint” is used for [climate change](http://www.guardian.co.uk/environment/2010/dec/21/what-is-climate-change). Already businesses are using water foot-printing to improve water efficiency in their supply chains.

The scope of this paper does not cover the pros and cons of using water footprint or virtual water but only discusses them as they would relate to the WTO rules.

Despite the popular misperception in some circles, it is generally agreed that there is nothing in the WTO rules that restricts countries from pursuing legitimate environmental and sustainable development goals so long they are not resulting in any arbitrary or unjustifiable discrimination, or creating disguised restrictions on trade.

The rules most often used by WTO members are the WTO Agreement on Technical Barriers to Trade (TBT) and GATT Article XX on General Exceptions. The relevance of TBT agreement is due to the fact that it provides a balance of rights and obligations for both labelling programmes and technical regulations.

While using the labelling schemes, the difficulty arises if labels are linked to processes and production methods (PPMs). If the production method leaves a residue in the final product, it can be identified as to how it was produced. For example, if there is a pesticide residue in the imported rice, it is easy to test it and have a standard, which lays down the minimum residues. Thus import could be denied or a label could indicate this fact for a consumer to decide whether to buy such a product.

On the other hand, if rice is produced through flooding or another technique which saves substantial water, it is difficult to determine the production process at the import stage. For example, the International Rice Research Institute (IRRI) has developed an irrigation technique called alternate wetting and drying (AWD) that can cut down water use in producing rice by 25 per cent (IRRI, 2014). IRRI claims that by using this technique, it would take 1500 litters of water per kilogram of rice as compared to normal usage of 2000 kg. Similarly drip irrigation can save 40 to 50 per cent of water for many crops.

If a country introduces a labelling scheme that requires it to indicate whether the rice is produced through AWD or through the traditional technique, it is likely to run the risk of being non-complaint with WTO rules. Furthermore, such differentiation could also be used for protectionist purposes or enforcing a country’s own standards and production methods on others. This may also make it difficult for developing countries to compete in some cases. They may not be able to meet the standards developed and applied by more advanced countries. It would therefore be difficult for developing countries to accept such labelling schemes.

However, there are WTO compliant ways for making PPM more acceptable. WTO law, under the so-called "Enabling Clause", allows for an exception to the WTO "most-favoured nation" principle (i.e. equal treatment should be accorded to all WTO Members). Currently many developed countries have schemes for allowing tariff preferences for products from developing countries, which meet certain specified criteria. For example, EU’s GSP Plus scheme allows duty free access for countries, which ratify and implement international conventions relating to human and labour rights, environment and good governance. Such schemes could be used as incentives for making PPM distinctions more acceptable.

The other WTO rule, which is sometime invoked for keeping out environmental unfriendly products, is GATT Articles XX. Under the exceptions allowed in this article, WTO members can adopt measures for the conservation of exhaustible natural resources. However, such measures would be extreme for enforcing PPM standards and are not likely to pass the WTO test. Any such measures have to maintain a balance between market access obligations and the right of members to invoke the environmental justifications. Invoking GATT Article XX provisions for PPM will likely result in undoing market access commitments and thus disturbing the balance between the market access commitments and environmental obligations.

To sum up, there are provisions in the WTO rules for better managing water. However, they are not invoked and currently there is no transparency for peer reviewing policies of member states in this important area. The WTO can play a more significant role in preventing wastages of water and closing the gap between its availability and requirements. WTO rules could provide incentives to member countries to adopt more environmental friendly ways for using water. Therefore, there may be a need to explore what further changes to the WTO rules and practices could be made so that trade rules can play their due role in overcoming the future water-shortages.

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1. The author is a Senior Fellow at the International Institute for Sustainable Development, Geneva [↑](#footnote-ref-1)
2. "For a more exhaustive discussion on the existing WTO rules, please see Jackson, L., et al paper "on*Integrated Water Resources Management in the 21st Century."*This paper builds on those ideas and is meant to suggest the way forward for making the existing rules more effective." [↑](#footnote-ref-2)
3. [↑](#footnote-ref-3)