Global governance/politics, climate justice & agrarian/social justice: linkages and challenges

An international colloquium
4-5 February 2016

Colloquium Paper No.

Reinvigorating the Public Sector: the Case of Food Security, Small-scale Farmers, Trade, and Intellectual Property Rules

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Kortenaerkade 12, 2518AX
The Hague, The Netherlands

Organized jointly by:

With funding assistance from:

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February, 2016

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Reinvigorating the Public Sector: the Case of Food Security, Small-scale Farmers, Trade, and Intellectual Property Rules[1]

Susan H. Bragdon

Abstract

Governments are facing an existential crisis with respect to food security. What is their role in ensuring local food security and supporting domestic agricultural sectors, and particularly small-scale farmers, while the world is increasingly looking to market-based solutions to meet global food security needs? As they currently operate, global trade and intellectual property rights regimes do not work in favour of most small-scale farmers, who are the largest contributors to global food security while often remaining food insecure themselves. It is therefore incumbent upon governments to provide more than just an enabling environment for markets and the private sector -- they must play an active role in protecting the public interest. This paper calls into question the core belief that market-based solutions are sufficient for ensuring local and global food security and emphasizes the need for a revitalized public sector.

[1] The views in this paper do not necessarily reflect the views of QUNO. The author would like to thank Patrick Endall, Manuel Ruiz and Chelsea Smith for their substantial input as well as advice on the structure of this paper. Any errors or omissions are the sole responsibility of the author. Comments welcome: shbragdon@quno.ch

1 Introduction

The world's increasingly globalized food system is heavily influenced by a widespread belief in the primacy of the market and market-based systems for ensuring food security, along with a concomitant weakening of the public sector[2] that limits both the space and capacity for governing food systems. Trade and intellectual property rights (IPR) regimes are both tools of the market. This paper calls into question two core beliefs: 1) the belief that trade liberalization or "free" trade is the best means to ensure food security and 2) the belief that global harmonization of IPRs is needed to promote innovation that will support food security.

The key conclusions are: trade liberalization and globally harmonized IPRs are insufficient means for ensuring global food security, particularly for the world's least secure populations including small-scale farmers (SSF). The market and the private sector may provide some tools to achieve the objectives of food security, but they cannot by themselves fully satisfy the objectives related to food security. The private sector is interested in markets, and market demand correlates with an ability to pay rather than to human need. Private sector research aims to develop products for the most profitable markets, not the most in need. Markets don't consider access to those most in need, distribution, research priorities, inequality, or justice.

It might be possible to encourage markets to allocate education, healthcare or food security; the question is not can markets do this, but is it in the public interest for them to? Who will benefit? Who will be left out? And if it is determined that an area or part of an area is best served with government as the provider of the good or service, what does this means for government capacity and public policy?

To be able to do the analysis to regulate trade and IPR in the public interest, the paper argues for the need for a better understanding of the:

- The role of the public sector, in particular the role it must play as a provider of goods and services in food security;
- The role of the private sector in providing food security; and
- The boundaries and appropriate relationship between the two.

At present there does not appear to be a coherent understanding of the international architecture for food security, of what needs to be done by governments collectively, and the freedom governments need domestically to ensure the food security of their own populations without harming the needs of others. Given the current state of global food security, it is incumbent upon governments to provide more than just an enabling environment for markets and the private sector.

As they currently operate, global trade and IPR regimes do not work in favour of most SSF, who contribute the most to global food security while often remaining food insecure themselves. At the same time, the existing international architecture for trade and IPR limits national government's policy flexibility to support SSF or use other means to ensure the food security of its population. A revitalization of the public sector must therefore start with a critical examination of how these existing regimes affect food security and the space and capacity needed for governments to effectively play their traditional role of protecting the public interest.

This paper pulls together pieces of this story that are usually addressed independently: the expansion of the market and parallel dismantling of the public sector; the relationship between the resultant trade and IPRs regimes and food security; the role of SSF in contributing to global food security; and the need for a revitalized public sector to play an active role in protecting the interests of its population. Taken altogether, these pieces provide perspective on how we got where we are, and where we need to move next.

Section II of this paper provides background on the expansion of the market as provider of goods and services and the parallel dismantling of the public sector's capacity and role in this regard. This

[2] This paper uses the term "the public sector" "the state" and "national government" interchangeably.

historical context is important for understanding the staying power that neoliberalism has within our global food system today.

Section III describes the evolution of trade and IPR rules as tools of the market and in the context of food security. It describes the dominant narratives that underpin them as well as alternative narratives. In practice trade and IPR rules are not working to ensure food security, as evidenced by approximately one billion people who remain food insecure and the more than one billion who are obese and struggling with chronic health problems. But while the food and financial crises of 2008 and 2011 raised questions about the appropriate role of markets and market-mechanisms, real change has not taken place.

Section IV discusses the importance of SSF to global food security, and hence the value of focusing on that group when looking at the possible effects of a market-centered approach to food security. The impacts of trade and IPR regimes on SSF are then analysed in sequence.

Section V discusses the challenge of shifting the dominant narrative. The example of the G8-funded New Alliance for Food Security and Nutrition is used to illustrate how market-based solutions – oriented towards increasing productivity and 'formal' sector innovation – are at the heart of investment in agriculture today. Trade liberalization and harmonized IPRs are critical components of this strategy.

Moving forward, there is a need to both explore other kinds of socio-technological solutions and innovation pathways, and clearly demarcate and positively assert the role of the public sector in relation to food security.

2 The Expansion of the Market and the Dismantling of the Public Sector

Market Enchantment and Expansion

The dynamics and trajectory of our increasingly globalized food system are heavily influenced by economic beliefs in the superiority of markets and the private sector in providing goods and services of all kinds. These beliefs influence not only how our food systems are governed and regulated but also how as societies we provide goods and services as diverse as prisons, education, infrastructure, security and healthcare.

Free trade and challenge to certain forms of government intervention has its philosophical origins with 18th century "liberal economic" thinkers, the most well known of whom is Adam Smith. Neo-liberal economics emerged in the 1960s and with some differences to its predecessors – such as supporting limited monopolies for patent protection – is an updated version of the liberal economic views of prior centuries[3] [4]. For both, government intervention in general is considered harmful because it reduces economic pressure by restricting the entry of potential competitors through import controls or the creation of monopolies.[5] The core of the neo-liberal agenda is deregulation and the opening up of trade and investment.[6]

The end of the Cold War raised the prestige of markets and "market thinking." No other mechanism had been as successful at organizing the production and distribution of goods and generating prosperity. [7]

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[3] Anne Orford, "Food Security, Free Trade and the Battle for the State" (2015) Journal of International Law and International Relations Vol. 11 No.2, pages 1-67 describes the fascinating evolution of thought and in particular the differences between 18th century and current neo-liberal thinkers.

[4] Sundaram J, Arnim R.: Trade Liberalization and economic development. Science 2009, 323:5911, 211-212; Chang, Ha-Joon, Bad Samaritans: The Myth of Free Trade and the Secret History of Capitalism, Bloomsbury Press, 2008 page 12-13; Ravallion, M: Looking beyond averages in the trade and poverty debate. World Development 2006, 34(8): 1374-1392

[5] Ha-Joon Chang *supra* note 3 at13

[6] Ibid.

