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SELECTIVE REVIEW OF FOOD SECURITY POLICY WORLDWIDE: WHAT CAN BE LEARNED FROM INTERNATIONAL EXPERIENCES IN ORDER TO SHAPE FOOD SECURITY POLICY IN AFRICA? PART I

By
Isabelle Tsakok
Fatima Ezzahra Mengoub

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Part I

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Executive Summary

We are living through unprecedented times. The COVID-19 pandemic threatens not only our health, but the very foundation of life itself: our food security. Now more than ever, we are forced to rethink our food security as we witness the widespread dislocations to our food system, forcing millions to beg for food for the first time. During normal times, our world produces enough nutritious food for all but millions still go hungry every day. Why does this happen and what can be done to end this scourge? Nearly 75 years after the end of the Second World War, since when many countries have pursued policies to achieve food security, it is befitting to take stock and ask ourselves what has been achieved, at what cost, and what have we learnt that can help us better thrive in a post COVID-19 pandemic world.

Many countries, with different political systems, and at different levels of development, have equated food security with food self-sufficiency (FSS) and/or food sovereignty (FSY). The common element in these countries' approaches is the belief that producing domestically all of the nation's consumption of basic food makes a country food secure: the country retains control over its food supply and therefore is not vulnerable to the vagaries of international trade, in particular import price spikes, political economy disruptions, and natural and man-made (including public health) disasters elsewhere in the world. FSS has been equated with national security itself. In distinguishing means versus ends, FSS is a means of achieving the end or the desired state, which is food security. FSY is also concerned with retaining control, but in this case, it also includes control over a country's preferred approach to agricultural and food policies. FSY asserts that the country does not want its food supply and its agro-food policy approach to be subjugated to foreign corporate interests. In both FSS and FSY, the use of trade protection in some form is central.

In contrast to these operational approaches, the concept of food security is multidimensional and holistic. It specifies four pillars in the food ecosystem which jointly constitute food security. They are: availability, access, utilization, and stability. According to the Food and Agriculture Organization of the United Nations, "Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life"¹. These four elements make the achievement of food security very demanding. We label this holistic concept: FSH.

1. <http://www.fao.org/3/al936e/al936e00.pdf>.

Food security: main concepts, pillars, goals & policies

PILLARS:	AVAILABILITY	ACCESS	UTILIZATION	STABILITY
Concepts & Goals:				
Holistic Concept of Food Security (FSH)	✓	✓	✓	✓
Goal: Food Self-Sufficiency (FSS)	✓	✓	?	✓
Policies	Domestic production, Import protection	Food assistance, Social safety net	?	Food stocks, Risk management tools, Disaster management
Goal: Food Sovereignty (FSY)	✓	✓	?	✓
Policies	Domestic production, Control over ag policies, Import Protection	Food assistance, Social safety net	?	Food stocks, Risk management tools, Disaster management

This paper reviews the key features of selected experiences worldwide of food security policy approaches (FSP), to identify successes and/or failures, and with respect to the four pillars of FSH. Our review shows that the most important achievement of countries that have espoused FSS and FSY has been to promote sustained agricultural productivity growth over decades, resulting in and contributing to economy-wide transformation, industrialization, and broad-based high national incomes. Where governments gave top priority to transforming agriculture and agro-food to secure the needed food supplies within a growth-promoting and politically stable macro economy, they vastly improved food availability and also consumer access. These economies went from scarcity to surplus in several decades. Transforming agriculture through sustained productivity growth within an industrializing macro economy has been the surest way of eliminating mass hunger, and strengthening the four pillars of FSH. However, even this major achievement is only necessary, not sufficient. Progress in education and health, and access to a social safety net are also required.

We also highlight the costs and limitations of FSS, including:

1. The high financial and economic costs of FSS. It is not only the goal of FSS that matters, but also how it is pursued.
2. Achieving FSS does not necessarily give a country control over its food supplies or ensure political stability and national security. More generally, it does not ensure resilience in the face of man-made or nature-induced shocks that threaten the adequacy of the food supply, its affordability, or its stability in this highly globalized world economy, which is already seeing the early manifestations of climate change. Many other supporting measures are needed.

3. FSS is neither necessary nor sufficient to achieve FSH. Even in high-income countries, there are economic downturns and relative poverty. A social safety net is required, whether in food, cash, or vouchers.

Achieving FSH is a complex task that takes decades and is not reducible to achieving FSS or FSU. Countries face stiff challenges in the years ahead in consolidating and spreading the gains in food security.

Introduction

Everyone wants to be food secure, but millions are not. ‘Why is ending hunger so hard?’² This is the question in a world that has always produced more basic staples than needed for adequate nutrition. The answer to achieving food security is an economic/political system that creates widespread ‘access’ to food. The question is how. This review of selected international experiences of regions and countries under very different food security policy (FSP) regimes addresses two basic questions:

1. What have been the successes and failures of food security under different food security policy regimes?
2. What can one learn from these experiences to help shape food security policy in Africa—north and south of the Sahara?

This review is in two parts. Part I addresses the first question. This first Policy Paper presents different country experiences to assess their successes and failures in achieving food security. It thus sets out the background needed to address the second question. In Part II, the follow-on Policy Paper focusses on Africa. It presents the food security situation in Africa, north and south of the Sahara; identifies the unique challenges in selected countries; and draws on global experiences of achieving food security presented in Part I. Insights and lessons from these global experiences for strengthening food security in Africa are discussed in Part II.

This two-part review is organized in six sections:

Part I

- Section I: Brief overview of the pivotal political economy importance of food crises, and different concepts of food security and why they matter;
- Section II: Selective review of regional and country experiences in implementing food security policy;
- Section III: What worked, what did not and why: current views.

Part II

- Section IV: Regional context of food security challenges in Africa—country cases in (a) North and (b) South of the Sahara;
- Section V: What can one learn from country experiences presented in Part I for food security policy in Africa?
- Section VI: Conclusion.

Part I is this first Policy Paper; Part II is in the follow-on Policy Paper.

2. This sentence is taken from C. Peter Timmer (2015) *Food Security and Scarcity: Why Ending Hunger Is So Hard*. The Center for Global Development. The University of Pennsylvania Press, Philadelphia.

Section I: Brief overview of the pivotal political importance of food crises and different food security concepts used and why they matter.

Pivotal political importance of food crises:

Time and again, food crises tear societies apart. Food crises themselves are the result of deep dislocations in the body politic, which then exacerbate underlying conflicts. Examples include massive demonstrations with countless refugees fleeing a Venezuela characterized by food shortages and skyrocketing food prices since 2014, and the acute food crises in Somalia since 1991, Syria since 2011, and Yemen since 2015. Some famous events from history clearly show that food crises are watershed events as governments lose control. These include:

- **The food riots of the French Revolution (1789-99).** Parisians stormed the Bastille, following riots that started as a search for arms and grain. They rightly suspected that the higher grain prices were due to hoarding. The food riots were a key component of the deep discontent of the French Revolution, which had far-reaching social and political consequences for not only nineteenth century France, but for Europe and the Americas as well.
- **The Great Irish Potato Famine (1845-49).** The famine occurred when successive potato crops failed, giving rise to the worst famine in Europe in the nineteenth century. The rural poor depended almost exclusively on the potato for their sustenance. This Great Famine was a watershed event for Ireland, its political relationship with Britain, and for the Irish diaspora. The bitter memory of the Great Famine became a rallying cry for subsequent Irish nationalist movements against British rule.
- **Rice Riots in Japan (1918).** Japan was rocked by rice riots (July–September 1918), which brought about the downfall of the then government, the Terauchi Masatake Administration. A precipitous rise in the price of rice inflicted extreme economic hardship, especially in rural areas where rice was the main staple. The success of the rice riots in toppling the government energized the development of several socially conscious organizations. The Government of Japan also aggressively promoted rice productivity in South Korea and Taiwan, which were then its colonies.
- **Food Riots in Egypt (1977).** By 1975, food subsidies cost an estimated 16.9% of the Government of Egypt's total expenditures³. Following donor-mandated reductions in food subsidies (the consumer subsidy system included almost 20 items including flour, rice, sugar, and cooking oil), spontaneous riots broke out on January 17-19, 1977. In the ensuing clashes, an estimated 79 people died; over 550 people were injured; and over 1000 persons were arrested. The government had to back down and restore the food subsidies.

3. Adams, Richard H, Jr. April 2000. Self-Targeted Subsidies: The Distributional Impact of the Egyptian Food Subsidy System. World Bank Policy Research Working Paper # 2322.

