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**Food Security, Climate Change
and the Black Sea: The
Instructive Case Study of 2010-
2011 Events**

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Abstract

This policy brief focuses on a case study. It is suggested that an environmental disaster during the summer of 2010 in the Black Sea region triggered in winter 2011 a food crisis in the Arab World; in turn, this led to massive riots, revolts, political instability, a NATO operation and, alas, an oil crisis that accentuates an already suffering global economy. Coextensively, it maybe suggested that an environmental crisis triggered a political crisis, which escalated in a series of conflicts that are of major concern for traditional security structures in Europe and beyond. In sum, the argument is made that as a result of this experience, the human security agenda must have a direct effect on our traditional security agenda. The question addressed at this point is how these interrelated chains of events affect the security establishment and our notions of a 'high strategy.'

Keywords

Arab spring, Black Sea area, climate change, food crisis, human security, high strategy, soaring prices.

Table of Contents

The question	3
The argument	3
The global context of food security.....	5
From global to regional context: the Arab region	9
The Black Sea trigger	11
Back to the 'traditional security' agenda.....	13

Food Security, Climate Change and the Black Sea: The Instructive Case Study of 2010-2011 Events

Ilia Roubanis and Zefi Dimadama*

Arab countries import at least 50 percent of the food calories they consume. As the largest net importers of cereal, Arab countries are more exposed than other countries to severe swings in agricultural commodity prices, and their vulnerability will probably be exacerbated in coming years by strong population growth, low agricultural productivity, and their dependence on global commodities markets.

(World Bank Report: 2009)

The question

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An unemployed university graduate living in the town of Sidi Bouzid set himself on fire; this event sparked a wave of popular unrest in Tunisia, escalating in January 2011, leading to the collapse of the Zine El Abidine Ben Ali regime. Riots followed in Algeria, Egypt, Jordan, Yemen, and the rest of the Arab World. The question at hand is whether this chain of events could somehow be related to a 'trigger' in the Black Sea region few months earlier; and if so, what are the lessons to be drawn by the security community.

The argument

The views expressed in this Policy Brief are personal and do not necessarily reflect the policies or views of the ICBSS.

Following the end of the Cold War, there is a general consensus that a series of global security challenges cannot be addressed by the nation-state alone. Traditional security cultures are framed by Napoleonic notions of the need to commit material and human resources for the protection of the sovereign territory of the nation-state. In turn, strategic blueprints prepare

states for war, mainly by ensuring that sizable power can be concentrated vis a vis the perceived opponent, which is assumed to be another 'peer' nation-state. However, the nature of conflict is changing. Global conflicts appear to be more and more of a civil or intra-state nature, which calls for a revision of traditional security paradigms. This development has given credence to the concept of 'human security,' which places an emphasis on global security risks and calls for multilateral approaches to the formation of a 'high strategy.'

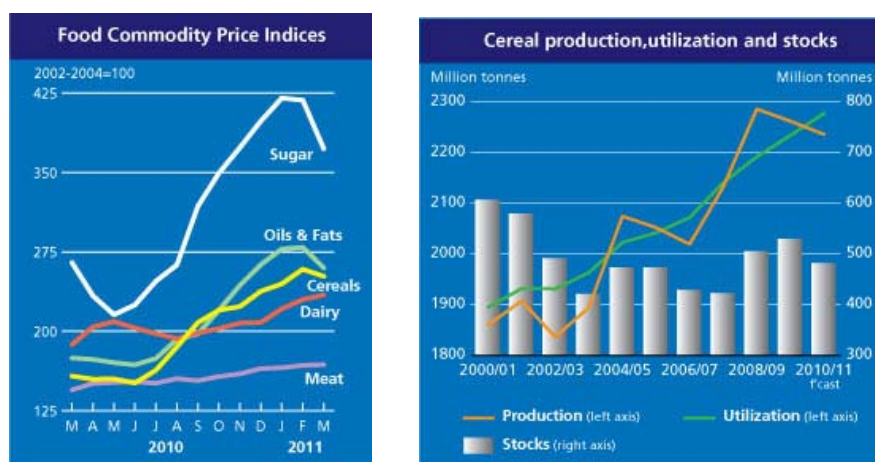
However, traditional as well as human security discourses are not mutually exclusive though they originate from different settings. It is not an accident that the term 'human security' originates from a United Nations publication. Coined by Dr. Mahbub ul Hassan, 'human security' was defined in the Human Development Report (1994), where it was said to include seven dimensions, amongst whom, food security and environmental security. 'Food security' requires that all people at all times have both physical and economic access to basic food. Environmental security aims to protect people from the short- and long-term ravages of nature, man-made threats in nature, and deterioration of the natural environment. And whilst these challenges do not appear the subject matter of deliberation amongst men and women in uniform, whose mission is to safeguard the territorial integrity of the state, dealing with revolts and massive refugee waves definitely is. In sum, no regime, no state, and no security apparatus can remain idle vis a vis threats of strategic gravity, such as hunger and environmental degradation. The strategic impact of such threats makes human security the subject matter of deliberation in a traditional security setting.