[7] Michael J. Sandel, What Isn't for Sale? 2012 The Atlantic http://www.theatlantic.com/magazine/archive/2012/04/what-isnt-for-sale/308902/ last accessed Jan 30, 2016.

"The years leading up to the financial crisis of 2008 were a heady time of market faith and deregulation – an era of market triumphalism. The era began in the early 1980s, when Ronald Reagan and Margaret Thatcher proclaimed their conviction that markets, not government, held the key to prosperity and freedom. And it continued into the 1990s with the market-friendly liberalism of Bill Clinton and Tony Blair, who moderated but consolidated the faith that markets are the *primary means for achieving the public good."*[8][Emphasis added]

As with other areas, the period after the Cold War ended saw the increasing market-orientation of production and exchange of agricultural goods among and within nations correlating with the idea that trade and markets are the best means of achieving food security.[9] [10]

The Dismantling of the Public Sector

The growing prestige of markets and the private sector was paralleled by a gradual dismantling of the public sector as both a regulator and a provider of goods and services. In the United States and parts of Europe, for example, this was the beginning of a proliferation of for-profit schools, hospitals and prisons and even an out-sourcing of war to private military contractors. "These uses of markets to allocate health, education, public safety, national security, criminal justice, environmental protection, recreation, procreation and other social goods were for the most part unheard of 30 years ago. Today, we take them largely for granted."[11] Food security could be added to this list.

The dogma of market and private sector superiority has become so ingrained that even calls for governmental reform rely on the idea that the market knows best. In describing the collapse of the public governing capacity, James Galbraith notes "government administrators now routinely use 'a market solution where markets never existed.'"[12] In a working paper "Economics and the Near-Death experience of Democratic Governance" June Sekera chronicles how the market-centrism of mainstream economics played directly into political and popular media views of government as incompetent and inefficient.[13] As Sekera details, for both those wanting to shrink government and those wanting to reform it, "fixing" government means re-making government in the image of the market.[14]

Some have challenged the myth of public sector failure and incompetence. In his book *The New Case for Bureaucracy*, Charles Goodsell disputes the dogma of incompetence and shows how government has performed both complex and routine tasks efficiently and effectively.[15] New York Times columnist Paul Krugman details how government has been more efficient than the private sector in providing social security and healthcare.[16] Allan Rosenbaum writes that government has not failed, but public administrators have, by "being hesitant to speak of the central importance of what we are

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[8] Ibid.

[9] Food security is defined as "a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life." See http://www.fao.org/docrep/005/y4671e/y4671e06.htm

[10] It is important to note that while arguing for "free" trade generally, wealthier countries push for free trade in areas they are stronger but not where they are wealthier countries push for free trade in areas where they are stronger, but not where they are weaker as is the case for agriculture.

[11] Sandal, supra note 6 at 3

[12] James Galbraith, *The Predator State: How Conservatives Have Abandoned the Free Market and Why Liberals Should Too;* Free Press; 2008, pap 148.

[13] June Sekera, Economics and the Near-Death Experience of Democratic Governance, May 2015, GDAE Working Paper No. 15-02

[14] Ibid at 2.

[15] Cited in Sekera at 4.

[16] http://krugman.blogs.nytimes.com/2013/09/12/insurance-company-with-an-army-blogging/?_r=2 "Non-defense spending is dominated by Social Security, which is highly efficient; Medicare, which could do better, but is more efficient than private insurance; and Medicaid, which is much more cost-effective than private insurance. I'm sure that if you look through nondefense discretionary spending you'll find some waste, but no more than in any large organization."

about boldly, loudly and effectively…while practitioners in the private sector and business school faculty glorify the power and creativity of the American private sector."[17]

One example of what dismantling of the public sector looks like in practice is legislative reforms to privatize publicly funded research. The Bayh-Dole Act, enacted in the United States in 1980, allows grant recipients to patent outputs of federally funded research. This effectively limits the government's ownership over new technologies developed using public funding and grants ownership to private organizations, often university institutions. Many countries have introduced legislative reforms modelled on this Act to promote the commercialization of inventions.[18] These include OECD countries (e.g. Canada, Denmark, France, Germany, Ireland, Japan and Spain[19]), countries in transition (e.g. China and South Africa), and developing countries (e.g. Malaysia[20]).

3 Trade, Intellectual Property Rights and Food Security

The Establishment of an International Architecture in Trade and IPR

In recent decades there have been significant parallels between the evolution of multilateral trade rules and IPR regimes as they relate to agriculture and food systems. The establishment of the World Trade Organization (WTO) in 1995 and the enactment of the Agreement on Agriculture (AoA) in the same year represented a watershed moment, where, having historically enjoyed exemption from the application of General Agreement on Tariffs and Trade (GATT) requirements, agriculture was brought into the fold of trade liberalization and subjected to the multilateral trading rules.[21] The long-term objective of the AoA is to "establish a fair and market-oriented agricultural trading system." The underlying premise of the market approach embedded in the AoA is that the removal of state support for and protection of agricultural production is the best way to achieve food security in the long-run.[22]

Another Agreement of the WTO, the Agreement on Trade-related Aspects of Intellectual Property (TRIPS), signed in 1994 and adopted in 2001, brought intellectual property within framework of global trade rules for the first time. Prior to the adoption of TRIPS, there was general expansion in the strength, reach of IPRs in industrialized countries, with biological materials and processes becoming included in many IPR regimes. The TRIPS Agreement reflects the push for the global harmonization of standards, and decreased flexibility for Member States to trade regimes in terms of developing national IPR regimes.

Together with WTO agreements on trade in services[23] and the harmonization of public health and safety regulations[24] the WTO agreements might as easily be called a governance regime as a trade regime[25].

It is important to note that neither trade rules nor IPR regimes were established with the goal of achieving food security. Nevertheless, proponents of trade liberalization and of strengthened and/or expanded IPR invoke both as important tools for its realization:

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[17] Cited from June Sekera, page 4, Allan Rosenbaum, The Myth of the Public Sector

[18] Graff, G. D., Krattiger, A., Mahoney, R. T., Nelsen, L., Thomson, J. A., Bennett, A. B., ... & Kowalski, S. P. (2007). Echoes of Bayh-Dole? A survey of
and technology transfer policies in emerging and developing economies. *Intellectual property management in health and agricultural innovation: a handbook of best practices, Volumes 1 and 2*, 169-195.

[19] Mowery, D. C., & Sampat, B. N. (2005). The Bayh-Dole Act of 1980 and university-industry technology transfer: a model for other OECD governments?. In *Essays in honor of Edwin Mansfield* (pp. 233-245).

[20] Graff, G. D., Krattiger, A., Mahoney, R. T., Nelsen, L., Thomson, J. A., Bennett, A. B., ... & Kowalski, S. P. (2007). Echoes of Bayh-Dole? A survey of IP and technology transfer policies in emerging and developing economies. *Intellectual property management in health and agricultural innovation: a handbook of best practices, Volumes 1 and 2*, 169-195.

[21] Gonzalez, C.G. 2002. 'Institutionalising inequality: the WTO Agreement on Agriculture, food security, and developing countries.' *Columbia Journal of Environmental Law* 27. p.440

[22] Ibid pg 55

[23] General Agreement on Trade in Services, April 15, 1994 [GATS].