Different concepts of food security and why they matter

There are three broad concepts, which have evolved in different contexts⁴. In their simple forms, they are:

1. **Food self-sufficiency (FSS):** To many governments, food security is synonymous with national security. National security is undermined if a country loses control over its supply of staples (e.g., rice, wheat, sorghum, etc.). Hence, the strategic priority is food self-sufficiency. In its extreme form, this means not importing but limiting the nation's consumption to only what the country produces, on the basis that having to import makes the country vulnerable to the vagaries of international trade and geopolitical dislocations.
2. **Food sovereignty (FSY):** Beyond losing control over one's food supply, governments are also concerned about losing control over their preferred approach to developing their agricultural and food systems. Food sovereignty refers to "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"⁵. This concept, coined by members of the Via Campesina (1996), was re-affirmed by the Declaration of Nyéléni (Sélingé, Mali, Feb. 27, 2007), and was adopted by 34 European countries, which met in Krems, Austria (August 16-21, 2011).
3. **Food security (FSH):** A holistic concept of food security based on four pillars that must be in place for people to be food secure. The pillars are availability, access, utilization, and stability. According to the FAO, "Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life"⁶.

FSH does not specify how a country ensures all four pillars of FS in different contexts, whereas FSS and FSY equate the means with the end to be achieved, namely FS. FSH rightly emphasizes the multidimensional, hence demanding, nature of FS, while FSS and FSY rightly emphasize the strategic importance of FS. They do not question the validity of the concept of FSH itself. The four pillars of FSH in fact correspond to most peoples' idea of the kind of food security desired.

The disagreement centers on the how, because the how that governments pursue inevitably has different resource-allocation implications and therefore outcomes for food security and development. The how is in turn largely influenced by the FS concept espoused.

In an environment characterized by an increasingly globalized and competitive world economy, by climate change which is already creating new stresses for agriculture and food systems, and by food panics that echo historical experiences, decisions on the how to achieve FS focus on three sets of issues:

4. Napoli, Marion. 2010/11 Master in Human Development and Food Security. "Towards a Food Security Multi-Dimensional Index (FIMI)." Professor Pasquale de Muro; and Professor Matteo Mazziotta. In 2010/11, there were some 200 definitions and over 450 indicators. <http://www.fao.org/fileadmin/templates/ERP/uni/FIMI.pdf>.

5. Food Sovereignty. Wikipedia. (Accessed Feb 21, 2020. Last edited 17 January, 2020). https://en.wikipedia.org/wiki/Food_sovereignty.

6. <http://www.fao.org/3/al936e/al936e00.pdf>.

- What balance to strike between protecting domestic production despite its costs—financial, economic and environmental—and relying on international trade guided by the country's comparative advantage, in order to maintain control over the country's food supply.
- What balance to strike between investing public resources to increase and sustain productivity growth in the agriculture and food system, and developing a social safety net of income and/or food assistance.
- What is the best way to prevent food panics altogether, including how to address high price volatility and price spikes of basic staples, in a context in which what constitutes 'basic staples' itself is changing, with increases in incomes, population, and urbanization.

These are recurrent issues, either singly or more frequently, in combination, especially for countries which have not achieved the high bar of FSH.

Section II: Selective review of regional and national experiences in implementing food security policy (FSP)

As stated in section I, how governments address food security issues, the challenges they face, and the decisions they need to make in their pursuit of FS are deeply influenced by their preferred FS concept. The cases in this section have been selected to illustrate the following typology:

- Rich countries where the majority has no problem purchasing the food they want, but a minority still struggles to satisfy this basic need;
- Middle income countries that are rapidly urbanizing, and have made substantial progress in reducing poverty and chronic hunger, but where millions still suffer from chronic hunger and malnutrition;
- Poor countries still characterized by chronic, massive (around 10-20 percent or more) poverty;
- Countries with scarce cultivable land and water endowments, with or without high population densities;
- Countries prone to natural shocks and vulnerable to fluctuating terms of trade and/or highly volatile and rising basic food prices.

Key Features of Selected Cases in the High-income World: The United States of America (USA); the European Union (EU), Japan, and the Republic of Korea⁷

The United States of America (GNI/CAP: \$63,080): The 2018 Farm Bill; and Social Safety Net programs

7. For 2020, low-income economies are defined as those with a GNI per capita, using the World Bank's Atlas method, of between \$1,025 or less in 2018; lower middle income: between \$1,026 and \$3,995; upper middle income between \$3,996 and \$12,375; high income \$12,376 or more. All GNI/CAP data are from WDI, 2018. See <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

Brief background: The USA is not guided by the concept of FSS in its agricultural policy, but government does support major commodities. The development of American agriculture dates back to the founding fathers (Gardner, 2002: 176)⁸. By the end of the nineteenth century, many of the institutional and infrastructural foundations for commercial agriculture were laid down. The two revolutions in agriculture—first, with the rapid adoption of horsepower in the late nineteenth century; and second with the application of mechanical power, chemical fertilizers, pesticides, herbicides, and hybrid seeds in the early twentieth century (Hurt, 1994: 379)⁹—overlapped with the rise of industrial America, the period which historians date from around 1874-1900. During the late nineteenth and into the twentieth century, American agriculture was transformed, productivity growth was sustained, farm families enjoyed rising incomes, the rural non-farm economy flourished, and urban consumers enjoyed lower and more stable real food prices. As a high income nation, food security is enjoyed by the majority, although there are millions who depend on the various food assistance programs, in particular the Food Supplemental Assistance Program (SNAP, formerly called Food Stamps).

Support programs for production: In addition to institutional support (e.g., agricultural research and development through the system of land-grant colleges established by President Lincoln through the Morrill Act of 1862), farm price support has been substantial since the years of acute distress inflicted on farm households by the Dust Bowl (1931-39) and the Great Depression (October 1929-33). Thus, the 2018 Farm Bill (2019-23) continued the long tradition of commodity price support¹⁰. Similarly, dairy and livestock farmers are supported, either by guaranteed minimum prices or by provisions for disaster assistance. In addition to this support, the Farm Bill finances conservation programs to cut back on production, to protect and enhance the quality of water, soils, forests, wildlife habitat, and air¹¹. The USA is a major exporter of grains/feeds, soybeans, livestock, and horticulture.

Support programs for income & consumption: A major component of government farm assistance is to supplement the consumption of the poor, initially through the Food Stamp Program in 1939. Under President L.B. Johnson, war on poverty legislation was introduced (1964), which became the current social safety net system, including consumption assistance programs (including school lunches). An estimated 13% of the U.S. population relies on SNAP benefits. Other important social safety net programs include Social Security, refundable tax credits, housing subsidies; and unemployment insurance. Overall, the social safety net programs have a major impact in strengthening food security by increasing incomes and reducing poverty and hunger¹². Over the long term, the anti-poverty impact of these transfers has increased significantly: in 1967, they reduced poverty by 1.3 percentage points from 26.9% to 25.6%; in 2012 by 12.7

8. Gardner, Bruce L. 2002. *American Agriculture in the Twentieth Century: How it Flourished and What it Cost*. Harvard University Press. "It will not be doubted that with reference to either the individual or national welfare, agriculture is of primary importance"; George Washington in his annual message to Congress in 1796.

9. Hurt, Douglas R. 1994. *American Agriculture: A Brief History*. Iowa State University Press.

10. The commodities supported are: wheat, sorghum, barley, oats, seed cotton, long and medium-grain rice, certain pulses, soybeans and other oil seeds, and peanuts.

11. Agriculture Improvement Act of 2018 : Highlights and Implications. Outlays: \$ 428 billion. USDA. <https://www.ers.usda.gov/agriculture-improvement-act-of-2018-highlights-and-implications/>.

12. Economic Policy Institute (EPI) "Government programs kept tens of millions out of poverty in 2018". Posted Sept 11, 2019 by Julia Wolfe and Hunter Blair. (Accessed Feb 28, 2020). <https://www.epi.org/blog/government-programs-keep-tens-of-millions-out-of-poverty/>.

percentage points, from 28.7% to 16.0%, amounting to nearly 40 million people (Office of Health and Human Services Policy, March 2016: 13)¹³.

The European Union (GNI/CAP: \$35,420): The Common Agricultural Policy (CAP) based on Community Preference

Brief background—Formation, objectives, and instruments of the CAP: Food shortages were common in a Europe devastated after the Second World War (1939-45). Agriculture was important for the six founding members (Belgium, Holland, Luxembourg, France, Germany, and Italy) of the European Economic Community (EEC). For example, in 1955, agriculture's shares of GDP and total employment were respectively about 12% and 21% in these countries. The CAP was born out of the decision to create a Common Market and to not rely on food imports. Thus, a customs union was created which progressively dismantled tariffs among the six countries. FSS was pursued to achieve FS, through the protection and transformation of domestic agriculture (Article 39 of the Treaty of Rome establishing the CAP). The objectives were to (i) increase productivity through technical progress; (ii) ensure a fair standard of living for the agricultural community, especially farmers; (iii) stabilize markets; (iv) ensure availability of supplies; and (v) ensure supplies reached consumers at reasonable prices. The main instruments were price support, community preference, variable import levies (to maintain the high internal price if the import price is less), and export restitutions or refunds (to make up the difference between the high internal price and the lower export price). The main commodities protected through intervention prices included cereals, oilseeds, feed products, dairy, meat, wine, and sugar. Protection ensuring community preference has been a defining approach of the CAP.