This policy brief focuses on a case study. It is suggested that an environmental disaster during the summer of 2010 in the Black Sea region triggered in winter 2011 a food crisis in the Arab World; in turn, this led to massive riots, revolts, political instability, a NATO operation and, alas, an oil crisis that accentuates an already suffering global economy. Coextensively, it maybe suggested that an environmental crisis triggered a political crisis, which escalated in a series of conflicts that are of major concern for traditional security structures in Europe and beyond. In sum, the argument is made that as a result of this experience, the human security agenda must have a direct effect on our traditional security agenda. The question addressed at this point is how these interrelated chains of events affect the security establishment and our notions of a 'high strategy.'

The global context of food security

Before turning to a national or regional security agenda, it should be acknowledged that hunger is a global challenge with historical roots. The connection between food and ‘order’ is as ancient as the concept of the revolution itself; indeed, the call for ‘bread and freedom’¹ can also be seen as an axiomatic set of priorities: first comes bread then comes freedom. In recent history, the steepest rise in commodity prices was witnessed between January and June 2008. Following this steep rise in commodity prices nearly three years ago, food riots took place in Mexico (December 2007), Indonesia (January 2009), Burkina Faso (February) and then Guinea, Mauritania, Morocco, Senegal, Uzbekistan, Yemen, etc.² Three years later food prices approach the 2008 peak (see Figure 1). And although expects from the Organisation for Economic Co-operation and Development (OECD) forecast an increase in agricultural production up to 70% by 2050, it is also expected that soaring commodity prices are here to stay (see Figure 2). Why this should be the case is not at all clear; but, the fact remains that food shortages present us with a number of security threats.

Figure 1: Development of food prices and commodity prices

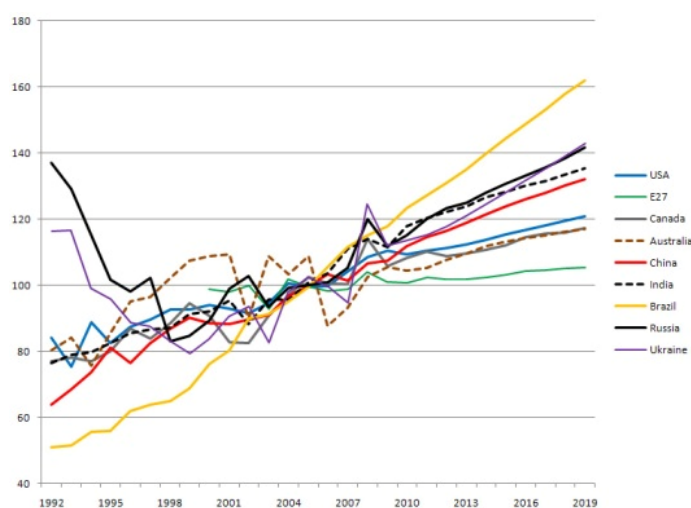
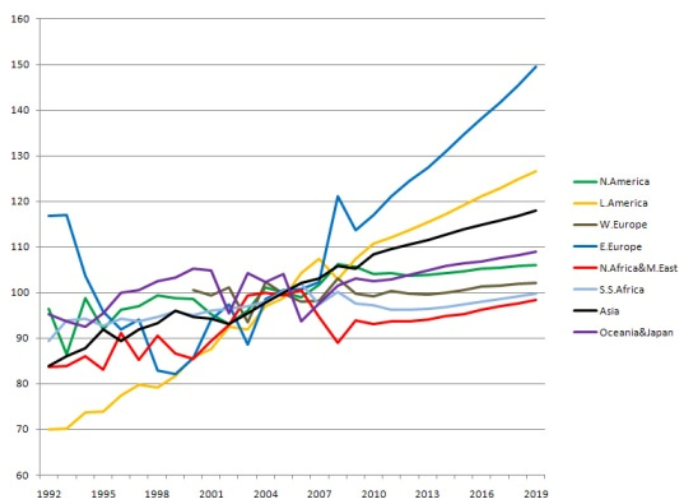


Source: Food and Agriculture Organization of the United Nations (FAO)

¹ “Food Security: Bread and Freedom,” Guardian Editorial, *Guardian*, 1 February 2011.

² Heidi Fritschel, “The price of food: ingredients of a food crisis,” www.opendemocracy.net, 9 April 2008.

Figure 2: Forecast of agricultural output



Source: OECD-FAO

If we assume that food insecurity creates political instability, which goes hand in hand with concrete security threats, the question at hand is how national authorities, including security forces, can respond to this challenge. From a security point of view, taking appropriate measures implies identifying possible threatening scenarios, create a number of contingency plans and commit adequate human and material resources. In the long and medium term, guarantying national security may also entail dealing with ‘root causes’ or developing a ‘high strategy’ for hunger elimination. However, there is no consensus on the root causes of the ‘food-crisis-phenomenon.’ Schematically, we could say that experts locate

the root cause of the phenomenon on a spectrum ranging from ‘natural factors’ to ‘human factors.’

The ‘nature’ side on the spectrum sees food shortages as a classical supply and demand issue, where ‘food’ is assumed to be increasingly scarce. Thus prices soar because the commodity market has reached a marginal point of supply, largely due to rising incomes in certain developing nations, that is, Asia, which comes hand in hand with an appetite for meat and further depletion of existing global water supplies.³ And if this is the case, we should perhaps make our contingency plans with the certainty that our productive genius will, once again, prevail. This is the argument driven by analysts, such as Bjørn Lomborg, who place their faith for the eradication of hunger in increasing agricultural productivity, community nutrition programmes, as well as technological innovation: promising food technologies such as micronutrient supplementation, micronutrient fortification and biofortification are said to—sooner or later—bring about the ultimate triumph over man over hunger. If this analysis is correct, the effect of global warming on humanity’s capacity to feed itself will be negligible:

... The impact of global warming on agricultural production will probably be negative, but in total very modest. The most pessimistic models, expecting the most pessimistic climate impacts, expect a total reduction of agricultural production of 1.4% compared to a scenario without any climate change. The most optimistic model forecasts a net increase in agricultural production from global warming of 1.7%. To put these numbers in perspective, the average growth rate for agriculture over the past 30 years was about 1.7%.⁴

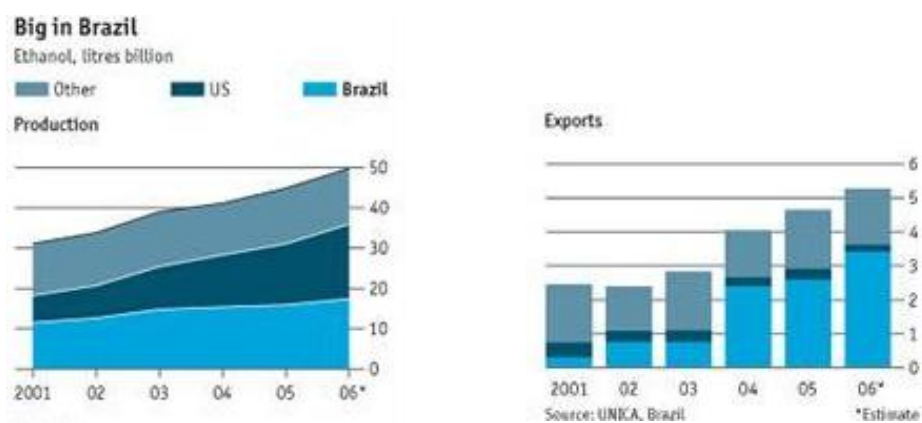
Shifting towards the middle of the spectrum, the ‘human factor’ is treated as an important variable that slows down the ‘natural equilibrium’ between demand and supply. An often quoted example is the seemingly misguided

³ Dan Smith and Janani Vivekanada, *Climate change conflict and fragility: understanding the linkages, shaping effective response* (London: International Alert, November 2009), http://sansac.org/downloads/Climate_change_conflict_and_fragility_Nov09.pdf.

⁴ Bjørn Lomborg, “Food security: the seed of solution is already here,” http://www.nato.int/docu/review/2011/Climate-Action/Food_Security_Solutions/EN/index.htm, 2011.

turn towards the production of biofuels.⁵ Therefore, it has been suggested that the ‘green call’ for a carbon neutral economy has divested valuable agricultural capacity from the objective of feeding the world to fuel production (see Figure 3). This position is not mutually exclusive with the ‘man versus nature’ position. It assumes that the main short-term failure we must address is the way we employ means to desired ends, that is, how we create the conditions for development that is ‘sustainable.’ But, no mistake should be made: growth is the ultimate objective; the desire for profit will drive investment, research and technological innovation towards a ‘final solution’.⁶ Through this prism, the challenge at hand is to create the right ‘market motivation,’ that is, to harness the price mechanism so that the ‘right balance’ is achieved between the need for clean energy and the demand for low cost food.

Figure 3: Divesting land from food to energy



Source: *The Economist*, Brazilian Sugarcane Industry Association (UNICA) Brazil

Further on the spectrum come those critics who doubt the ‘natural origin’ of supply and demand dynamics, focusing on stock-market speculation as the main root cause of the ‘food crisis.’ While agricultural producers have for decades engaged in advanced selling of their product in order to hedge their risks, since the mid-1990s the commodity market has been deregulated, with ‘food speculation’ or ‘futures’ emerging as a booming

⁵ James Painter, “Indonesia: the biofuel blowback,” www.opendemocracy.net, 30 August 2007; Julian Borger, “UN Chief calls for review of biofuel policy,” *Guardian*, 5 April 2008.

⁶ Pretto Riberao, “Biofuels in Brazil: Lean, Mean and not Green,” *The Economist*, 26 June 2008.

investor's choice. The problem at hand, as certain Non-Government Organizations (NGOs) have pointed out, is that betting in rising commodity prices tends to become a self-fulfilling prophecy. Indeed, a million dollar bet means nothing, but as soon as a multibillion dollar hedge fund comes into play, prediction is in fact something more than fortunetelling. In fact, this phenomenon may be accentuated in the current financial environment, since food is considered a 'defensive choice' for investors because, after all, 'people have to eat,' crisis or no crisis. Thus, even a modest drop in the supply of a specific commodity tends to create massive price increases due to a hoard like reaction of the market.⁷

From global to regional context: the Arab region

Whatever food crisis theory one chooses to subscribe to there is little doubt that the issue of hunger had something to do with the political domino we have come to call 'the Arab Spring.' If we focus on 'naturalistic positions,' we cannot fail to note that the Arab region is especially susceptible to 'market volatility' because of its demographic outlook. Largely as a result of the agricultural 'green revolution' the world at large has witnessed a demographic explosion during the 20th century; but within a century the Arab population expanded fivefold and continues to do so at an annual average of 2.3%. According to UN projections, Egypt will grow from about 78 million today to 121 million people in 2050; Algeria from 33 to 49 million; Yemen from 22 to 58 million. According to certain analysts, by the middle of this decade the Arab world will have 150 million more inhabitants.⁸ This means that more jobs need to be created — especially since Arab women are dynamically entering the labour market—but, also, more food will have to be imported.

Across the Arab world the situation is not identical. Certain countries are more exposed to hunger than others, given diverging levels of income, agricultural output capacity, etc. But, in June 2010 the UN issued a report entitled "Index overpopulation," addressing the status of the population and food in 77 countries, including most countries of the Arab World and the Middle East. The report assessed levels of per capita consumption, the per capita share of productive land available, livestock, water resources,

⁷ John Vidal, "Food speculation: people die of hunger while banks make a killing on food," *The Guardian*, 23 January 2011; Paul Brunnell, "At the mercy of rising food prices," *BBC News*, 20 May 2008.

⁸ Pack Howard and Nolan Marcus, "People power: Arab economies in a global era," www.opendemocracy.net, 27 May 2007.

etc. However, the most crucial finding of this report is the level of food dependency defined as the ratio of consumption based on external sources. And surely enough, Arab countries were high up in the list of the most food dependent states in the world: 93.5% in Kuwait, 81.5% in Iraq, 82.5% in Lebanon, 77% in Egypt, 62.7% in Saudi Arabia, 59.6% in Qatar, 45.9% in Syria, 38.9% in Tunisia, 32.8% in Morocco, 31.4% in Yemen, and 28.5% in Oman.⁹ Given that the average global rate of food dependency ratio stands at 30.4%, it is obvious that the Arab region is more exposed to commodity market volatility than others.

And there is little hope that regional production will eventually offset some of this rising demand. The International Panel on Climate Change forecasts that during this century shifts in rain patterns could lead to decrease of up to 20% in rainfall in the Middle East and North Africa. Moreover, a rise in temperature of 2-4 degrees means more evaporation and even less water available. Some climate models predict that several rivers might simply disappear with such changes, which is already happening with the river Jordan. In any event, droughts are already straining the commodity market's price fluctuations. Thus global climate change, which has especially severe effects in the Arab region, undermines any hope that home-grown foodstuffs will cover for the steep projected rise on import dependency. This is why oil rich states in the region, such as the United Arab Emirates (UAE), Bahrain and Qatar, buy vast estates of arable land in countries hungry for the Foreign Direct Investment (FDI), such as Sudan, Pakistan, Thailand, Ethiopia, etc.¹⁰

But, for the states that cannot afford to buy their way out of a food crisis, the combination of poverty and food dependency is lethal to political stability. The most notable correlation of these two factors may be observed in Egypt, which is not only exploding demographically (see Figure 4) but is also the world's largest wheat importer. Egypt is thus beholden to foreign providers for nearly half its total food consumption. Half of Egyptians live on less than \$2 a day. And poor people spend more on food: basic foodstuffs account for half the country's consumer price index.¹¹ And as political instability is growing in the Arab world, food prices are expected to rise still further because oil—and therefore transport costs—are also rising.

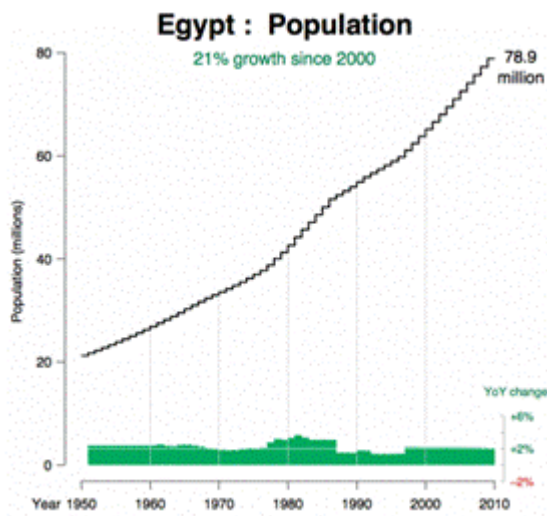
⁹ Mohammad Hassan, "Food dependency in the Arab World," *Omran News*, 26 July 2010, <http://www.omrannews.com/food-dependency-in-the-arab-world>.

¹⁰ LiveNReal.com 2008

¹¹ Spengler, "Its Asian prosperity that's undermined dysfunctional Arab states," *Miscellania*, 2 February 2011, <http://giffenman-miscellania.blogspot.com/2011/02/its-asian-prosperity-thats-undermined.html>; Weisenthal 2011.

In less dramatically poor states, such as Tunisia, the food crisis might have been experienced as a more ‘domestic issue,’ given that most protestors were educated university students. As noted by the Arab Human Development Report (2009), by 2020 Arab countries will need to create 51 million new jobs for its young people. Most Arab states fail to stimulate this rate of growth; Tunisia is no exception since in the beginning of 2011 official statistics indicated 14% unemployment.¹² Thus even in Tunisia there is no doubt that hunger was related to revolution.

Figure 4: Demographic expansion



Source: US Census Bureau IDB

The Black Sea trigger

Again, no matter what kind of ‘food crisis’ theory one choose to subscribe to, there is little doubt that the ‘Arab Spring’ was triggered by events in the Black Sea. In July 2010 a heat wave shocked traditional foodstuff exporters—Kazakhstan, Russia, and Ukraine—which had an immediate effect on wheat crops. This was followed by heavy rain in Romania and Bulgaria, which also had an adverse effect on wheat production.¹³ But the most severe hit on the grain market were the blazing fires that came as a

¹² Stanley Reed, “Tunisia’s dangerous job shortage,” *Bloomberg Businessweek*, 20 January 2011.

¹³ Aleksandras Budrys, “Drought and rain still blight Black Sea wheat crops,” *Reuters Moscow*, 11 August 2010.

consequence of drought in the Black Sea region, which actually destroyed crops in many parts of Russia and Ukraine. Consequently, the Russian government announced a ban on grain exports, initially on wheat but, later on, on barley, rye, and maize. This move was not officially followed by the Ukrainian government, but customs were unofficially blocking grain exports for some time; moreover, Russia did request its custom union partners, namely Kazakhstan and Belarus, to follow suit.¹⁴

These moves shocked the world markets, leading the UN food agency (FAO) to hold a special meeting with policy makers to discuss measures to be taken in anticipation of a steep rise in global food prices.¹⁵ And prices did soar across the spectrum of agricultural commodities, since grain prices affect meat and dairy prices. Moreover, this development had a particularly dire effect in the Middle East, since the type of wheat produced in Russia is primarily exported to Turkey, Egypt and Syria.¹⁶ Of course soaring commodity prices were a blessing for many states. Agricultural producers in Canada, the USA, Argentina and other Latin American states stepped in to fill the demand vacuum. However, whilst the demand vacuum was filled at the 'right price,' a politically uncontrollable chain of events was initiated. Hunger did strike the Arab World either because of 'nature' or because of stock market speculation.

As blazing fires soared the commodity prices and the poor were faced with starvation—a feeling that goes hand in hand with a tendency to revolt—governments intervened. Indeed, the export ban policy adopted by states in the Black Sea area was triggered by a concern for national or regional food security. By the same token, less than democratic regimes in the Middle East responded to food insecurity by attempting to tame market forces. In fact, market intervention in Egypt is a long standing practice, with the government customarily spending up to 7% of the Gross Domestic Product (GDP) or 20% of the budget for food and energy subsidies. In neighbouring states a similar approach was pursued: Jordan pledged to commit 224 million to stabilize commodity prices, an effort supplemented by a US grant of \$100 million and an immediate call for a decrease of taxation on basic foodstuffs;¹⁷ even the relatively affluent Saudi

¹⁴ "Russia to impose temporary ban on grain exports," *BBC*, 5 August 2010; "No export ban limit for Ukraine grain," *BBC*, 25 August 2010.

¹⁵ Andrew Walker, "UN calls for meeting on food price concerns," *BBC*, 3 September 2011.

¹⁶ "Russia to impose temporary ban on grain exports," *BBC*, 5 August 2010.

¹⁷ Stanley Reed, "Tunisia's dangerous job shortage," *Bloomberg Businessweek*, 20 January 2011; Vicken Cheterian, "The Arab crisis: food, energy, water, justice," www.opendemocracy.net, 26 January 2011.

Arabia announced its intention to double the volume of its wheat reserves, currently standing at 1.4 million tons or one year's worth of consumption.

However, certain analysts would argue that this is plain market-distortion, feeding 'evil' inflationary forces. Instead, Arab regimes should have pursued 'smart politics,' that is scrapping universal subsidies for fuel and food for the population as a whole and focus government intervention on the really needy. Following this line of thinking, the Economist noted in March 2011:

Unfortunately, too many governments in emerging markets have tried to quell inflation and reduce popular anger by subsidizing the prices of both food and fuel. Not only does this dull consumers' sensitivity to rising prices, it could be expensive for the governments concerned (...). The biggest danger lies in the Middle East itself, where subsidies of food and fuel are omnipresent and where politicians are increasing them to quell unrest. Fuel importers, such as Egypt, face a vicious, bankrupting, spiral of higher oil prices and ever bigger subsidies. The answer is to ditch such subsidies and aim help at the poorest, but no Arab ruler is likely to propose such reforms right now.

Back to the 'traditional security' agenda

In sum, there is no single diagnosis of the 'food insecurity phenomenon.' However, beyond a shadow of a doubt, soaring commodity crises can cause political instability. This is not only the case in the Middle East; the aftershocks of the 'Arab Spring' are felt in Europe, which has already faced a mounting refugee crisis and an oil crisis. The problem at hand is that soaring commodity prices are a blessing for certain economies that are heavily reliant on their production; at the same time, for states with an extensively developed financial sector, the idea of controlling speculation on commodity prices is vehemently opposed. In sum, despite the calls for global governance and economic liberalization, the 'inter-national' market system remains a sum of its constitutive parts.

Thus 'the invisible hand' in this case does not bring about a 'harmony of interests.' Nor are the aftershocks of political instability shared evenly amongst presumed allies or 'security communities.' For instance, Italy, France and Greece have recently called for a revision of the Dublin II agreement, mainly as a result of scores of refugees reaching the shores of

the Mediterranean coast. This fact has called into question one of the basic freedoms of the European Union (EU), that is, freedom of circulation.

However, the question at hand remains how traditional security apparatuses can respond to realistic threats on 'human security.' On a strategic level, the answer is that probably they can't. However, the experience of the nuclear crisis in Ukraine and Japan, the food crisis in the Middle East or the blazing fires in Russia and Ukraine, indicate that there is a mounting trend of human security threats that are of global consequence. Moreover, such types of disasters cannot single-handedly be dealt from individual nation-states or even sizable regional powers. Meanwhile, such threats to human security are dealt mostly by ad hoc international mechanisms.

If we were to define such security threats the main focus should not be on 'domestic challenges,' which comes hand in hand with an aversion to 'foreign interference,' but genuine strategic threats of a transnational nature: refugee waves, nuclear disasters, catastrophic earthquakes, oil spills, hurricanes, tsunami waves, droughts, etc. Strategically, the recent food crisis in the Middle East has taught us that as market forces become ever more densely knit they tend to amplify the aftershock of environmental or socioeconomic disruptions. In sum, foresight is probably a cost-effective principle. If this is true, there is an emerging sphere of 'human security' threats that requires transnational rather than international response mechanisms.

Abbreviations

EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
GDP	Gross domestic product
NATO	North Atlantic Treaty Organization
NGO	Non-Government Organization
OECD	Organization for Economic Co-operation and Development
UAE	United Arab Emirates
UN	United Nations
UNICA	Brazilian Sugarcane Industry Association

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