[24] Agreement on Sanitary and Phytosanitary Measures, April 15. 1994 [SPS Agreement]

[25] Orford *supra* note 2 at 59

- ✓ Advocates of trade liberalization argue that food security is enhanced under an open trade model. Specifically, trade liberalization promotes more efficient agricultural production, which results in increased food supply and lower food prices. In other words, they argue that more open trade policies should make food both more available *and* more affordable.[26]
- ✓ Those who promote IPR argue that the development and dissemination of appropriate agricultural technologies and new plant varieties is essential to keep pace with the world's ever-increasing food needs. Advocates argue that the required development and dissemination depends upon the incentives for investment provided by IPR frameworks.[27]

The argument for trade liberalization and stronger and harmonized IPRs is embedded in a broader debate about the proper relationship between the state and the market.[28] Advocates for trade liberalization as the best means to ensure food security advocate for a form of governance that allows the maximum freedom for the laws of the market to unfold.[29] "The production of food and the relation of this production to land and labour are at the heart of politics, and yet the conscious attempt to institute democratic control over these features of social life is made to seem illegitimate—a barrier to trade, protectionist…"[30]

It could be argued that the limitations on domestic policy were negotiated by the states themselves and was a considered ceding of flexibility. Two things are worth considering in evaluating the merits of this argument. 1) Trade and IPR agreements are the result of political negotiations where there are enormous differences in bargaining power;[31] and 2) most modern trade agreements are negotiated in secret with the terms of the negotiation not made available to the public and limited space for democratically elected parliaments to intervene. Private industry does play a significant role influencing the direction and text in trade negotiations.[32]

The Impact of Market-based Tools on Food Security

Trade and IPRs have been instrumental in influencing the evolution of the modern, industrialized food system. Industrialized food systems characterized by monocultures and high-cost (environmentally and economically) inputs have displaced more diversified systems of agriculture. Wise and Murphy note that trade and IP rules continue to show a prevailing bias towards external technologies, little evidence of prioritizing domestic food markets, an acknowledgement of climate change but limited action, and little evidence of a shift towards low-input agriculture.[33]

In addition, market-based solutions are often tied into technological solutions, where technologies are developed and disseminated to solve problems. There is a need to change the framework within which the conversation takes place. To tackle hunger and achieve food security, a wider search for socio-technological solutions and innovation pathways is required. The paradigm must shift from a linear model of inputs and outputs, where farmers are potential customers, to an integrated, relationship-oriented approach. Once space begins to open up here, market-based tools (i.e. trade and IPRs) will not be the default strategy for achieving progress towards food security. The focus will instead turn to how an enabling environment may be created that encourages the type of innovation that is in the public interest.

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[26] Clapp, Jennifer (2014) Trade Liberalization and Food Security: Examining the Linkages. Quaker United Nations Office, Geneva.
[27] http://www.wipo.int/policy/en/food_security/
[28] Orford *supra* note 2 at 55
[29] Ibid at 4
[30] Ibid
[31] The difference in the physical size of the delegations attending trade or IPR negotiations from industrialized versus less developed countries is another indication of this disparity. In multilateral negotiations there are often simultaneous working sessions on different issues such that a delegation of one or two people cannot physically cover what is going on.
[32] John Braithwaite and Peter Drahos, *Global Business Regulation* (Cambridge: Cambridge University Press, 2000).
[33] Timothy A. Wise and Sophia Murphy (2012) "Resolving the Food Crisis: Assessing Global Policy Reforms since 2007." Global Development and Environment Institute for Agriculture and Trade Policy, at 28

How is this approach to achieving food security working? With almost one billion people hungry and an equal if not greater number over-consuming with corresponding chronic health diseases, it seems safe to say that today's global food system is not working for the majority of the world's people.

Producing enough food in the world and trading so that everybody can potentially be fed is not the same as food security.[34] The world already produces plenty—roughly a third more food for each of us than in the 1960s.[35] Even after feeding to livestock a third of global grain production, 90 percent of all soy meal, and a third of the fish catch, there is still a global average of roughly 2,800 calories available per person per day.[36] This is the market allocating grain, with grain going to those with an ability to pay[37].

The emergence of high-input high-yield agriculture and trade through rapid long-distance transport has increased the availability and affordability of refined carbohydrates (wheat, rice, sugar) and edible oils.[38] The shift from diverse cropping systems to simplified, mainly cereal-based systems, despite its contribution to feeding a growing world population, contributes to imbalanced diets. While this may make greater numbers of the population secure in terms of calorific intake, this "modern" food system also underpins the current nutrition transition towards over-consumption and associated chronic diseases.

Trade liberalization is premised on increasing production and producing what is in a country's comparative advantage to produce, trading for what is not in its advantage to produce. Beginning with structural adjustment programs, followed by trade and investment rules, developing countries throughout the 1980´s and 1990´s put into practice the theory of comparative advantage, to the disadvantage of both domestic food production capacity and diversified agricultural systems.[39] This approach has led to a reliance on international trade to meet domestic food needs resulting in rising import dependence and declining local production; a bias towards cash crops for export over food production for domestic markets; and support for high-input agricultural methods over diversified and more environmentally sustainable low-input systems.[40]

Any solution to food security that focuses on production is missing the concept that at its core, food security is more about poverty and inequality than it is about production.[41] [42] Ironically, roughly 70% of the almost one billion people who are chronically hungry are themselves involved in food production as SSF or agricultural labourers.[43] According to UNCTAD's Trade and Environment Review 2013: *Wake Up Before It Is Too Late*: "hunger and malnutrition are not phenomena of

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[34] Presumably in accordance with a country's comparative advantage to grow particular crops and then trade them for what they do not have a comparative advantage to grow.

[35] FAOSTAT Food Production, Net Per Capita. Index 100 = 2004-2006. In the 1960s, the Index Number was between75-77; whereas in 2010 it was 105.
http://faostat.fao.org/site/612/DesktopDefault.aspx?PageID=612#ancor (FAO's estimate of calories available show a 22 percent increase from the mid-1960s to 2007, the latest year for which data is provided.)

[36] For 2007, the most recent year available, the UN Food and Agriculture Organization estimates 2796 calories per capita per day. See FAOSTAT, Food Balance Sheets.
http://faostat.fao.org/site/368/DesktopDefault.aspx?PageID=368#ancor

[37] This does not take into account the grain used for biofuels to "feed" automobiles.

[38] World Health Organization 2002

[39] See Section IV below

[40]" Resolving the Food Crisis: Assessing Global Policy Reforms since 2007" Timothy Wise and Sophia Murphy, Global Development and Environment Institute for Agriculture and Trade Policy.

[41] The world already produces plenty—roughly a third more food for each of us than in the 1960s, see FAOSTAT Food Production, Net Per Capita. Index 100 = 2004-2006. In the 1960s, the Index Number was between75-77; whereas in 2010 it was 105.

[42] The bulk of industrially produced grain crops goes to biofuels and to confined animal feedlots rather than food for the 1 billion hungry people. The need to double food production only applies if the priority is feeding the growing population of livestock and cars rather than hungry people.

[43] Michael Herrmann, *Food Security and agricultural development in times of high commodity prices: UNCTAD Discussion paper No 196,* November 2009, 7.

insufficient physical supply, but results of prevailing poverty, and above all, problems of access to food."[44]

The food riots experienced during the Arab Spring, or those in Mexico, Bolivia, Uzbekistan, Pakistan, South Africa and Sri Lanka in 2007-2008 or in India and Mozambique in 2010 to name just a few, were riots about the entitlement regimes that shape access to food in those countries. For the purposes of this paper, the critical point is that the shape of entitlement regimes developed by governments is constrained by international rules. Trade and IPR rules limit national government's policy flexibility to support SSF or use other means to ensure the food security of its population.

Pascal Lamy, the former Director General of the WTO said, "Trade is part of the answer, not part of the problem."[45] The point that trade will be *part* of the answer is well taken. However ensuring that trade is not problematic necessitates regulating trade appropriately and ensuring governments have the capacity and flexibility to design food security measures as appropriate for their countries.

The Financial Crises of 2008 and Food Security

The financial crisis of 2008 was also a major global food crisis and called the faith in markets and "market-thinking" into question. When in 2008 a concurrence of factors – including price spikes, rapid increases in the use of agricultural crops and land for energy, low levels of publicly held stock of key food crops, a long-run slow-down in yield increases for key food crops, and the possible contribution of climate change to drought and other environmental factors – hit developing countries it was biologically impossible to quickly shift focus back to domestic production to feed their populations. At the same time other wealthier countries that had been counted on to export food, particularly cereals, were closing their borders to export in order to ensure the food security of their own populations.[46]

The food and financial crisis opened up the debate about the role of markets and provided an opportunity to explore more closely the balance between market mechanisms and government action in various sectors. It focused attention on the governance of food and agriculture on issues that had been neglected for years or not really considered at all, including the need for public sector investment, the importance of small-scale producers, and sustainable versus high-input agriculture.[47]

The question in 2016 is: has the opening of the debate resulted in any shifts in the dominant, market-based narrative in addressing food security? Has it resulted in a greater understanding of when and where there is a need for strong public governing capacity, and has that need been met? Looking at food security, it has not appeared to result in significant shifts away from a market-based approach. Wise and Murphy (2012) note that while policy discussions have become more open to debate about the role of the public sector and the role of SSFs in agriculture, there is little correlation to concrete action. Furthermore, the role, relationship and boundaries between the private and public sector in providing food security have not been thoroughly explored and remains poorly understood.

Alternative Narratives

Trade Liberalization

Advocates for trade liberalization might argue the problem is that trade is not free enough and if there were less intervention by governments, trade would work better at ensuring food security. There are two problems with this argument. One, markets are always going to look for the ability to pay and not those most in need. Two, perhaps more importantly, as noted by Polyani in 1944, there is no such thing as a free market.[48] He calls the very idea of an economy independent of government and political

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[44] UNCTAD *supra* note 52 166.
[45] Director-General Lamy from his opening address to the Berlin Agriculture Ministers' Summit on January 22, 2011.
[46] Wise and Murphy *supra* note 49
[47] Ibid at 13
[48] Polanyi, K. (2001). *The Great Transformation: The Political and Economic Origins of Our Time*, 2nd ed. Foreword byJoseph E. Stiglitz; introduction by Fred Block. Boston: Beacon Press.

institutions a "stark utopia"—utopian because it is unrealizable, and the effort to bring it into being is doomed to fail and will inevitably produce dystopian consequences.[49] Polanyi argues that, while markets are necessary for any functioning economy, attempts to create a *market society* threaten human society and the common good. When all of what makes life possible – including clean air and water, education, health care, personal, legal and social security, and the right to earn a livelihood – is subject to market principles and treated *as if* they are commodities produced for sale rather than protected rights, major crises will ensure.[50]

A 2014 paper by Jennifer Clapp examined the linkages between the main arguments for trade liberalization and food security.[51] The paper challenged the notion that more trade leads to more food security for all, noting the importance of context and the need for policy space that strikes a balance between multiple social goals. Social goals include meeting efficiency objectives, securing farmer livelihoods, ensuring environmental sustainability and realising the right to food by strengthening food security – considered "non-trade" concerns within the Agreement on Agriculture.[52]

Nutritionists, the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO) are now promoting the need to diversify agro-ecosystems, in order to ensure that farming systems support more diverse healthier diets. Agro-ecological methods offer an alternative to conventional, industrial intensification that maintains biodiversity and environmental quality rather than degrading it; strengthening the sustainability of food production rather than threatening it.

Intellectual Property Rights

There has been increasing scepticism within civil society and some parts of the private sector about the importance of IP protection in agricultural innovation generally, but particularly in less developed countries.[53] Some argue that IP in agriculture has actually inhibited innovation, by:

- Encouraging the cultivation of a narrow range of genetically uniform crops;
- Limiting farmers' ability to access and exchange seed; and
- Restricting the circulation and traditional exchange of plant genetic resources.

Critics argue that these three factors undermine the welfare and productivity of SSF, compromising global food security.

The concept of food sovereignty[54] rejects the privatisation of natural resources and traditional knowledge through laws, commercial contracts and all forms of intellectual property rights regimes. This alternative narrative promotes the positive interaction between food providers across regions, territories and sectors, while IP serves to limit the free exchange of resources and knowledge.[55] Restricting access to and limiting the derivative right to use protected material that originated in the public domain is understood as a failure of reciprocity and contrary to the public interest.[56] Another

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[49] Henry Farrell, *The Free Market is an Impossible Utopia*. July 18, 2014 https://www.washingtonpost.com/news/monkey-cage/wp/2014/07/18/the-free-market-is-an-impossible-utopia/ last accessed January 28, 2015.

[50] Ibid

[51] Clapp *supra* note 28

[52] The sixth paragraph of the Preamble to the Agreement on Agriculture (AoA) notes non-trade concerns "including food security and the need to protect the environment."

[53] See, for example, Jorge Niosi (2010) Rethinking science, technology and innovation (STI) institutions in developing countries, Innovation, 12:3, 250-268

[54] "Food Sovereignty, encompassing: right to land and water; restoration of the right to exchange and breed seeds and livestock; repatriation of seeds; elimination of regulations blocking local markets and diversity; fair trade; reorientation of public R&D to promote agro-ecology and address peasant needs." ETC Group With Climate Chaos, Who Will Feed Us? The industrial food chain or the peasant food web. See the Annex to this report for a table summarizing the development of the concepts of food security and food sovereignty over time.

[55] Declaration of Nyéléni (2007). http://nyeleni.org/spip.php?article290

[56] Kloppenburg, J. (2014). Re-purposing the master's tools: the open source seed initiative and the struggle for seed sovereignty. *Journal of Peasant Studies*, *41*(6), 1225-1246.

aspect of food sovereignty is that trade and intellectual property rules must not be allowed to infringe upon a country's ability to have policies and rules that it considers appropriate for its national food security.[57]

Alternative narratives also recognize the difference between SSF innovation systems and more 'formal' agricultural innovation systems.[58] SSF innovation is less formal and depends upon social relationships; includes a broader definition of innovation; and is driven by much more than commercial opportunity.[59] These differences oblige a reconsideration of the types of policies that are put in place to encourage innovation in agriculture. Creating incentives for private sector investment by creating strong IPR regimes, ensuring open access to markets and increasing technology adoption rates among farmers may not support the innovative activities of SSF.[60] Alternative strategies may be more appropriate and effective in nurturing the innovation that happens on farm, driven by farmers.

Putting SSF innovation at the center in considering policy options does not exclude collaborative research efforts. Indeed, synergies between 'formal' sector actors, particularly public research institutions, and small-scale innovation systems are likely to be important to the health and resilience of food systems. The point is to ensure the synergies empower SSF and represent collaboration and partnership and do not cause the displacement of SSF. Ensuring relationships are equitable and do not displace SSF – a group serving not only private but public interests – is the role of the public sector and public policy.

4 The Relationship between Market-based Tools and SSF

The Contribution of SSF to Food Security

Estimates of the number of SSF worldwide are generally around 1.5 billion, with their contribution to world food production somewhere between 50 and 70 percent,[61] [62] using only 30 percent of agricultural resources[63] and occupying less than 25 percent of the world's farmland.[64] In developing countries, it is estimated that SSFs produce over 80 percent of the food consumed.

Understanding the importance of SSF is not intended to pit the large versus the small or the commercial versus the subsistence as either/or situations but to help better understand the importance of SSF and systems that currently do not receive adequate attention in policy discussions relating to food security.[65] Building understanding of the need to involve SSFs in the multilateral policy dialogues related to food security, and building capacity in that regard, is critical.

SSFs are important not just because as a population they are amongst the most food insecure, but also because:

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[57] Holt-Giménez, E. 2010. Food security, food justice, or food sovereignty? Food First Backgrounder, Institute for Food and Development Policy, Vol.16 No.4

[58] Susan H. Bragdon and Chelsea Smith (2015), Small-scale farmer innovation, (Quaker United Nations Office, Geneva). http://quno.org/sites/default/files/resources/SSF%20Innovation%20WEB.pdf

[59] Chelsea Smith, QUNO (2015). "Small-scale farmer innovation systems: A review of the literature." http://quno.org/sites/default/files/resources/SSF%20Innovation%20Systems%20-%20Literature%20Review.pdf

[60] Ibid

[61] Altieri, M.A. 2012. *The scaling up of agroecology: spreading the hope for food sovereignty and resiliency.* SOCLA's Rio+20 position paper. p.4

[62] Wolfenson, 2013. p.21

[64] If China and India are excluded, small-scale farmers occupy only 17 percent of the world's farmland. GRAIN (2014) "Hungry for land: Small farmers feed the world with less than a quarter of all farmland." https://www.grain.org/article/entries/4929-hungry-for-land-small-farmers-feed-the-world-with-less-than-a-quarter-of-all-farmland

[65] Progress is being made. After the financial and food crisis of 2008, the Food and Agriculture Organization and the International Fund for Agricultural Development reformed the World Committee on Food Security. While states remain the ultimate decision makers, the Committee is "the foremost inclusive international and intergovernmental platform for all stakeholders to work together to ensure food security and nutrition for all." http://www.fao.org/cfs/en/

- Most developing countries are agriculture-based economies where smallholder farmers account for over 75% of employment.
- Half the food produced today comes from 1.5 billion farmers on small plots of land. The largely IP-protected genetic resources (GR) that make up the monocultures of industrialized farming are not viable or sustainable in this context.
- The diversity of GRs continues to evolve through the work of SSF in their fields. These in situ GRs far out-number those in ex situ collections and are understood ("characterized") by the farmers managing them as they continue to evolve. This is particularly important today as the effects and uncertainties of climate change become increasingly manifest.
- In situ GR and associated traditional (yet dynamic) knowledge (TK) systems are integral to breeding and crop improvements that have potentially global implications.
- GR and TK offer social and economic opportunities that contribute to livelihoods and to social and cultural values.
- GR are a major contributor to nutrition and health through its direct use. The World Health Organization estimates that in many developing countries up to 80 percent of the population relies on plant genetic resources for primary health care.
- Ecological processes such as the maintenance of water cycling, soil fertility, pollination, seed dispersal and nutrient cycling all rely to a greater or lesser extent on agricultural biological diversity.

SSFs develop and maintain the agricultural biological diversity that provide the foundation for evolution and hence resilience and ability to adapt to climate change, emerging and increasingly mobile pests and diseases, and other environmental change. In this way SSFs are providing public goods, in the public interest. However they should not and cannot be expected to subsidize global welfare without incentives or external support. This is a matter for public policy.

The Impact of Global Trade on SSF

Despite the significance of SSF, the current momentum at the multilateral level is moving against small-scale food production as a means of feeding the world sustainably. Partly in response to the lack of progress in the Doha round of trade negotiations, bilateral, regional and more recently, 'mega-regional' free trade agreements are being concluded among countries with large disparities in economic development.[66] The agreements generally do not benefit SSF. Depending on the terms agreed, such agreements may open up domestic markets to cheap products exported by countries whose agricultural sectors are heavily subsidised. Because of their artificially low prices, these products may undercut the ability of domestic producers to compete in their own markets. The North American Free Trade Agreement (NAFTA) resulted in the unemployment of an estimated two million Mexican maize farmers for exactly this reason.[67] Having in many cases driven already vulnerable farmers off their land in the short term, a liberalised trade environment without adequate protection for SSF has a longer-term effect. As Peter Rosset notes: "As crop prices stay low over the medium term, profits per unit area – per acre or hectare – stay low as well. That means the minimum number of hectares needed to support a family rises, contributing to abandonment of farm land by smaller, poorer farmers – land which then winds up in the hands of the larger, better off farmers who can compete in a low price environment by virtue of having very many hectares"'[68]

A liberalized trade environment encourages the uptake of practices typical of large-scale farming: mono-cropping, mechanisation of labour and increased use of agrochemicals,[69] all of which have serious implications for soil health, biodiversity and rural employment. Although it is conventional wisdom that these large-scale units are more productive, economists have long demonstrated that

[66] See Draper, P. et al, 2014. *Mega-regional trade agreements: implications for the African, Caribbean, and Pacific countries.* ECIPE Occasional Paper No.2/2014
[67] Thirlwall, A.P. 2012. 'The rhetoric and reality of trade liberalisation in developing countries.' *Rivista Italiana Degli Economisti*, Vol. 18. pp.3-24
[68] Rosset, P. 2000. 'The multiple functions and benefits of small farm agriculture in the context of global trade negotiations.' *Development* 43:2, p.81
[69] Ibid.

smaller farms are more productive in tons per hectare.[70] Furthermore, there are further benefits of small-scale agriculture sometimes not addressed by these studies - in resource efficiency (e.g., yields per unit of water or energy) and environmental externalities (e.g., reduced greenhouse gas emissions, reduced soil erosion, agro-ecosystem services, and biodiversity conservation).[71]

Problems arise when the pervasive misconception that large-scale agriculture is more efficient is combined with the current practice of pursuing agricultural development through trade agreements. While SSFs are often dynamic actors who respond rapidly to economic incentives and perceived risks, a more globalised economy exposes them to factors beyond their sphere of information. Liberalization may offer opportunities under the right circumstances, but without the right policy and legal frameworks in place, the relatively fragile situation of many SSF means that they are more vulnerable to the broader market risks that accompany those opportunities.[72] Their greater vulnerability is likely to continue unless other measures of support – e.g., ensuring access to assets like land, extension services, seeds and credit – are put in place.[73] Once again, there is a need for a more rigorous analysis of what needs to be provided by government and public policy to support SSF and what this means for how trade is regulated.

The need for action in creating policy coherence between food security policy measures that support SSF and trade rules is urgent[74]. In the current landscape however, change appears unlikely to come from within existing trade regimes. Furthermore, those institutions mandated with ensuring food security are at present falling short of achieving this aim, partly due to the politicized nature of trade governance. The Civil Society Mechanism of the World Committee on Food Security (CFS) has repeatedly raised the need for the CFS - as the world body charged with ensuring global food security - to take up the issue of the relationship between trade rules to food security. Trade is being raised more frequently by government delegations and at side events at the CFS. Alliances with other organizations pursuing related mandates (employment, nutrition and health etc.) is likely to be important in continuing to encourage the CFS to take a more active role in influencing trade rules in the interest of food security.

The Impact of Intellectual Property Rights on Small-scale Farmers

The current multilateral intellectual property landscape is to a large extent unfavourable or at best neutral to small-scale farmers.

The creation of new, locally suitable crop varieties by mixing new and traditional varieties is arguably the most critical innovative activity relating to food security and the maintenance of on-farm biodiversity. Yet, IPRs regimes do not address the concerns of SSF who are the central actors in this innovation. SSF's position on the front-line of global climate and other environmental change makes it even more vital that these types of innovative activities and management systems are protected, promoted and practised.

The concern is that strengthened plant variety protection (PVP) and breeders' rights that extend breeders' control to the harvest of the farmer's crop can:

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[70] De Schutter, O. and Vanloqueren, G. 2011. 'The new green revolution: how twenty-first century science can feed the world' *Solutions* 2(4) article examined yields in terms of tons per acre.

[71] Mueller, N. D., Gerber, J. S., Johnston, M., Ray, D. K., Ramankutty, N., & Foley, J. A. (2012). Closing yield gaps through nutrient and water management. *Nature*, *490* (7419), 254-257.

[72] von Braun, 2005. 'Small-scale farmers in liberalised trade environment' In: T. Huvio, J. Kola and T. Lundström (eds.) *Small-scale farmers in liberalized trade environment*. University of Helsinki, Department of Economics and Management Publication No.38. pp.

[73] IFAD. 2013. *Smallholders, food security, and the environment.* Available online URL: http://www.ifad.org/climate/resources/smallholders_report.pdf

[74] The Quaker United Nations Office (Geneva) has developed an interactive policy tool to help decision-makers and SSF policy coherence between trade and food security policy measures. In particular, its goal is to help illuminate possible trade-offs so that trade rules do not undermine the ability of country's to pursue food security measures they identify as important to their country.
http://quno.org/sites/default/files/resources/QUNO%20Project%20Brief_Interactive%20Trade%20Tool%20December%202015.pdf

- Disrupt the informal seed system;
- Cause the loss of landrace varieties; and
- Restrict the right of farmers to share, use and save seed from their harvests.[75]

IPRs potentially negatively affect SSFs indirectly if they limit the accessibility of publicly funded research. The mandate of the Consultative Group on International Agricultural Research Consortium (CGIAR) has traditionally been to create international public goods – goods and services kept in the public domain, available to anyone globally – through investment in agricultural research that targets poor farmers in developing countries in particular. The CGIAR Reform[76] in 2010 created CGIAR Research Programs (CRPs) that include private sector partners in order to broaden the impact of their research and span entire value chains from research to distribution.[77] Collaborating with private sector partners has meant that the CRPs make use of proprietary technologies in their research and allow some outputs to be subject to IPRs. The argument is with more agricultural research being undertaken by the private sector, particularly in industrialized countries, the CGIAR increasingly need to engage with private sector partners to achieve its mission to reduce rural poverty, improve food security, nutrition and health and improve the management of natural resources[78]. There has been a move away from the concept of public goods and towards ensuring access through appropriate IPR policies and the judicious exercise of those rights. This has created challenges to producing goods freely available to small-scale farmers,[79] and a departure away from the original mandate to produce international public goods.

Discussions about agricultural innovation tend to neglect innovation by farmers themselves, concentrating instead on farmers' adoption of what is argued to be more productive, profitable and resource-efficient tools and practices, developed within and disseminated by formal institutions.[80]

Article 7 of the TRIPS Agreement refers to the need for an approach that strikes a balance between "creators" and "users" of products of knowledge. The notion of industrialized countries in the North as the creators of technology and the less developed countries of the South as the users of technology is a limited view and definition of both innovation and technology. Talking about the innovative activities of SSF also challenges the idea that innovation is geographically restricted but occurs in different forms globally. There are more forms of innovation than IPR typically address, which raises the questions:

- Are different forms of innovation being treated equitably?
- What is the nature and purpose of international IP regimes?
- Are international IP regimes inadvertently having a negative impact on SSF and food security?
- What forms of innovation need to be protected as a matter of food security and the public interest?
- What are the best tools to incentivize and support these forms of innovation?

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[75] Under the Union for the Protection of New Varieties of Plants, protected varieties are generally available for use for the breeding of new varieties though there are complexities introduced by the concept "essentially derived varieties" and the "legitimate rights of the breeder." [cite] Nevertheless, if informal seed systems are disrupted and replaced by only more formal systems of supply, small-scale farmers may find they have access only to protected varieties where their ability to save, exchange and use them in future seasons is increasingly limited. See also, Kuylek, D. 2002. *Intellectual Property Rights in African agriculture: implications for small farmers.* GRAIN Briefing Paper.

[76] See http://www.cgiar.org/who-we-are/history-of-cgiar/cgiar-reform/

[77] https://library.cgiar.org/bitstream/handle/10947/2617/The_Intersection_of_Public_Goods_Intellectual_Property_Rights_and_Partnerships_Maximizing_Impact_for_the_Poor.pdf?sequence=1

[78] http://www.cgiar.org/our-strategy/

[79] https://library.cgiar.org/bitstream/handle/10947/2617/The_Intersection_of_Public_Goods_Intellectual_Property_Rights_and_Partnerships_Maximizing_Impact_for_the_Poor.pdf?sequence=1

[80] See for instance Shiferaw et al. 2009. 'Adoption and adaptation of natural resource management innovations in smallholder agriculture: reflections on key lessons and best practices', Environment, Development and Sustainability 11. 601-619

- What are the appropriate roles for market mechanisms, the private sector and government in protecting the identified clusters of innovation and what does that mean for public policy?

The key challenge is designing a coherent legal regime that supports all types of innovation and management systems, including those of SSF.[81] It is an open question whether some form of IP regime is either the necessary or the most appropriate tool for supporting SSF innovation.

Though there is some recognition of the value of smallholder agriculture at the multilateral level, the tools and treaties available are not yet sufficient for protecting and supporting SSF. At the Twenty-sixth session of the World Intellectual Property Organization (WIPO) Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC)[82] in February 2014, the Quaker United Nations Office hosted a side event with representatives from the TRIPS Secretariat, the International Treaty on Plant Genetic Resources for Food and Agriculture (the International Treaty), the Convention on Biological Diversity (CBD) and Bioversity International. Each panellist was asked how their treaty addressed small-scale farmer innovation and in the case of Bioversity International, what its experience was of these treaties in its work with small-scale farmers. Tellingly, the panellists' conclusion was that none of the treaties recognizes innovation by small-scale farmers.

The WIPO IGC is not constituted in a manner as to focus on support to farmers' innovation systems. Having struggled to reach consensus on a number of key issues, the IGC's entire existence has been under pressure from States wishing to dispense with it. At the time of writing however, the IGC's mandate has been renewed for a further two years, to 2017.[83] WIPO's Committee on Development and Intellectual Property (CDIP) also has not focussed on SSF innovation systems or examined how the formal innovation system can relate to informal ones. While in theory it is possible that CBD and the International Treaty could create an enabling environment to support SSF innovation, as yet this has not been the CBD's focus, and the International Treaty is only likely to be able to address it through Article 9 on Farmers' Rights or the Treaty's benefit-sharing fund – an initiative that has thus far been voluntary.

5 The Challenge of Shifting the Narrative

The Institutional Challenge

Some progress has been made. As highlighted earlier, the 2008 food price crisis did open up the debate on the role of markets, including trade and IP, in international organizations and fora with working on agriculture and food security.[84] There has also been an increase in public funding of agricultural research in developing countries. The FAO held its first International Symposium on Agro-ecology in 2014 raising the concept's legitimacy in international institutions,[85] and there has been an increase in the numbers of projects with a focus on SSF.

Nevertheless, the dominant approach with its focus on market-based solutions and public-private partnerships, where the role of the public sector is limited, remains the norm. So for example, while there are intergovernmental bodies, such as the CFS and the FAO, much of the funding that affects the

[81] For a useful summary, see: Wynberg, R. and Pereira, L. 2013. *Whose innovation counts? Exploring the interface between informal and formal innovation in seed development in South Africa.* From the conference: 'The business of social and environmental innovation', held at Graduate School of Business, Cape Town, 25-26 Nov 2013

[82] WIPO IGC is mandated with reaching agreement on texts of international legal instruments to ensure the effective protection of traditional knowledge, traditional cultural expressions and genetic resources.

[83] http://www.ip-watch.org/2015/10/15/wipo-assembly-extends-talks-on-traditional-knowledge-design-sets-policy-for-new-offices/

[84] Wise and Murphy *supra* note 49 at 13

[85] http://www.fao.org/about/meetings/afns/en/

direction of food systems take comes from bodies like the Group of 8 (G8)[86] and private philanthropic foundations.

In 2012, the G8 launched the New Alliance for Food Security and Nutrition "to achieve sustained, inclusive, agriculture-led growth in Africa."[87] The New Alliance's approach is to galvanize the private sector and engage in public private partnerships to address food security and nutrition in Africa. The orientation is towards market-based and technical fix solutions, with the technical fix seen in a linear, input-output model for development and the farmer as a customer/client. With a market-based approach, this orientation begs the question: who does the initiative benefit and whom does it leave out and what does this mean for food security?

How the problem is framed shapes how the problem is solved. The New Alliance is overly focussed on overcoming narrowly defined technical and market challenges. These are of course very real and should not be underestimated. It is what is *not* brought to the table that is of concern, and that is the political, social and institutional issues at play. This failure at least in part reflects the exclusionary nature of the New Alliance as compared to other intergovernmental bodies such as CFS.

Outside of resourced-endowed agricultural areas, where roads, irrigation systems and other infrastructure are well developed, the achievements of the 'market modernism' vision of agriculture is likely to be low. This is a particular issue for Africa because those missing out from mainstream, market-based approaches represent the majority of Africa's population. The Africa Progress Panel, headed by Kofi Annan, noted that the impressive economic growth in Africa would be put at risk unless action is taken to combat rising inequality. He expressed concern for a two-track Africa that will not bring long-term sustainable development and food security to all. It is here the public sector becomes key. Attention to the need for a strong public sector is simply not the focus of the New Alliance or other similar initiatives. Without this consideration, it is hard to see how Annan's concerns about creating two-track Africa will be avoided, because there will be no mechanism to look out for those most in need.

The Challenge Embedded in Trade and IPR Rules and Orientation

Market-based solutions like those proposed by the New Alliance have two key orientations in common with the dominant trade and IPR narratives discussed earlier:

- Market-based solutions focus on basic supply and demand issues as the causes of food insecurity, prioritizing increased productivity as a response.[88]
- Technical solutions require incentives for innovation and are often envisioned as a linear, input-output process with the farmer as the "client."[89]

These orientations limit and shape their impacts. They fail to take into account a number of broader realities, including: the role of international macroeconomic and other driving forces; the fact that distribution rather than scarcity is the core issue; and the important role farmers play as innovators, in terms of management practices and in the development and deployment of agricultural biodiversity. Such a partial understanding renders these incomplete as policy responses to food insecurity. Most significantly, this orientation fails to directly challenge the assumptions about the role of markets and the private sector that underlie the arguments for trade liberalization and strengthened IPR. It also

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[86] The G8 or Group of Eight refers to the group of eight highly industrialized nations—France, Germany, Italy, the United Kingdom, Japan, the United States, Canada, and Russia—that hold an annual meeting to foster consensus on global issues like economic growth and crisis management, global security, energy, and terrorism.

[87] See, https://new-alliance.org/about last accessed on Jan 30, 2016. The New Alliance is not alone in this approach. Wise and Murphy review a host of institutional responses including the Group of 20, the World Bank and finds most remain overly market-oriented with "clear evidence that industrial agriculture continues to command a significant share of the spending (at 28)

[88] McMichael, P. and Schneider, M. 2007. 'Food security politics and the Millennium Development Goals, *Third World Quarterly* 32(1) p.120

[89] Pingali, P. and Raney, T. 2005. *From the Green Revolution to the Gene Revolution: how will the poor fare?* ESA Working Paper No. 05-09, FAO. Available online URL: http://www.fao.org/3/a-af276t.pdf

fails to assert the critical role a strong public sector must provide, particularly when there is a growing and powerful private sector operating in an area of strong public interest.

The Challenge of Securing the Participation of Small-scale Farmers in Policy-making

The other critical characteristic shared in the evolution of trade and IP rules is the relative lack of participation of SSF[90] – and the organizations that represent them – within trade and IP multilateral policy dialogues. While there is a growing recognition of the key role SSF play in maintaining resilient, agro-biodiverse agricultural systems,[91] the continuing omission of SSF participation means that there is still an urgent need for policies that support SSF in:

- Fulfilling their potential for securing rural livelihoods;
- Strengthening local and global food security; and
- Ensuring their informed, continued and effective participation in decision-making processes.[92]

SSF need to be involved in the developing the policies that support them.

The Challenge presented by Corporate Concentration and Power

Multinational firms dominate agricultural markets and corporate concentration is growing[93]. There is no international anti-trust law or regime to break up monopolies. While it is beyond the scope of this paper to fully discuss the impact of corporate concentration and power, it is fair to say that large corporations benefit from the dominant paradigm and their interests have a powerful influence on national and international policy making. Governments and international agencies are under pressure to promote market-friendly policies and with reduced resources are unable to fulfil their role as institutions in their own right to provide of goods and services in the public interest or to at least to provide a equally strong counter-balance.

6 Conclusion

Today's increasingly globalized food system spans just a few decades of traditions dating back 12,000 years. It is therefore a new experiment and one, if unchecked, will have irreversible consequences on healthy diets and the resilience of the food system overall. One cannot bring crops species or varieties back from extinction; it is difficult to recapture knowledge that has been lost and to reinstate the more resilient small-scale systems once displaced. If this modern food system does not work for the majority of the world's people, then it needs to be more than just tweaked.

As this paper describes, international trade and IPRs affect what the world eats.[94] These policy and legal frameworks are therefore not just about trade or IPR, they are about our food systems.[95] And as was noted earlier, these frameworks were not designed to address food security. Furthermore, as

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[90] It is understood that small farming contexts vary considerably from country to country and even within countries. Thus, even though generalizations and broad statements are required, there are limitations and applicability. At the same time, small farmers around the world face similar environmental, social and economic challenges and relate to agriculture in similar ways.

[91] Bragdon, Susan H. Small Scale Farmers: the Missing Element in the WIPO IGC Negotiations 2013 (http://quno.org/sites/default/files/resources/QUNO%20Genetic%20resources%20Farmers%20Food%202013.pdf See also, the 2008 synthesis report of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) sponsored by the FAO and the World Bank. Executive Summary: www.unep.org/dewa/agassessment/docs/IAASTD_EXEC_SUMMARY_JAN_2008.pdf

[92] Wolfenson, K.D.M. 2013. *Coping with the food and agriculture challenge: smallholders' agenda.* Preparations and outcomes of the 2012 United Nations Conference on Sustainable Development (Rio+20). FAO. p.32

[93] http://www.etcgroup.org/content/corporate-concentration

[94] Investment and marketing are other important influences see Corrina Hawkes "Uneven Dietary Development" linking the policies and processes of globalization with the nutrition transition, obesity and diet-related chronic diseases." At 3.

[95] Ibid

noted in section II, the orientation of these rules affect the ways in which government can set domestic policy.

National and global trade and IP policy at best ignores and at worst displaces the central role that SSFs play and will continue to play in feeding the world and providing the resilience and resources needed to adapt to global environmental change including climate change. The diversity of agro-ecosystems and the diversity and sheer number of SSFs globally means that agricultural solutions need to be context-specific. It is critical that national governments have the flexibility and capacity to put appropriate social and institutional supports in place to ensure the food security of their population.

The choice is not between trade liberalization and state control. The private sector and trade certainly have a role in providing elements of food security. However, because industry is interested in markets where demand correlates with the ability to pay and not with human need, the market and industry alone cannot be expected to fully satisfy the objectives related to food security and poverty alleviation. Furthermore, private sector research aims to develop products for the most profitable markets, not the neediest users or other desirable ends such as biodiversity conservation. It is the role of the public sector to attend to those most in need and to provide goods and services necessary for resilient and healthy food systems. It is not sufficient for the public sector to mitigate risk to encourage private sector investment. Determining the appropriate role for government means asking where and when markets should determine the allocation of goods and services and, most importantly, where and when they should not.[96] A strong and vibrant private sector is important to economic health, but so too is a strong and vibrant public sector.

Entering into this debate does not imply taking a position that is pro-public sector and anti-private sector or vice versa; it is about negotiating the appropriate roles and boundaries of each. To move forward we need to move away from such dichotomies, which are not particularly helpful when solutions are likely to be multifaceted. What is needed is to map the landscape of the public and the private sector so the public sector proactively asserts its role in promoting the public interest. This is an area that is under researched and not well understood.

Careful consideration needs to be given to what we as a global community want the market to produce and allocate, where appropriate partnerships are formed between the public and private sectors, and what we want to be the sole province of the public sector. It is also important to note, the market itself is a creation of government and the public sector must set the rules and parameters under which it operates in order to promote the needs of all in society.

When policies and rules are created or analyzed, there is a need to look at who is benefiting, who is being left out and what this means for food security and the establishment of sustainable food systems. In doing this, the excluded but necessary voices in multilateral policy, rule-making in agriculture and food systems may begin to be heard. In multilateral trade and intellectual property rights conversations, that excluded but necessary voice belongs to small-scale farmers.

[96] It is worth noting that markets themselves are the creation of government and are regulated by public policy. As Karl Polyani wrote "*laissez-fare* was planned." See Polyani *supra* Note 61.

Annex: A Brief Overview of the Development of "Food Security" and "Food Sovereignty" over Time

The right to food, as an antecedent to the debates on "food security", was first recognized in the 1948 UN Universal Declaration on Human Rights (Article 25). Although the actual concept of "food security" only just started to appear more clearly during the 1960´s and 1980´s as part of international discussions under the UN and FAO and its mandates to address food and agricultural issues (see International Covenant on Social, Economic and Cultural Rights of 1966, Universal Declaration on the Eradication of Hunger and Malnutrition of 1974, Food Security Assistance Scheme 1976, Resolution on World Food Security of 1983), experts coincide that it was the World Food Summit held in Rome in 1996 which ultimately defined its boundaries and dimensions and placed the concept fully on the international agenda.

The Summit defined "food security" as a situation where "*all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*". The emphasis was placed on continued and appropriate access to food sources. The Summit also approved a Plan of Action which proposed national commitments to address food insecurity combined with international coordination measures to collectively address food security issues.

The World Food Summit + 5 (2001) and a meeting of the FAO Committee on Food Security (2006) later assessed progress in alleviating food insecurity around the world. Progress was still dramatically slow. In 2004, FAO adopted the Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security, as a tool to support measurements of how governments and States where complying and implementing right to food obligations in its social, economic and cultural dimensions.

The new century and to a good extent the globalization process, allowed famines, civil wars, food price crises and the contrasts between growing overconsumption in some parts of the world with poverty, hunger and starvation in other parts, to become ever more evident and visible throughout the world. Food security also became part of other UN processes. In 2000, the UN Millennium Development Goals, set specific targets to eradicate poverty and hunger. Apart from the official, State driven international processes, civil society (mainly through NGOs), have become increasingly involved in shaping the food security agenda.

As part of the reform process of the Committee on World Food Security in 2009, the International Food Security and Nutrition Civil Society Mechanism was created to facilitate participation and consultation of NGOs and civil society actors in the Committee and its processes.

Increasingly, civil society has become a driver of policy change, both nationally and internationally. Initially with limited impact, in 1996 Via Campesina (an NGO) introduced the concept of "food sovereignty" into international debates. This was an immediate response to the shortcomings of food security debates. Advocates for food sovereignty considered that "access" to food was not enough. People, and especially farmers as key actors in food security, needed to have freedom to decide what to produce and consume and control how food is produced. This challenged the increasingly integrated, transnational and corporative management of food production and distribution, including trends in IP and seed laws worldwide and liberalization of markets through trade agreements.

The Forum of Food Sovereignty (Mali, 2007) adopted the Declaration of Nyéléni in which food sovereignty was defined as *"…the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems"*.

By 2008, even the World Bank and the UN had incorporated the concept of food sovereignty into their discussions and recognized the right for peoples and "sovereign states" to democratically decide their own agricultural and food policies. The tension became clear between the rights of people and the how states and governments respond to growingly influential international corporate food production pressures and interests – often reflected and embedded in international "official" processes and negotiations. Some countries (Ecuador, Bolivia, Venezuela, Senegal, Mali, Nepal and Peru) have incorporated the notion of "food sovereignty" into their constitutions or laws.

Source: Ruiz, Manuel, Bengoa, Carla, 2016.

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