From food scarcity to surplus as the CAP evolved: By the 1970s and 1980s, the CAP produced surplus food (famous 'mountains' of butter, and 'lakes' of milk) which had to be dumped (sold at below cost price) in developing countries, thus hurting the competitiveness of smallholders in developing countries who could not compete with such subsidized products. The 1980s reforms of the CAP sought to limit overproduction, but the budgetary burden continued to mount. There were also distributional concerns. The allocation of the large funds favored the rich—the largest landowning firms and farmers, including the Queen of England. To reduce overproduction, direct income payments (decoupling) replaced price support (2015). The 2014-2020 CAP reform sought to balance many concerns, including: (i) the original FSS goal within budgetary constraints; (ii) the negative (undermining the competitiveness of developing countries) worldwide impact of CAP subsidies; (iii) environmental and sustainability aspects of agriculture and rural development, especially in a world affected by climate change; (iv) insurance and risk management concerns; (v) distributional concerns between small-scale and larger farmers and food processors, (vi) the ageing of farmers; and (vii) flexibility in implementation as the number of EU countries has vastly expanded from six to 27 members of around 445 million people. Since the mid-1990s, there are no longer intervention prices for cereals, oilseeds, and protein feed products. EU farmers are therefore exposed to global competition with its more unstable and uncertain demand and prices¹⁴. Consequently, there has been a surge in demand for risk-management

13. US Dept of HHS. March 2016. "Poverty in the United States: 50-year Trends and Safety Net Impacts" <https://aspe.hhs.gov/system/files/pdf/154286/50YearTrends.pdf>.

14. In fact, in a major policy speech at the Sorbonne, on September 26, 2017, President Emmanuel Macron voiced his concern about the volatility of global prices under the current CAP. Thus « ... une Politique agricole commune qui se pense d'abord avec deux objectifs : nous protéger face à ces grands aléas, à la volatilité des marchés

instruments (e.g., forward and futures trading), and greater use of diversification and differentiation strategies, to effectively address this more competitive global market with all its ups and downs.

Japan (GNI/CAP: \$41,310): The primacy of rice for food security policy and the continuing concern about high food self-sufficiency

Brief background: In high income Japan, FSP still emphasizes protection of domestic rice production, as rice remains a political commodity. This primacy has been maintained despite the steady decline of per-capita rice consumption from around 118 kilograms (1965) to 56kg (2012)¹⁵. The Food Control Law (1942, during the Second World War) was a dual price system with a government purchase price well above the consumer price. By the 1970s, Japan had a huge rice surplus, and also major budget deficits. Under the triple pressure of surplus rice, major budgetary deficits, and falling per-capita rice consumption, the mechanisms of policy support had to change—and they did so eight times (from 1987-2018)¹⁶. Japan's Government followed the EU in that: direct payments replaced price support, and set-asides encouraged crop diversification, away from rice. Consumers have been paying for this policy of support. For example, a 60kg rice bag would cost 8000 yen instead of the market price consumers pay: 16,000 yen (July 2015)¹⁷. The rice market was effectively closed to imports until 1995 when the General Agreement on Tariffs and Trade (GATT) negotiations on Minimum Access (MA) required 0.4 million metric tons of annual rice imports (Ito, 2010: Fig 15.8, 306)¹⁸, mainly Japonica rice imported from California. Despite this MA, tariffs are still very high, although the existence of the surplus stock of rice played a determining role in ending the rice crisis of 2008, as Japan agreed to export its surplus stock to the government of the Philippines, which was desperate for imported rice (Timmer, JI. 2008)¹⁹. Imported rice beyond the government quota was subject to a tax of 777% (2015). Despite this high tariff protection, the government's target of 73% for 2025 has been set well above the actual FSS ratio of 66% (2019)²⁰. However, it is clear that this 'low' food self-sufficiency ratio is not indicative of the food security most Japanese enjoy, which has been assured by their high incomes, the fact that Japan can cover its needs through imports, and that markets function.

Social assistance strengthens the FS of the poor in Japan: An estimated 15.7% of the population is categorized as poor (2019) in Japan (OECD data)²¹. Japan has several

mondiaux qui pourrait mettre en péril la souveraineté alimentaire de l'Europe ; favoriser la grande transition agricole européenne ... ». <http://capreform.eu/macrons-views-on-the-common-agricultural-policy/>. Blog dated Sept 27, 2017, by Alan Matthews. "Macron's views on the Common Agricultural Policy" Accessed September 30, 2017.

15. Japan Ministry of Agriculture, Forestry and Fisheries. (MAFF, 2014) Data from "Food Balance Sheet".

16. FFTC Agricultural Policy Articles. 2018-10-18. "Overview of Japan's Rice Policy for the Last 30 years: From Price Supports to Direct Payments" by Kunio Nishikawa, Associate Professor, College of Agriculture, Ibaraki Univ. Japan (Accessed Feb 29, 2020) http://ap.fttc.agnet.org/ap_db.php?id=911.

17. Asia Pacific Policy. Feb 5, 2015. "The Problem with Japanese Rice Policy." (Accessed Feb 29, 2020) <https://asiapacificpolicy.wordpress.com/2015/02/05/the-problem-with-japanese-rice-policy/>.

18. Ito, Shoichi. 2010. "Japan's Rice Policy and Its Role in the World Rice Market: Japan Should Act as a Watchdog". Ch 15 (299-312) in Dawe, David (ed.). *The Rice Crisis: Markets, Policies, and Food Security*. Food and Agriculture Organization of the United Nations and Earthscan. <http://www.fao.org/3/an794e/an794e00.pdf>

19. Timmer, C. Peter. July 2, 2008. "Japan and a solution to the World Rice Crisis". *The Asia-Pacific Journal: Japan Focus*. Vol. 5, Issue 7. Article ID 2819. <https://apjif.org/-C.-Peter-Timmer/2819/article.html>.

20. The Japan Times. Aug 20, 2019. Opinion. "Japan's Falling Food Self Sufficiency" <https://www.japantimes.co.jp/opinion/2019/08/20/editorials/japans-falling-food-self-sufficiency/#.XlsdDBNKh4>.

21. OECD. Poverty rate and Income inequality. 2015-2019 or latest year. Poverty is measured as income falling below

programs for social assistance though its social spending is relatively low among OECD countries—e.g., for basic living expenses and housing. The family is expected to be the primary social safety net. Major recipients are the elderly (living alone), the disabled, and single mothers. Social assistance is not focused on increasing food consumption alone; but by increasing income and purchasing power, and therefore access to food, social support helps reinforce the food security of recipients.

The Republic of Korea (GNI/CAP: \$30,000): Rice self-sufficiency considered central to food security

Brief background: from agricultural taxation to subsidization: For many East and Southeast Asian countries, achieving rice or food grains self-sufficiency (FSS) is a major objective of agricultural and national security policy. Korea is no different. However, although food security and rice self-sufficiency remained a major objective in post-Second World War Korea, they did not translate into government support in the earlier years. After the Korean War (1950-53), with plentiful American aid under U.S. PL480, agricultural development and investment were of low priority in the Republic of Korea's first Five Year Plan (1961-66). During this period, rice farmers received well below world market prices, although the political rhetoric was in favor of rice FSS. Cheap food imports (e.g., wheat flour, dairy, processed meat products) supplied from U.S. surpluses, fed Korea's burgeoning urban economy. However, the 1971 elections clearly showed that rural discontent with the Government of Korea (GOK) policy was widespread. It is believed that largely due to this widespread discontent, the GOK changed its policy of discrimination to one of heavy subsidization of the agricultural and rural sector (Eberstadt, 1996: 148-149)²². Heavy protection remained in force into the twenty-first century, although the mechanisms have changed: less emphasis on import restrictions and input subsidies, and more on direct payments to farm households and favorable financial assistance packages.

Low FSS means food insecurity despite substantial economic achievements: Korea's economic achievements are well known. Absolute poverty declined from around 22% in 1975 to 7% in 2001 (World Bank, 2004: 5)²³. The relative poverty rate of the total population (2015-19) was estimated at 17%²⁴. It is an open economy—its trade/GDP ratio is 80% (2018)²⁵—and one of the largest grain importers. Korea therefore considers itself food insecure, especially after the Asian Financial Crisis of 1997-98 and the triple food-fuel-financial crisis of 2007-08, because it has virtually no control over food grain supply chains, which are controlled by a few large trading companies (Müller, 2014: 308)²⁶.

the poverty line, which is half the median income of the whole population. The coefficient of income inequality is 0.339 for Japan. Complete equality = 0; complete inequality = 1. <https://data.oecd.org/inequality/poverty-rate.htm>.

22. Eberstadt, Nicholas. 1996. "Material Progress in Korea since Partition". In Ramon H. Myers, ed. *The Wealth of Nations: The Politics and Institutional Determinants of Economic Development*. Pp 131-163, Stanford, CA: Hoover Institution Press.

23. World Bank. Republic of Korea: Four decades of equitable growth. Doc # 30781. <http://documents.worldbank.org/curated/en/307551468752966588/pdf/307810KOR0Poverty01see0also0307591.pdf>

24. OECD. This poverty rate is a measure of relative poverty as it is the number of people in a given age group whose income falls below the poverty line, taken as half the median income of the total population. <https://data.oecd.org/inequality/poverty-rate.htm>.

25. WDI. Trade as % of GDP. In comparison with some other open economies (%): Chile : 58; Hong Kong SAR, China: 377; Malaysia: 131; and Singapore: 326. <https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS>

26. Müller, Anders Riel. 08/27/2014. "South Korea: Food security, development and the developmental state." Korean imports of soybeans, wheat and corn are controlled by Cargill, Archer Daniels Midland, Bunge and Louis Dreyfus Commodities Group (LDC) – which make up 56.9 per cent of the total South Korean grain trading volume. file:///Users/isabelletsakok/Downloads/South_Korea_Food_Security_Development_an.pdf

Korea considers its dependence on agricultural and food imports as a major vulnerability and a national security risk. Therefore, in 2008, Korea announced a new FS strategy, a 10-year Comprehensive Plan for Overseas Agricultural Development. This strategy has two major components: (a) establish overseas trading companies which could secure commodities and stabilize prices through the futures market, and (b) support overseas agricultural production, processing, and logistics through Korean companies operating abroad. The GOK has a majority share in these overseas companies. It has also been working with the Overseas Agricultural Development Service (OADS) which supports private Korean companies to acquire or lease agricultural land mainly in Asia (if in Africa, it is referred to as land grabbing) to produce grains which are major Korean agricultural imports (e.g., wheat, corn, soybeans).

Private and public assistance to strengthen FS among low-income households: In Korea, as in much of East Asia, the family unit is considered the basic social safety net. Low income households that do not identify themselves as food insecure tend to have reliable networks consisting of parents, family, and friends. Food-insecure low-income households tend not have such networks. They depend on public welfare centers and charitable institutions, including food banks and after-school food programs (Park and Kim, 2018) ²⁷. How adequate these networks are nationally is not clear. Korea resorted to a substantial public works program after the Asian Financial Crisis of 1997-98 (by January 1999, \$1.6 billion had been spent). Due to the crisis, unemployment rose by 4.3%, which meant 1.5 million jobless individuals, and the poverty rate increased from 3% in 1997 to 7.5% in 1998 in urban areas. Only the young and able-bodied qualified for these public works. Therefore, to assist the vulnerable who did not qualify, the GOK expanded its cash transfer program. Since then, a public works component has remained an integral part of Korea's welfare scheme, the Minimum Living Standards Security Scheme (Blomquist, 2002: 9)²⁸.

Key features of selected cases in developing countries: China, India, Bangladesh, Malaysia, Indonesia, Chile, and Peru

The People's Republic of China (GNI/CAP: \$9,460): from 95% self-sufficiency in major cereals to food sovereignty by 2030²⁹

Brief background—The agriculture-food front from 1979-2000—the goal of self-sufficiency in cereals: Feeding China is a huge undertaking because China has 20% of the world's population, but only 11% of the world's agricultural land and only 6% of its water (FFF in China 2030: xi, Box A). Feeding this huge population has been a central strategic goal since 1949. In the 1990s, China was 98% self-sufficient in grains (rice, wheat, and maize (referred to as corn in the U.S.)) (Huang et al., 2000) ³⁰. To achieve this, a priority for

27. Park, Sohyun and Kirang Kim. Jan 25, 2018. 'Food acquisition through private and public social networks and its relationship with household food security among various socioeconomic statuses in South Korea.' In *Nutrients*. Multidisciplinary Digital Publishing Institute (MDPI) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5852697/>

28. Blomquist, John. Winter 2002. "Responding to the crisis in Korea with public works" in *Spectrum*. Protecting People with Social Safety Nets. Social Protection. The World Bank. Report # 23879. <http://documents.worldbank.org/curated/en/190371468758155759/pdf/238790REPLACEM11BOX470AccA200210011.pdf>

29. Definition of food sovereignty according to the Chinese Government: "maintaining independent control over its food supply, typically sought through grain self-sufficiency coupled with large buffer stocks". Source: Luc Christiaensen. 2012. "The Role of Agriculture in a Modernizing Society: Food, Farms and Fields" in *China 2030* (FFF in China 2030: xiii)

30. Huang, Jikun, Chunlai Chen, Scott Rozelle, and Francis Tuan. 2000. "Trade Liberalization and China's Food

China's government policy from 1979 to 2000 (and earlier) was to increase agricultural productivity, and food supplies, and reduce poverty and hunger³¹. After 30 years of socialist agriculture, China returned to a policy of promoting private incentives for monetary rewards. Not only was agricultural growth dynamic (especially between 1978 and 1984), but the structure of production also changed to supply more high-value commodities. Increased irrigation—50% of total cultivated land—supporting higher cropping intensity and land-saving technological changes have driven agricultural growth (FFF in China 2030: 15-16, 19-20). Economy-wide growth has also been transformative and poverty reduction has been dramatic—500 million people surviving on under a \$1/day were lifted from poverty between 1978 and 2004 (FFF in China 2030: xi, Box A)³². During the first two decades of reform, the structure of China's agricultural trade also changed. Around the mid-1980s, China's labor-intensive exports of horticulture and animal products increased while its net imports of land-intensive crops, including grain, edible vegetable oils, and cotton increased (Huang et al, 2000). However, despite this impressive achievement, around 27% percent was categorized as poor at the internationally comparable poverty level of \$5.50 /day (2011 constant dollars) (2015)

The current goal of food sovereignty (FSY) by 2030: For China, food sovereignty means it maintains control over its food supply at all times (FFF in China 2030: 35). The goal is to achieve 95% self-sufficiency in cereals (rice, wheat, and maize) by 2030. The key question is how best to do this, considering the trade-offs of this approach. China is a large country in the trade sense in that the scale of its imports and exports can be price-determining on world markets. In other words, China is not a price taker³³. Therefore, how China enters/exits world markets is critical not only for China but also for other countries. A food-sovereign China in 2030 would be one in which “agriculture will be dominated by commercially viable farmers, small and medium-sized family farms that ensure self-sufficiency in strategic, but land and water intensive strategic crops such as rice and wheat though not in maize. It maximizes rural employment opportunities in the production and processing of the labor intensive high value agricultural products ... consistent with its comparative advantage...” (FFF in China 2030: 9)

Trade-offs and stiff challenges ahead: The World Bank-Development Research Center of the State Council (China 2030) report argues that China should import the land- and water-intensive crops of maize and soybeans while it can continue to achieve 95% self-sufficiency in the politically sensitive crops of rice and wheat. China should also diversify into high value crops in line with its comparative advantage. How much free trade should China aim for? The fear of the authorities is that complete free trade will lead to an unacceptably low level of FSS, as shown by the scenario analysis by Huang et al (2000) of complete free trade by 2005, which indicated that China's grain FSS would decline

Economy in the 21st Century: Implications for China's Food Security” Chinese Academy of Social Sciences; University of California at Davis; and ERS, USDA. <https://aic.ucdavis.edu/research1/rozelle.htm>

31. World Bank and Development Research Center of the State Council (DRC), People's Republic of China. China 2030. http://siteresources.worldbank.org/EASTASIAPACIFICEXT/Resources/226300-1363837020207/china2030_final.pdf

32. Additional info on poverty reduction is available in Brandt, Loren and Thomas Rawski. Eds. 2008. China's Great Economic Transformation. Cambridge Univ. Press.

33. The actual impact on world commodity prices of course depends on several factors, including the scale of the imports, its timing, and whether there are long-term agreements already in place concerning the import. For example, the increase of imports of soy beans from Brazil's Cerrado region from virtually zero in 1995 to 30 mmt in 2005 was managed without major disruptions, primarily because Brazil expanded its Cerrado production over this period (China 2030: 38).

rapidly to less than 90%. There are three sets of major trade-offs and stiff challenges ahead:

- **The first** is the major trade-off between greater reliance on world markets for maize and soybeans (and thus losing partial ‘control’ over grain supplies), with all the risks attendant on relying on world markets, versus using scarce land and scarce water that could be allocated to high-value crops, the next best alternatives. How disruptive and unreliable world markets might be, may however be endogenous to China, which can negotiate long-term mutually beneficial (in principle) trade agreements with exporting nations.
- **The second** is the need to restructure China’s agricultural output in line with the FSY goal, while maintaining/increasing the commercial viability of small/medium-sized farms. Structural reforms will be required in several areas and must result in: (i) continued total factor productivity (TFP) growth so Chinese agriculture remains competitive; (ii) higher income generation for labor left on farms to reduce the big and increasing rural-urban income gap; (iii) continued growth/development of a dynamic non-farm (rural and non-rural) economy to absorb increasing rural-urban migrants; and (iv) continual improvements in China’s food safety standards, to increase trust in China’s produce (FFF in China, 2030: 44-60).
- **Third** is the stiff challenge of containing viral outbreaks that undermine food security in particular and public health in general (and not only of China’s population). This is the real food security issue in a fundamental sense, because it threatens not only China’s food security but that of the entire world. There are two cases in point. With hindsight, the outbreak of African Swine Flu, first reported in China in August 2018, was a dress rehearsal for the current pandemic. This Swine Flu outbreak necessitated the slaughter of millions of pigs, and contributed to high pork prices and high prices for all meat (and again, not only in China). China’s global responsibility is being driven home by the current COVID-19 outbreak (identified since December 2019 in Wuhan), which developed into a global pandemic in January 2020. Continued infections, deaths, widespread dislocations in everyday and periodic activities, and panic buying have dominated world news. More generally, the challenge for the Chinese government is to speedily identify and contain public health threats to FS in China and in the rest of the world.

Successfully addressing these trade-offs and meeting these stiff challenges will be necessary for the Chinese government to improve FS in terms of availability, access, quality (e.g., nutritious, safe), and stability. These go well beyond achieving a certain level of FSS or the goal of FSY.

The Republic of India (GNI/CAP: \$2,020): Achievement of food grain self-sufficiency synonymous with food security

Brief background: Food grain self-sufficiency a driving goal shaping agricultural and food policy: Indian agriculture has made great strides since independence (Aug. 1947) but FS remains a major problem, despite the adoption of the Green Revolution technologies in the Punjab in mid-1960s. In the early 1950s, India was characterized by widespread poverty, illiteracy, political tensions with millions of refugees created by the Indo-Pakistan partition, and sharp sectarian divides. Famine was a recurrent feature of British South

Asia, with the most infamous episode being the Bengal Famine of 1943. Successive droughts in 1965-66 and 1966-67 caused India's food imports to rise to 10 million and 11 million tons respectively (World Bank, 1994: 9)³⁴. These droughts highlighted India's vulnerability in its food supply and FS. It is not surprising then that the goal of FSS (basic cereals of wheat and rice) has played a central role in the political economy for decades. Key features of India's agriculture—continued predominance of food grains: India is a vast country with much variation in agricultural performance across and within states. However, there are some common features. Agriculture has been the dominant sector ever since independence. In 1947, it contributed around 60% of GDP, and employed almost 75% of the labor force. By the late 1980s, the contribution to GDP was 30% and agricultural employment accounted for 60% of the labor force, with rural areas home to 75% of the population and 80% of the poor. Food grains, mainly wheat and rice, dominate. In the early 1950s, food grains (cereals and pulses) occupied some 90% of total cultivated area. By the 1970s, they occupied 75% of cultivated land area. Food grains (cereals and pulses) occupy 79% percent of total irrigated area, and provide 61% percent of gross value of crop output. The government has invested heavily in irrigation but around 60% of farmed land still remains rain-fed. From 1985/86-1994/95, aggregate agricultural growth increased to 3.7% per year, decreasing to 1.9% from 1995/96-2004/05 (World Bank, Oct 2008: Tab 1.1)³⁵, during a period of repeated negative rainfall shocks. India was able to export rice in the 1990s. In fact, India is now a major rice exporter. This can be seen in the rise in rice prices Thailand is able to command because of the fall in India's rice exports, arising from logistical disruptions related to the COVID-19 lockdown (March 24-end May 2020). Its ability to export rice notwithstanding, annual agricultural growth has been lack luster—it averaged 2% more recently (2013-15), characterized by low productivity, growing water and land scarcity, and rising labor costs, exacerbated by frequent droughts and floods. Agricultural transformation into a diversified sector driven by high productivity and continued growth of high value products has been slow.

Key features of India's agricultural and food policy: India has achieved FSS largely through a policy of agricultural trade protection and input subsidies. This policy has contributed to its substantial poverty reduction: extreme poverty declined from 46% in 1993 to 21% in 2011, and 13.4% in 2015. However, at a poverty level of \$5.50 / day, the level stood at 87% in 2017. Thus, with millions still suffering from poverty and food insecurity, the opportunity cost of continuing subsidies is enormous, given that agricultural productivity growth is still low. Since the mid-1960s, the government of India has heavily subsidized the key inputs of the Green Revolution, namely fertilizer, hybrid seeds, agro-chemicals, in particular, pesticides, and has increased water control through its investments in irrigation infrastructure and electric power for ground water extraction. For decades, it also developed an agricultural research and extension system. The government also guarantees Minimum Support Prices (MSP) for rice and wheat (For more details, see PCNS, September 27, 2019)³⁶. The Food Corporation of India (FCI) has built a nationwide system of food distribution and storage including ration shops

34. Lele, Uma and Balu Bumb. 1994 South Asia's Food Crisis: The Case of India. World Bank. (Accessed Jan 23, 2019) <http://documents.worldbank.org/curated/en/232921468750549000/pdf/multi-page.pdf>

35. World Bank. Oct 17, 2008. India: Taking Agriculture to the Market. Report # 35953-IN <http://documents.worldbank.org/curated/en/722541468043139947/pdf/359530ESW0P09010Box334086B01PUBLIC1.pdf>

36. Policy Center for the New South. Sept. 27, 2019. Tsakok, Isabelle and Tharcisse Guedegbe. "From Green Revolution 1.0 to Sustainable Green Revolution 2.0: Towards a Fertilizer Policy for Smallholder Agriculture in Sub-Saharan Africa." Issues on Oct. 15, and Oct. 30 are on fertilizer policy and the uptake of the Green Revolution. <https://www.policycenter.ma/publications/asian-green-revolution-10-sustainable-green-revolution-20>

and warehouses. However, after over fifty years, the continuing focus on input subsidies, and the substantial (financial, economic, and environmental) costs of India's approach have been seriously questioned (World Bank, 1999: xiv-xvii)³⁷. The high MSPs and the public food grain stocks cost the Government of India 0.5% of GDP in the 1990s, rising to 0.8% of GDP in 2002/03. For the state Government of Punjab, the power and water subsidies cost 6.8% of agriculture state domestic product (SDP)(2001/02); the cost of all input subsidies to the entire state of Punjab was 10.5% of agriculture SDP (World Bank, Sept 2003: Box 3.1, 19, Tab 3.3)³⁸. At the national level, the combined fiscal burden of all these subsidies exceeded \$33 billion or 2 trillion rupees in 2013 current prices, or 11% of agriculture GDP (World Bank Group, 2018: 34)³⁹.

Need to transition from traditional FSS: India has achieved FSS but not FSH, as food insecurity continues to affect millions, despite India's substantial achievement in extreme poverty reduction. Agricultural productivity remains low. Agriculture employs around 49% of the total labor force but its contribution to GDP is much less: around 15% (2017). Agricultural output has grown at an average of 3% percent per year since 1970, but with much less variability in yields because of a significant increase in irrigation. In a 20-country comparison of agriculture value added in 2014 (AG VA in 2010 USD), Malaysia had the highest AG VA and India ranked fifteenth (World Bank Group, 2018: 32-33, Fig 8 & 9). The decades-long complex web of input subsidies is now totally counterproductive. Instead of promoting high productivity, diversified agriculture resilient to climate change, it misallocates the enormous financial resources required to improve soil fertility, arrest resource degradation, and save scarce water resources in a country already classified as water stressed. As urbanizing India aspires to reach high-middle income status by 2030, the primary importance of grains in the Indian diet will decline as in other rice-eating Asian countries. Throughout developing Asia, the pattern of diet diversification is towards more nutrient-rich and high-value foods in more affluent and urbanized societies. The rationale for continued prioritization of grains is therefore becoming increasingly questionable. To date, the stranglehold of massive subsidies has however proved to be a virtually insurmountable political problem.

The People's Republic of Bangladesh (GNI/CAP: \$1,750): Food grains self-sufficiency a central goal for agriculture development and for food security

Brief background – Food grains self-sufficiency primary goal since independence (1971): Bangladesh, a low-middle income, densely populated (3277/sq.ml) delta nation is known for its tumultuous national history since independence: for example, the famine of 1974, the assassinations of Sheik Mujib, the first prime minister, and his family (1975), and of President Zia ur-Rahman (1981). More recently (2019), the politically unstable situation has been punctuated by the Awami League Government's crackdown on political dissent, on garment workers' strikes for higher wages, and suppression of

37. World Bank. Aug 19, 1999. India Foodgrain Marketing Policies: Reforming to meet food security needs (in 2 Vol) Vol. 1 Main report. Report # 18329-IN <http://documents.worldbank.org/curated/en/575711468750268959/pdf/multi-page.pdf>

38. World Bank. Sept 2003. India: Revitalizing Punjab's Agriculture. Report # 37069. <http://documents.worldbank.org/curated/en/363871468050066952/pdf/370690IN0Revit1whiteOcover01PUBLIC1.pdf>

39. World Bank Group. 2018. India: Systematic Country Diagnostic – Realizing the promise of prosperity. Report # 126284-IN <http://documents.worldbank.org/curated/en/629571528745663168/pdf/Volumes-1-AND-2-India-SCD-Realising-the-promise-of-prosperity-31MAY-06062018.pdf>

freedom of expression and association, among other human rights abuses⁴⁰. Physical geography is also problematic. Much of Bangladesh is not more than five meters above sea level, which makes it highly vulnerable to sea-level rise and storm-induced coastal flooding. Thus climate change poses an existential threat (World Bank Group, 2016: 17)⁴¹. For over 30 years, the central goal of the government was FSS, primarily rice, and to a lesser extent, wheat. Government support for paddy/rice has been provided mainly through output price support, price stabilization, and input subsidies. Despite agriculture's vulnerability to climatic shocks, agriculture's growth averaged 5% in recent years, driven primarily by productivity growth. TFP growth has averaged 2.7%. This growth is attributed primarily to 1980s sectoral policy reforms of input and output markets, the macro and trade reforms of the early 1990s, investment in irrigation expansion, modern technology, better road connectivity, more efficient markets, and increased mechanization (World Bank Group, 2016: xviii-xviii, xix)⁴². Rice production has risen from around 12.3 million metric tons (mmt) in the 1980s to 37.6 mmt in 2014. Bangladesh attained self-sufficiency in food production in 2010-2011 with gross production of rice and wheat of 35.0 million metric tons (Hossain, 2019)⁴³. In addition to agricultural growth, Bangladesh has become the world's second-largest garment exporter. For example, the ready-made garment sector accounted for more than 80% of total exports in 2014. As a result of these positive developments, Bangladesh has reduced poverty (in percent) significantly from nearly 49% in 2000 to 25% in 2016, some 25 million people; over the same period, extreme poverty fell from 34% to 13% (World Bank Group, 2019: Fig E1)⁴⁴. Other aspects of welfare have also improved: infant mortality has dropped, and there have been improvements in nutrition and life expectancy, expanded education including for females, and reduced fertility and family size. FS has therefore much improved since independence.

Various social safety net programs assist millions of food insecure: Bangladesh is well known for its extensive social safety network. The government's Public Food Distribution System (PFDS) supplies at least eight food assistance programs, each targeted at a specific group and with a specific purpose, e.g., Food for Work to increase employment among the poor in the dry season to build public infrastructure, Food for Education for primary school enrollment, Vulnerable Group Feeding to assist needy families in distress. In 1999, PFDS transferred some \$300 million, not counting the costs of storage and distribution. The programs' objectives range from very short term as disaster relief to longer-term developmental objectives including school enrollment and infrastructure investment. Moreover, Bangladesh has more than 100 social protection programs spread over 23 ministries. Coordination and effectiveness are problematic.

40. Human Rights Watch. Bangladesh Events 2019. <https://www.hrw.org/world-report/2020/country-chapters/bangladesh>

41. World Bank Group. March 8, 2016. Country Partnership Framework for Bangladesh for the Period of FY 16-20. Report # 103723-BD. <http://documents.worldbank.org/curated/en/362231468185032193/pdf/103723-REVISED-PUBLIC-IDA-R2016-0041.pdf>.

42. Gautam, Madhur and Rashid Faruquee. 2016. Dynamics of rural growth in Bangladesh: Sustaining poverty reduction. Directions in Development. Agriculture and rural development. World Bank Group <http://documents.worldbank.org/curated/en/512481467996688090/pdf/106579-PUB-ADD-SERIES-DOI-PUB-DATE-ISBN-ABSTRACT-SERIES-AUTHORS-PUBLIC-9781464808760.pdf>

43. Hossain, Md. Nazmul. July 2019. "Food security, self sufficiency, and nutrition in Bangladesh". https://www.researchgate.net/publication/334587975_FOOD_SECURITY_SELF-SUFFICIENCY_AND_NUTRITION_IN_BANGLADESH_Summery

44. Word Bank Group. 2019. Bangladesh Poverty Assessment: Facing old and new frontiers in poverty reduction. <http://documents.worldbank.org/curated/en/793121572582830383/pdf/Bangladesh-Poverty-Assessment-Facing-Old-and-New-Frontier>

In 2015, the government developed a National Social Security Strategy to streamline existing programs and improve both the effectiveness and efficiency of allocated public expenditures. NGOs also assist the food insecure, the two best-known being BRAC (initially Bangladesh Rehabilitation Assistance Committee), founded in 1972 by Sir Fazle Hasan Abed, and micro credit from the Grameen Bank, founded by Muhamad Yunus in 1983. These non-governmental organizations (NGOs) do not distribute food per se, but assist in fields including education and literacy, health, housing, credit and micro-enterprises, and disaster relief. They thus indirectly improve food security.

Strengthening disaster risk preparedness to address the food security risk posed by climate change: Although Bangladesh is highly vulnerable to climatic and other natural disasters, it has proven itself to be remarkably resilient in the face of these tremendous odds. It has built early warning and response systems, and countless community shelters in coastal areas. Initiatives undertaken have reduced losses from these extreme climatic events. The government is also preparing a long term plan – the Delta Plan 2100, based on the adaptive delta plan (ADP) principles, which include investing in land and water management infrastructure (including flood prevention), promoting agricultural productivity with climate-smart farm practices and technology, and changing policies to encourage diversification (away from its current primary focus on rice) and the move up the value chain.

Malaysia (GNI/CAP: \$10,590): Achievement of rice self-sufficiency synonymous with food security in a high growth, poverty-reducing, trade-oriented economy

From rice self-sufficiency to National Food Security Policy (NFSP) in 2008: Like many Asian countries, Malaysia accords domestic rice production special treatment: rice is essential to life, to reducing rural poverty among Bumiputeras, a key political constituency for the Government of Malaysia⁴⁵, and to maintaining social peace. After decades of pursuing the goal of full rice self-sufficiency (FSS), the NFSP espoused a broader concept of food security in response to the global food (fuel and financial) crisis of 2007-08. In earlier decades (until 1981-85), the goal was to achieve between 90%-100% FSS level. Subsequently, the targets were lowered, varying between 65%-85% FSS level to settle at around 70% in the National Agro-Food Policy (2011-20) (Sidique and Shaharudin, 2019: Tab 5.1)⁴⁶. How the Malaysian government sets the self-sufficiency level (SSL) target is however unclear. The objectives of NFSF (2008) in response to the food crisis were broader but the goals still gave top priority to domestic production and a high self-sufficiency level (SSL), thus:

- Increase production and productivity to achieve a high SSL for agro-food, not just rice;
- Ensure food producers earn sufficient income so food production does not decline; and
- Ensure an adequate, high-quality, and safe food supply.

Underlying these high SSL concerns is the Malaysian government's fear that continuously running a food trade deficit is a serious threat to national security, because such deficits make the nation vulnerable to sharp price fluctuations on the international rice market. The fear is that social unrest and spikes in world rice prices come together.

45. Bumiputeras are Malays; literally, 'sons of the soil'.

46. Sidique, Shaufique F. and Ashraf Shaharudin. 2019. Malaysia's Agricultural Transformation: National Food Security. Draft. Institute of Agricultural and Food Policy Studies, Universiti Putra Malaysia.

Substantial and sustained subsidization throughout the entire paddy-rice value chain: Given the historical context of paddy cultivation in British Malaya, the great depression of the 1930s, the rice shortage during the Japanese occupation (1942-45) and during the immediate years after the Second World War, the political importance given to full rice self-sufficiency in Malaysia is understandable. The government intervenes extensively throughout the entire paddy-rice value chain. It has subsidized paddy production heavily, built irrigation and other infrastructure, expanded its operations in rice milling and marketing, and monopolized rice imports. In more recent years (2018-2019), the budget allocated to paddy subsidies and other incentives was still substantial—around 25%-33% of the Ministry of Agriculture's expenditures—and exceeded that for any other crop (Omar et al, 2019: 40, Fig 2.5).⁴⁷ There has also been high protection of rice through pricing and marketing. Since the 1960s, prices have been fixed at every level in the value chain from production, through milling, marketing, and sale. Importing rice was a monopoly (until June 2018) controlled by the privatized (in 1996) Padiberas Nasional Berhad (BERNAS, formerly the Malaysian Paddy and Rice Authority).

Subsidization, taxation and rice price stability: Thus, while paddy growers are heavily subsidized through the guaranteed minimum price and other means, consumers are taxed but protected from price spikes and shocks. The retail price is controlled by the ceiling price set by the government. In the 2007-08 food crisis, the government succeeded in protecting consumers from the price shock by setting a price below the high international price, though from the 1980s to 2008, the domestic retail price of rice was consistently above the international price. It is clear that the two major goals of the Malaysian government's approach to food security—shock prevention and price stability—are highly valued by consumers, even though they pay dearly for them through higher-than-international prices, and as taxpayers⁴⁸. Rapid increases in food prices are considered to have a significant adverse effect on Malaysian consumers as food still carries a large weight of 30% in the consumer price index. The bottom 40% income group spends around 25% of its total household expenditure on food, compared to the top 20%, which spends only around 12%. With respect to expenditure on staple food, the bottom 40% spend relatively more than of their monthly household consumption expenditure on rice, compared to the top 20% (2016): 1.7% versus 0.6% (Sidique and Shaharudin, 2019: 12, 9, Tab 3.2).

The high financial cost of the Government of Malaysia's FSS approach. In terms of subsidies given to paddy growers, and expenditures on granary areas, the cost has been extremely high. In 2017, 45% percent of the MOA's total budget was given to support rice production. If one adds to this what consumers pay through trade policy (which raises domestic prices), and what taxpayers pay through subsidies, and compares that total to the total production value of rice, the cost is also high. Such a transfer from consumers and taxpayers, is called the "producer single commodity transfer (SCT)". The SCT (2017) for rice in Malaysia was 73%, higher than for other developing and emerging economies, and higher even than in Japan, considered to have the most protectionist regime for rice in the world (WBG & MEA, Feb 2019: ES. 1, ES. 2, Fig 4.3, 55)⁴⁹.

47. Omar, Sarena Che, Ashraf Shaharudin, and Siti Aiyssyah Tumin. April 2019. The Status of Paddy and Rice Industry in Malaysia. Khazanah Research Institute. Kuala Lumpur.

48. For shock prevention, the rice stockpile was increased from 92,000 metric tons to 552,000 metric tons, equal to an estimated 90 days' consumption. These measures helped the government of Malaysia prevent panic about rice scarcity during the 2007-2008 food crisis.

49. World Bank Group and Ministry of Economic Affairs, Malaysia. Feb 2019. Malaysia: The Agriculture Sector Public

The high opportunity cost of Malaysia's FSS approach: Even with such extensive subsidies and transfers, there is no evidence that Malaysia's rice production has become more competitive. Paddy production is also not remunerative. A simulation study by the International Rice Research Institute (IRRI) modeled the effects of allowing farmers in one of the most successful rice-growing areas to grow other crops, and found that this change could raise their incomes by about 50% (WBG & MEA, Feb 2019: x-xi).

Strengthening food security through sustained high growth and poverty reduction: Given that Malaysia's FSS approach has been wasteful, it is clear that sustained high and broad-based growth was the key factor promoting poverty reduction, and hence food security. Poverty levels were high in the early years: 49.3% in Peninsular Malaysia in 1970, 58.3% in Sabah state in 1976, and 56.5% in Sarawak state in 1976 (Economic Planning Unit, 2004: 15) (EPU, 2004: 15)⁵⁰. Among the Bumiputeras, 65.9% were poor, compared to 27.5% of Chinese, and 40.2% of Indians. Rural poverty was 58.7%, and urban poverty 21.3% (1970). However, by 2000, the poverty level had been reduced to 10% and 1.9% respectively (Abhayaratne, 2004: 5)⁵¹. Extreme poverty (\$1.9/day) has fallen to less than one percent, and the poverty level among rural Bumiputeras to 1.8% (2014). Even if one were to use the higher WBG's Upper Middle Income Class poverty line of \$5.50/day, the poverty level would fall from 16.7% to 2.7% from 2008 to 2015, a substantial reduction⁵².

Indonesia (GNI/CAP: \$3,840): Achievement of rice self-sufficiency a priority to achieve food security since Suharto

Food self-sufficiency a priority since the Suharto Regime despite changing consumer priorities in the 2010s: There are two sub-periods, with the Asian Financial Crisis 1997-98 acting as a watershed event in political economy. These are:

- Pro-poor and high productivity growth under Suharto: Indonesia's agricultural policy under Suharto (1967-98) was dominated by the goal of achieving 100% rice self-sufficiency (FSS), a goal that became paramount after the 1972-73 rice crisis, and which was equated to FS, a key factor strengthening the legitimacy of Suharto's government. The goal of FSS was achieved on average in the mid-1980s⁵³. For over three decades, from 1961 to 1998, agricultural growth per capita was 1.42% (World Bank, March 2002: 1, Tab. 1.1)⁵⁴. Annual growth of TFP (1971-98) averaged

Expenditure Review – Focused on Agrofood Sectors.

50. Malaysia: 30 Years of Poverty Reduction, Growth and Racial Harmony. Paper presented by the Economic Planning Unit. A case study from Reducing Poverty, Sustaining Growth: What Works, What Does not, and Why. A Global Exchange for Scaling Up Success Scaling Up Poverty Reduction: A Global Learning Process and Conference Shanghai, May 25-27, 2004.

51. Abhayaratne, Anoma. 2004. Economic growth and Poverty Reduction: Lessons from Malaysia.

52. World Bank. Poverty and Equity Brief, East Asia and Pacific. Malaysia, Oct. 2019. https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_MYS.pdf

53. During the Fourth and Fifth Development Plans (REPELITA IV AND V) 1983/84 to 1993/94, Indonesia was almost rice self-sufficient on average, but any particular year could be one with a domestic surplus with full warehouses (as in 1984, 1989, 1992), or domestic deficits, requiring a drawdown from warehouses and/or imports (as in 1986, 1987, 1988).

54. World Bank. March 2002. Determinants of Agricultural Growth in Indonesia, the Philippines, and Thailand. Policy Research Working Paper # 2803. Development Research Group, Rural Development.

0.45% (Timmer, 2005: Annex A 3.2)⁵⁵. To promote domestic rice production, the Suharto regime subsidized the adoption of the Green Revolution technology in high-yielding varieties (HYV) (e.g., irrigation, fertilizers, pesticides, improved seeds). The regime also guaranteed producers a floor price, while maintaining a ceiling price for consumers. Both producer and retail consumer prices were stable and maintained below but close to the trend of world prices. BULOG, the public logistics agency in charge of implementing the rice policy (also to a lesser extent corn, and cassava), controlled imports and exports. Under the 'New Order' government, Indonesia's macro and trade policies promoted growth, stability, and equity, the development trilogy as Timmer put it: "Starting in 1968, for three remarkable decades, Indonesia's GDP grew an average of 7.4% per annum ... The index of pro-poor growth reached 6.56 for the period 1965-90—the highest in Indonesian history—seven times the long-term average and nearly half as large again as the next best epoch in 1905-25" (Timmer, March 2019: 15-16, Tab 2)⁵⁶. This period of pro-poor growth greatly strengthened the FS of the poor.

- Highly unequal and low productivity growth post Suharto: After the fall of Suharto, a 100% FSS was again the priority of successive governments and was again achieved in 2008, the year of the triple food-fuel-financial crisis (2007-08). Domestic rice prices were maintained well above world prices but were kept stable⁵⁷. The high rice prices undermined the rice consumption of the poor but there was no panic hoarding. The Indonesian experience suggests that the public preferred price stability even if the rice prices were high⁵⁸. Agricultural growth in the 1990s stagnated, in contrast to the high growth from 1968 to 1992—an annual average of nearly 4%. Total factor productivity (TFP) growth in agriculture slowed from an annual average of 2.5% (1968-92) to a low of 0.1% per year (1993-2000) (World Bank, May 2007: 1, Tab 1.1)⁵⁹. In the 2010s, agricultural productivity remained much lower than its levels in the mid-1990s (World Bank Group, 2015: 30)⁶⁰. In the 2010s, agricultural policies focused on achieving food (not just rice) self-sufficiency in rice, maize, and sugar, based on fertilizer subsidies and restricted trade (World Bank Group, 2015: 9). Though rice self-sufficient, the continued low productivity of the agricultural sector has been a major drag on the entire economy, exacerbating the food insecurity of the bottom 40% (some 100 million people for a total population of around 250 million in 2015), and contributing to rising income inequality, which in turn made matters worse: between 2003 and 2010, the consumption of the bottom 40% rose by only 1%-2% per year, while growth among the top ninth and tenth deciles grew by 5.5% and 6.5% per year respectively (World Bank Group, 2015: 37-38).

55. C. Peter Timmer. June 2005. Indonesia: Operationalizing Pro-Poor Growth. Country Study for the World Bank, Draft.

56. Timmer, C. Peter. March 2019. "The Role of Public Grain Stocks in Food Security: The Indonesian Experience". DAI, Europe Ltd. A study funded by the European Commission. Directorate-General for Development and Cooperation, Unit C1. Food Reserves, Working Paper # 6. file:///Users/isabelletsakok/Downloads/FoodReserve_Indonesia.pdf

57. Source: Timmer (2019:15): "By March 2007, domestic rice prices were 57% higher than world prices"

58. As Timmer (2019: 10) put it: "Stable domestic prices, even if very high, were a political winner for Susilo Bambang Yudhoyono's second Presidential campaign in 2009."

59. World Bank. May 2007. Agricultural Extension Services in Indonesia: New Approaches and Emerging Issues. Report # 38468.

60. World Bank Group. Sept. 2015. Indonesia: Systematic Country Diagnostic—Connecting the bottom 40 percent to the prosperity generation. Report # 94066-ID <http://documents.worldbank.org/curated/en/576841467987848690/pdf/94066-SCD-P152827-SecM2015-0308-IDA-SecM2015-0212-IFC-SecM2015-0153-MIGA-SecM2015-0102-Box393228B-OUO-9.pdf>

The government of Indonesia operates a social safety net for the poor, including rice assistance through Raskin/Rastra: Since the economic collapse triggered by the financial crisis of 1997-98, the government of Indonesia has been delivering subsidized rice to the poor, through the program Raskin, now called Rastra. Rastra is well funded, national in scope, and implemented by many cross-sectoral agencies at numerous levels of government. Since 2013, coverage was 15.5 million households, around 24% of all households in Indonesia. But, an estimated 52% of households have purchased Rastra rice since 2007 (Timmer et al, 2018: 288-289)⁶¹. This program has been criticized for being corrupt, with extensive ‘leakages’ to the rich, and for being poorly targeted and cost-ineffective. An important cultural feature, which largely accounts for the distribution of subsidized rice to non-targeted households (considered ‘leakage’) is the Indonesian concept of what is required to keep community harmony—distribution should be more even across the community. Other programs strengthen FS but indirectly. They include (i) PKH, a conditional cash program that invests in human capital; and (ii) BSM, a conditional cash program that gives scholarship to the poor. Indonesia allocates roughly 0.5% of GDP to social assistance, an amount considered too low when compared to expenditures of other large middle-income countries. The benefit levels are also considered very inadequate relative to the risks the programs target; e.g., BSM does not cover many ancillary costs (like school books and transport) of students in school. In addition to the inadequacy of resources allocated, the social safety net is distributed broadly (over 12 ministries, 22 programs, and 87 activities), making proper coordination and cost-effectiveness highly problematic (World Bank Group, 2015: 60-61).

The government of Indonesia intends to develop a comprehensive disaster risk management approach for disaster-prone Indonesia: Indonesia, an equatorial and archipelagic nation consisting of 17,508 islands (only some 6000 are inhabited), is one of the most vulnerable countries to the increasing adverse impacts of climate change, including extreme weather events—tropical storms and droughts—and sea level rise. It is situated in one of the world’s most active disaster hot spots (Indonesia sits on the ‘ring of fire’), where several types of disaster, such as earthquakes, tsunamis, volcanic eruptions, floods, landslides, droughts, and forest fires, frequently occur. In addition, more than 41 million Indonesians live less than ten meters above sea level. Coastal cities, including Jakarta, Semarang, and Surabaya, have been of particular concern because of their high population densities (World Bank, 2016: 7)⁶². The forested and coastal areas are occupied by millions of people from vulnerable population groups: 32 million live in forested areas and their poverty rate is nearly 20%, well above the national rate of 11.3% percent (2014). In Java, 58% of the population lives in degraded, water-insecure areas, where water and soil pollution are among the highest in the world (World Bank Group: 2015: 64-65). The heavy toll of repeated disasters is well exemplified by three disasters that struck Indonesia in 2018 (earthquakes in July and August; then again in September; volcanic eruption in December), and tornadoes, floods, landslides, and forest fires in 2019 (World Bank, Nov

61. Timmer, C. Peter, Hastuti, and Sudarto Sumarto. “Evolution and Implementation of the Rastra Program in Indonesia”. Ch 7: 265-310 in Alderman, Harold, Ugo Gentilini, and Ruslan Yemstov. (eds.) 2018. *The 1.5 Billion People Question: Food, Vouchers, or Cash Transfers*. The World Bank Group. <https://openknowledge.worldbank.org/bitstream/handle/10986/27907/9781464810879.pdf?sequence=5&isAllowed=y>

62. World Bank. Feb 9, 2016. *Indonesia: Climate change development policy loan (IBRD-71950)*. Report # 103063. Project Performance Assessment Report. <http://documents.worldbank.org/curated/en/987781468186883131/pdf/103063-PPAR-P120313-SecM2016-0046-OUO-9.pdf>

2019: 8)⁶³ ⁶⁴. Since the Indian Ocean earthquake and tsunami of Dec. 26, 2004, Indonesia has made significant improvements in disaster risk management, in terms of laws and regulations, and institutional and fiscal capacity, but these are far from adequate to address these daunting risks, as the government itself recognizes. It intends to develop a comprehensive approach, the Indonesia Disaster Resilience and Reconstruction Program, with donor assistance (World Bank, Nov 2019: 9).

Chile (GNI/Cap: \$14,670): Evolution of food security policy in an open, high growth but highly unequal economy

Brief background: Price bands to reduce price volatility were an important component of food security policy until 2015-16: Price bands for wheat, sugar, and vegetable oil under the Allende government (Nov. 3, 1970 to Sept. 11, 1973) were reinstated in 1983 after they were abolished in 1980 under Pinochet (Sept. 11, 1973 to March 11, 1990). The goal of the price bands was to protect domestic consumers and producers from volatile international prices and to protect domestic producers from foreign competition, and thereby promote their FS. When transformed into equivalent tariffs, the price bands represented a 64% percent tariff on sugar (1984-89 average), 27% on wheat (average 1984-87), and 80% on vegetable oil (average for 1988-89) (Meller, 2000: 128)⁶⁵. However, these price bands were judged by the World Trade Organization (WTO) to be non-compliant. The Government of Chile subsequently modified the way the maximum and minimum prices of the band were set. Essentially, COTRISA, the implementing agency, could not, as of 2003, guarantee farmers the same purchase price at sowing and at harvest time. Under the Free Trade Agreement between Chile and the United States (2003-04), under which Chile imports wheat, wheat flour, and sugar from the United States, the price bands were completely phased out as required: within 12 years of the 2002 WTO ruling (that was in 2015-16).

Search for resilience against downturns in copper prices through diversification of agro-food exports: The search for more stability through price bands should be understood in the context of Chile's high vulnerability to downturns in copper prices. This vulnerability gradually decreased thanks to diversification. Copper exports, which accounted for nearly 50% of total merchandise export earnings in 1989, accounted for only 31% of total export earnings by the early 2000s, as Chile successfully diversified its export earnings from copper and restructured its agricultural trade. Agriculture, despite it being only about 4% of GDP (2006), remains a strategic sector. When downstream agro-food activities are included, the contribution of the agriculture and agro-processing sector (henceforth referred to as expanded agriculture) is at least 10% of GDP, considering the net impact through linkages. Before 1974, Chile's main traditional agricultural exports were beans, lentils, and wool. After 1974, the share of non-traditional agricultural exports, including apples, grapes, pears, and peaches, increased dramatically (USDA, 1992). Agro-food exports—fresh and processed—of fruits, wine, and fish, have been the star performers. Since around the mid-1980s, yearly export growth rates of agro-food have

63. World Bank. Nov. 18, 2019. Republic of Indonesia: Indonesia Disaster Resilience Initiatives Project. Project Appraisal Document. Report # PAD 3355. <http://documents.worldbank.org/curated/en/160881575169231425/pdf/Indonesia-Disaster-Resilience-Initiatives-Project.pdf>

64. Also, in Asia News.it 12/18/2019. Indonesia experienced 3,622 natural disasters in 2019. <http://www.asianews.it/news-en/Indonesia-experienced-3,622-natural-disasters-in-2019-48854.html>

65. Meller, Patricio. 2000. *The Unidad Popular and the Pinochet Dictatorship: A Political Economy Analysis*. Translated in English by Tim Ennis. MacMillan Press Ltd in London; St. Martin's Press, LLC, New York City.

averaged 10% or greater (Anderson and Valdes, 2008: 125, Table 4.2)⁶⁶). By the early 2000s, agriculture and agro-food exports contributed 29% of total merchandise exports (OECD, 2008: 11)⁶⁷.

Food security of the poor plunged under Pinochet's highly unequal economy, though he re-instated the price bands in 1983: The 1970s-1980s meant increased food insecurity for the poor. These years were characterized by Pinochet's fiscal retrenchment and market reforms. The rate of unemployment shot up to 17%, while minimum wages (in real terms) fell by 26% (1974-1989), relative to the previous period (1960-1973). There were two big recessions: in 1975 and 1982-1983. The poor—bottom 40% (the two lowest quintiles)—received 9.1% of total national income under Pinochet; under the three previous governments (1959-1973), their share was 10.6%. The rich, the fifth quintile, received 62% and 55%-58% respectively. Thus, the ratio of the fifth to the first quintile was 23.6 under Pinochet, increasing from 17.9-19.5 under the previous three governments. Public spending on social programs was severely cut in 1975. However, in the recession of 1982-83, social spending was expanded to assist the unemployed and the poorer groups. Social spending fell by 16% (1975-1976) and by 12.7% (1983-87). These cutbacks worsened the already highly unequal income distribution in Chile under Pinochet. Under the government of Alwyn (1990-1994), the relative position of the first quintile improved slightly: the ratio of fifth to first declined to 18.1 (Marcel and Solimano, April 1993: 12-13, Tab. 1, 18)⁶⁸.

FS of the poor strengthened through sustained and diversified growth, and through social programs, rather than through price bands per se: After the tumultuous years, especially for the poor, under Allende and Pinochet, macro stability and growth finally returned to a trade-oriented economy. From 1986 to 1997, Chile's economy grew at an average annual rate of 7.6%, one of the highest in the world, more than twice the average in Latin America. From 2000 to 2009 period, average annual growth slowed to 3.5% (World Bank Group, 2011: i)⁶⁹. