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Cluster 2: Development Governance

International Trade and Food Security: Can Agrobiodiversity Reconcile Both?

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ABSTRACT

This paper focuses on how economic dynamics regarding global markets and international trade regulations affect food security, with a specific focus on agrobiodiversity, mainly by identifying major gaps in existing international reports. The question of how the concept of food security has evolved and how it has been addressed and analyzed at the international level by the Food and Agriculture Organization (FAO) and the World Trade Organization (WTO) will first be explained, followed by argument on how the lack of an internationally coordinated response to address the economic impacts on food insecurity has led to market disruptions and price volatility. This paper argues that global economic governance should focus on tackling these issues through international trade policies aimed at enhancing agrobiodiversity, which would in turn enhance food security, especially for those countries where people in demand of food is not particularly solvent.

Issues that are clearly linked with food security, namely global governance, political economy, and agrobiodiversity, will be addressed here. Food security is also strongly linked with other thematic areas, including climate change, rural development, sustainable land use, aid effectiveness, and health. It is difficult to understand the international response to global food security as an isolated issue; we must see it as part of the larger picture of the global development framework, and analyze it along with other on-going international processes.

KEYWORDS: *International trade, food security, agrobiodiversity, economic governance, World Trade Organization*

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I: GLOBAL FOOD SECURITY GOVERNANCE: A FAILED ENTERPRISE

Concepts of food security have evolved in the last thirty years to reflect changes in official policy thinking (FAO, 2003; Heidhues et al., 2004). The FAO (1983) and the World Bank's (1986) definitions have reflected these changes, complemented by the work of academics, for example Amartya Sen's theory of famine (1981). The World Food Summit's widely accepted 1996 definition now encompasses four dimensions: food availability, access, utilization, and stability (FAO, 2008):

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”

(World Food Summit, 1996)

The term ‘security’ itself has also undergone constant evolution. Historically, the concept of security has been defined primarily in military terms; it was restricted to the issues related to armed conflicts the major threat to human safety. Today, however, climate unpredictability, water scarcity, spreading hunger, and failing states are the new threats to survival (Brown, 2012), and as such, increasingly considered security issues as well. Food has ceased to be in the sole hands of agricultural departments, and has turned into a matter of international and national security. Today, it seems one of the major challenges for governments is how to adjust national fiscal priorities in order to match these new dangers.

At the same time, the system of food security governance has become increasingly complex. For most of the 20th century, food governance focused mainly on issues of agricultural production. Today, other issues such as access, benefit-sharing, and ecological concerns are understood to be equally relevant. Global governance needs to consider not only how food is produced but must also include the entire food chain – what has been called ‘from fertilizer to fork’ (Vermeulen, 2012): how it is processed, distributed, and consumed. Food governance has become a complex system of often overlapping or contradictory policies and regulations, obscured by unwritten rules and practices that are not supervised in any political or institutional administration.

Food security governance is further complicated by a decrease in the importance of the role of states as once uncontested mediators (Cashore, 2002), today substituted by the increasing presence and influence of worldwide actors such as businesses, civil society, and the scientific community.

At the international level, global food governance – partly due to its implications regarding national sovereignty, partly due to a lack of political will – has not been properly addressed. Contentions that international organizations were created from an exclusively Western point of view on one hand, and their lack of adaptive capacity on the other, have led to the progressive stagnation of international negotiations regarding food security. Businesses and transnational corporations have taken the lead in response to this paralysis. It seems clear that the need for a readjustment of international priorities has now become crucial.

Although it is often said that food security begins at home, the need for global food governance was recognized even in the earliest days of the UN, leading to the creation of

FAO in 1945. These last 67 years have seen a massive growth in food quantity and quality, enabling a 40 percent rise in food intake per person for a population that has also increased from 2.5 billion to 7 billion (De Haen, 2010). Despite these figures, nearly 870 million people, or one in eight, were suffering from chronic undernourishment in 2010-2012 (FAO, WFP and IFAD, 2012); it is clear that the extra food has not led to equitable distribution. In spite of the ‘productivist’ argument being still present in the international political debate, it is obvious that quantity is not the issue, but rather getting the existing food to where it is needed.

New and recurrent food crises in the last twenty years have taken place, uncovering inefficiencies (or failure) of the global food governance system. With each food crisis, new institutions have been launched, including the World Food Programme (WFP), the International Fund for Agricultural Development (IFAD), the UN High Level Task Force (HLTF) on the Global Food Security Crisis, and although not directly related, the WTO through its Agriculture Committee and the Doha Development Agenda. Typically, crises have also led to summits and pledges to cut hunger. Today, almost every country subscribes to the global target of halving hunger between 1990 and 2015 (MDG 1). In spite of this, the number of hungry people is rising (FAO, WFP and IFAD, 2012). It was estimated that at least 50 million more people became hungry in the 2008 food crisis - in January 2008, 923 million people were estimated to be hungry (with a daily calorie intake of less than 1,800), and this figure was probably around 980 million a year later (FAO, 2008c). While the reasons for this are numerous and still highly debated, one factor that clearly determines people’s food security is price volatility, especially for net buyers of food. Price spikes in the international food market affect national food prices, and this has a strong impact on food access and availability.

II: FOOD CRISES AND FOOD PRICES, ESTABLISHING A CAUSALITY LINK

If food security encompasses price stability, the on-going food crisis that started in 2008 reveals that international economic institutions have not set in place necessary regulations that would have eventually acted as a safety net against price spikes. This is despite a clear duty to do so. As noted by the UN Special Rapporteur on the Right to Food, Olivier De Schutter (2011), the WTO Agreement on Agriculture contains several provisions that explicitly mention food security, confirming that the WTO has international legal authority for certain aspects of food security policy.

The international food crisis in 2008 sparked a series of global responses to mitigate its widespread effects, tackle the underlying causes and increase food security. Although food prices returned to a pre-crisis market averages for some time after the crisis, price volatility has remained and world food prices rose sharply again at the end of 2010, bringing them close to the crisis levels of 2008 (UNCCD, 2011).

Higher food prices affect countries differently depending on whether they are net exporters or net importers of food. Net food-exporting countries will benefit and experience higher terms of trade and more income as a result of higher prices. Net food-importing countries, on the other hand, will face worsened terms of trade and have to pay a larger food import bill, which will impact negatively on trade balance and affect the strength of their currency (FAO,

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2010a). This is especially worrying for developing countries, the majority (55 per cent) of which are net food importers (FAO, 2011a).

The High Level Panel of Experts on Food Security and Nutrition has given three interlinked explanations for the recent food price behaviour (HLPE, 2011): (1) agricultural price volatility; (2) the dynamics of agricultural investment; and (3) scarcity.

Agricultural price volatility

First, they argue that food price increases are a problem of natural “agricultural price volatility”, so high prices will not last¹. Price volatility in the last five years has been higher than in the previous two decades, but lower than it was in the 1970s. Because of the liberalization of markets over the past 20 years, however, domestic prices in many countries are more connected to international prices than they were in the 1970s. The Panel of experts discuss three possible causes for this international food price volatility, namely demand elasticity, trade policies and speculation, the latter being the most controversial.

To stabilize domestic prices, developed countries make use of policies such as domestic support for food and agriculture production in the form of subsidies, compulsory biofuel percentages and export bans, amongst others. This keeps domestic prices stable at the cost of further warping market prices at the international level.

Most developing countries, on the other hand, do not have the resources to pay high subsidies or follow such policies in order to compete in international food markets. Consequently, many of them imposed export restrictions or export tariffs on key commodities, such as wheat in the case of Russia and rice in India², which reduced supply on international markets and also contributed to the recent food price spikes. However, one must note that not all export restrictions cause these sorts of disruptions; in many cases, export taxes and restrictions can stabilize domestic prices (Nogués, 2011).

Nonetheless, when unexpected events take place, such as environmental disasters or unusual seasonal changes, highly populated countries can make pressing demands on markets with export restrictions where only a fraction of production is being traded internationally. The first agricultural price volatility explanation overlooks how domestic policies affect the interconnectedness between exporting and importing countries, especially crucial in the case of key commodities as previously mentioned. Moreover, even if supply is sufficient to meet pressing demands, it is unclear whether it will reach the part of the demand that is least solvent and most food insecure.

Agricultural investment dynamics

A second explanation posits that periodic food crises (1950s, 1970s, and present) can be explained by the dynamics of agricultural investment: high prices trigger investment and technological development, which lead to a rise in production and lower prices. In contrast,

1 This point is arguable, and it has been made even inside the FAO, vid. FAO, IFAD and WFP, 2011.

2 Vid. for more information recent analyses in Sharma, 2011 or Martin and Anderson, 2011.

low prices lead to a reduction in investment until supply is so low that prices begin to spike, which again triggers investment.

Public investment in agriculture has been argued to be critical to achieving MDG1 (Fan, 2008), although this is not the only factor in overcoming hunger. Controlling food prices is key in addressing the issue of food availability, and public investment is certainly one of the ways to achieve it, but not if domestic policies lead to global food price volatility and spikes. Although higher food prices can help poor farmers receive a greater return on their crops, a large number of rural households are actually net buyers of staple foods³, meaning a net increase in food insecurity even as income rises. Many countries have gone from being net food exporters in the 1970s to being net importers in recent years⁴. This shift took place after the decline in world food prices from the mid-1970s to the mid-2000s, as food became readily available on international markets due to subsidized overproduction in developed countries (De Schutter, 2011). This explanation fails therefore to address the issue of the trade liberalization era as well as the effect of foreign agricultural trade policies in domestic markets.

Scarcity.

The third explanation sees the current price increases as an early signal of long-lasting scarcity in agricultural markets. The world could be facing the end of a long period of structural overproduction in international agricultural markets, previously made possible by the extensive use of cheap natural resources (e.g. oil, water, biodiversity, phosphate, and land). The FAO's explanation fails to address other factors like rapid population growth and does not adequately explain the link between food prices and new emerging demands for biomass, the most visible part coming from the conversion of agricultural land for the production of biofuels. A major problem concerning biofuels is the complete lack of international discipline to address their distortive effects. Countries like the USA have adopted national policies on biofuels (specifically ethanol) that have contributed significantly to higher staple crop prices and modestly to higher food prices as a whole (Babcock, 2011).

The prices of food crops are now inextricably linked to the price of oil, due mainly to the heavy reliance of conventional agriculture on fossil fuels (Altieri, 2002). The more the price of oil increases, the more profitable it is to convert food crops into biofuels, even if larger economies like USA had not applied subsidy policies (Babcock, 2011). Even at current oil prices, in 2012 the USA produced 272 million tons of grain, of which 114 million tons – around 42% - was used for the production of fuel ethanol (up from 16 million tons in 2000) (Earth Policy, 2012).

It appears that all three explanations apply to some extent to the behaviour of food prices. However, they are all only partially true, and not entirely appropriate when applied to higher levels of non-traditional analysis.

3 Around 60 per cent in Bangladesh, Kenya and Mozambique, for example, vid. FAO, 2008b.

4 This is the case of many countries in Africa, which is puzzling given their vast agricultural potential in many instances (vid. Rakotoarisoa, 2011).

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There are several ways of analyzing problems; a traditional form of analysis focuses on separating the individual pieces of what is being studied. A non-traditional analysis could consider systems thinking, that in contrast focuses on how the thing being studied interacts with other constituents of its system (Aronson, 1998). This way of approaching problems gives solutions that are strikingly different to those of traditional analyzes, especially when what is being analyzed is marked by complexity and a great number of interactions, such as the behaviour of food prices.

The Panel of Experts applies a traditional reductivist approach for trying to elucidate this complex situation, which leads to the three different explanations discussed above, all of them incorrect if taken in isolation. Although they do mention that the explanations are complementary, they do not provide an explanation as to how, to what extent, or in which areas they are complementary. The report also fails to expand on the linkages of food security to key issues such as the impact of trade liberalization and increased interdependence among countries pursuing non-liberal domestic policies, as previously discussed. Applying systems thinking and making food prices part of a larger picture would give a different perspective and perhaps more comprehensive explanation.

Food prices and security as part of the issue of agrobiodiversity loss is seldom examined, and warrants further discussion. How economic development and liberalization has affected food prices (and therefore food security) has been studied (Panagariya, 2002), but there is no comprehensive study of the impact on food prices and security of inter-linkages and interdependencies driven by trade liberalization. There are some studies of the impact of the WTO Agreement on Agriculture on food security (Gonzalez, 2002; Gayi, 2006), but none measure its role in the recent food crisis.

A systems analysis of food security as part (or consequence) of agrobiodiversity economics could have numerous and beneficial impacts. A comprehensive analysis, however, of the economic impact of international regulations on agrobiodiversity conservation seems to be almost impossible⁵. This paper will try to carry out an assessment of the impact of some trade liberalizing measures on agrobiodiversity, in the hope to raise awareness of the importance of the effects of international regulations in national policies, which in turn affect global levels of *in situ* conservation. More specifically, neoliberal economies⁶ and trade liberalising regulations have affected the level of on-farm agrobiodiversity, in turn affecting food security. The political economy of agriculture cannot be studied without having those international regulations in mind, and the effects of the latter on agrobiodiversity and food security.

III: GLOBAL ECONOMIC GOVERNANCE OF AGROBIODIVERSITY FOR FOOD INSECURITY: AN IMPACT ASSESSMENT OF SOME TRADE LIBERALIZING MEASURES

The role of biodiversity for food and agriculture is crucial, and diversity is recognized as the basis for local cultures in traditional sustainable food systems that have a strong connection to

⁵ Vid. CBD Secretariat (2004) and in particular paragraphs 89, 93, 99, 105 and 109.

⁶ Neoliberal is used here in reference to Western free market ideals based on the principles of self-interest, self-regulated markets and liberal democratic ideals.

cultural diversity. Strong local cultures and institutions play a significant role in strengthening both the resilience of local farming systems and their capacity to cope with change in ways that maintain or improve livelihoods (FAO, 2011). Biodiversity provides a variety of wild and domesticated plants and animals critical to food security and nutrition, especially in times of famine or environmental stresses. Genetic diversity can provide access to seeds and planting material better adapted to various existing conditions (e.g. drought-resistant traits, or resistance to pests and disease), and is the basis of adaptation as needs and conditions change (CBD COP8, 2006).

A key concept in biodiversity conservation is food sovereignty, defined as the right of each nation to maintain and develop its own capacity to produce the staple foods of its peoples, respecting their diversity in methods of production, genetic material and related culture (Menezes, 2001). This concept often underlies or goes hand in hand with the promotion of regional and local food systems, and thus food security (Lee, 2007). Reliance on a lesser number of local crops can result in erosion of plant genetic resources and an increased risk of widespread diseases. When a variety is susceptible to a new plant disease, this results in food insecurity. From an analysis of 104 country reports, it appears that genetic erosion may be greatest in cereals (FAO, 2010), a phenomenon known as agrobiodiversity loss.

Although sometimes used interchangeably, the words “agrodiversity” and “agrobiodiversity” have distinct meanings. Agrobiodiversity has generally been a shorthand for biological diversity on lands used for agricultural purposes, defined as the management and direct use of biological species, including all crops, semi-domesticates and wild species (Guo et al., 1996). Agrodiversity on the other hand, is a much broader term that includes management of the lands, waters, and biota as a whole, and is considered beyond the scope of this paper (Brookfield and Padoch, 1994).

Small-scale farmers – who constitute around 85% of world-wide farmers (Von Braun, 2008) – traditionally conserve and grow a variety of crops for cultural, economic, and environmental reasons: it is widely considered a form of insurance against socially, economically and ecologically risky environments (Lipper and Cooper, 2009; Baumgärtner and Quaas, 2009; Pascual et al., 2011).

While the study of the impact of agreements such as the Trade-Related aspects of Intellectual Property rights (TRIPs) has been discussed extensively in available literature (Rosendal, 2003; Gonzalez, 2004; De Schutter, 2009), other international agreements that restrict the economic sovereignty of individual countries, such as the WTO Agreement on Agriculture, have less discussion. If, as previously explained, food security is inextricably linked to agrobiodiversity, which in turn relies on maintaining food sovereignty, then such international agreements can hinder the possibility for a country to become food secure. However, as discussed, food prices need to remain under constant scrutiny in order to prevent instabilities and market disruptions that create price spikes. International economic coordination is therefore required, but not at the expense of national sovereignty over agricultural public policies. Assessing the impact of international measures on agrobiodiversity consequently seems to be key in the quest of tackling food insecurity.

The WTO Agreement on Agriculture purported to address the structural inequities in global agricultural trade to create a “fair and market-oriented agricultural trading system” (Uruguay Round Agreement, 1994). However, the Agreement contained numerous ambiguities that

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enabled wealthy countries to subsidize and protect the domestic agricultural sector while constraining the ability of developing countries to use tariffs to protect their small farmers (Gonzalez, 2002). In effect, the Agreement has been said to establish that agricultural commodities could be sold on world markets at prices below the cost of production, thus allowing subsidized agricultural producers in the USA and the European Union to negatively affect the livelihoods of farmers in the developing world (Murphy et al., 2005).

Furthermore, although food security concerns fall within the broader mandate of the Doha Development Agenda of the WTO, early negotiators of the Round did not foresee the current scenario of high prices and focused their efforts on the decline in commodity prices (Ahmad, 2011). Most difficulties in negotiating new economic disciplines during the Doha Round are frequently due to disagreements between major economies (mainly the G20) that demand such policies in the international arena (Fergusson, 2008). If agriculture and food security have been a failed experience in terms of international economic negotiations, linking agrobiodiversity to food security seems to be very far from even entering international political discussions for practical legal and economic outcomes.

Approximately 7,000 crop varieties are used worldwide to produce food (Vaughan and Patterson, 2002). Nevertheless, there has been a shift from complex agro-ecosystems, usually comprising small-scale family-owned farms, to specialized industrial-sized farms, which has raised numerous questions regarding crop genetic diversity. Modern, large-scale agricultural production relies on an increasingly narrow and homogenous group of plant genetic resources for most of the world's food output (Altieri, 2002). Today, just 15 crop plants provide 90 per cent of the world's food energy intake, with three - rice, maize and wheat - making up two-thirds of this. These three are the staples of over 4 billion people (Loftas, 1995).

If analyzing the effect of trade policies on food prices and security is arduous, assessing the impact of specific economic measures on biodiversity has proven almost impossible (CBD Secretariat, 2005). Specifically, the CBD identified data gaps and methodological problems that make it very difficult to give robust empirical assessments of the direction of the overall effects of trade liberalization on agrobiodiversity. This report analyzes the impact of a specific kind of trade-liberalizing agro-economic measures – domestic support measures - on agrobiodiversity. However, it leaves out other measures such as export bans and subsidies, which are also restricted by international agreements.

The WTO claims domestic support measures are trade distorting (WTO, 2001). It has therefore worked for their reduction in both developed and developing countries (WTO, 2003). Incongruously, the bound rates, or highest allowable rates, as agreed on in the Uruguay Round often allowed higher protection levels than those of the base period. As a result, protection actually increased for a number of agricultural products (CBD Secretariat, 2005). Paradoxically as well considering their overt commitment to WTO-driven liberalization, the EU, Japan, and the USA for reducing domestic support measures, in 2001, these blocs accounted for 82 per cent of total domestic support of the whole OECD area (CBD Secretariat, 2005).

In fact, despite the WTO's efforts to reduce domestic support, the CBD Secretariat (2005) provides extensive literature⁷ proving that the reduction of trade-distorting domestic support,

⁷ Vid. Point 42, footnote 36 (page 17).

mostly used by developed countries, would directly reduce producer prices, leading to lower incentives for production in those countries, and increased prices for the consumer. In contrast, agricultural production in other – mainly developing – countries is usually expected to increase following removals of domestic support, as a consequence of increased consumer prices acting as an incentive for production. This is said to have positive environmental impacts in developed countries (due to reduced agricultural production), but negative environmental impacts in developing countries. The report is mainly conceptual, but it identifies many challenges for the generalization of conclusions when assessing the impact of domestic support measures on agrobiodiversity. The identification of these challenges can be very helpful for further studies: for instance, the need to recognize the level of aggregation between environmental and trade-related data sets; short-term and long-term effects; or the differences among regions and countries with different socioeconomic status. Case studies provide insightful information about the specific impact (the report includes examples from Nigeria, Ecuador, and China⁸), although generalizing conclusions is undesirable given the agricultural specificities of every country. This would, however, shed light on the level of interdependence existing among countries, which could be useful for designing future policies.⁹

Governments have a clear role in promoting or discouraging agrobiodiversity through economic measures, and international regulations directly affect their decisions. Economic subsidies and taxes have a very powerful effect in posing barriers to or promoting agriculturally sustainable solutions. As well as discouraging unsustainable practices, governments can invest in the maintenance (or improvement) of ecosystem regulating and supporting services that derive from the maintenance of diversity in the agricultural landscape. Payments for Agricultural Conservation Services (PACS) can increase the private benefits from utilizing diverse local plant and animal genetic resources on-farm through voluntary reward mechanisms, so as to sustain their on-farm conservation (Narloch et al., 2011). In Indonesia, the government's commitment to Integrated Pest Management strategies for rice culminated in the establishment of a ban on a number of pesticides. This resulted in a 75% reduction in the use of chemical control methods for rice although yields continued to rise by 25% over the same period (FAO, 2009). Careful planning of such schemes is needed to avoid some recurrent problems such as the lack of additionality (i.e. paying for activities that would have been conducted anyway) and leakage (i.e. shifting environmentally-damaging activities elsewhere) (FAO, 2011). The potential internationalization of such initiatives should be further studied.

Most related economic studies similar to the Economics of Ecosystems and Biodiversity initiative (TEEB, 2010) are conducted to assess and support the value of ecosystems and biodiversity, seeking to argue for ecosystem conservation as a viable investment option. There is an overall lack of studies, however, that address the issue of international economic policies that would enhance agrobiodiversity conservation as well as ensuring food security. International economic policies affect farmers' decisions greatly, and if used wisely, they can ensure that farmers diversify livelihood options, benefitting both the environment and their communities.

8 Vid. Point 64, page 22.

9 Although countries' interdependence on genetic resources for food and agriculture has been studied (Fujisaka et al. (eds.), 2009), the economic interdependence (resulting of or as a consequence of the latter) has not.

IV. CONCLUSIONS

Economic studies rarely focus on impacts on biodiversity, and very seldom relate agrobiodiversity to food security. In regards to the existing international economic regulations, trade concerns should come after food security and ecological sustainability: the right to food is a basic human right (UDHR, 1948; ICESCR, 1966), whereas trade is not. The CBD recognizes the intrinsic value of biological diversity, its critical role in maintaining the life-sustaining systems of the biosphere, and its “importance for meeting food, health, and other needs” of human beings (CBD, 1992). Trade should be a means to achieve these needs, not an end itself.

In particular, the WTO Agreement on Agriculture cannot be reconciled with food security or ecological sustainability so long as its sole objective is the elimination of trade barriers in order to promote export production of agricultural goods. In this sense, agrobiodiversity can provide a safety net against trade liberalization as well as the need for heavy subsidization. Protecting small farmers and adapting international standards to the reality of the developing world has not been satisfactorily realized so far, and this should be changed. Small-scale farmers, which constitute 85% of the farmers around the world, are the ones that should be protected against international markets’ distortions. Designing international trade regulations that reward agrobiodiverse farms could redefine the debate of global food insecurity within the terms of ecological sustainability, instead of economic profitability. The inclusion of provisions protective of agrobiodiversity in international trade regulations could be key supporting those farmers currently in socially, economically, and ecologically risky environments, for instance by incentivizing the most agrobiodiverse farms with reduced export tariffs. Such measures would need to be carefully designed, especially regarding how agrobiodiversity is calculated, in order to avoid undesired effects.

Transforming the rules that govern global trade will require persistent cooperation and coordination among highly heterogeneous developing countries with conflicting priorities. A way to achieve this could be exempting protectionist measures when designed to ensure food security. However, reforming the entire concept of the WTO, which based solely on the promotion of trade, is a challenging endeavour. Still, human rights law should counter-balance the supremacy of WTO trade rhetoric, an indispensable tool to protect the basic right of all human beings to sufficient, safe, and nutritious food and to advance the procedural and substantive rights essential to the achievement of ecological sustainability. As discussed, international trade has numerous effects on food security, and its impact on agrobiodiversity is only beginning to be monitored. The WTO could use its international legal authority regarding the impacts of international trade on food security for promoting collaboration with the FAO and the Secretariat of the CBD, as well as institutionalizing the linkages between the three in order to address the global challenge of feeding the world. Redefining the principles upon which the WTO is established under the sphere of basic human rights such as the right to food is crucial, and a sole mention in the Preamble of the Agreement on Agriculture is certainly not enough for effectively realising it.

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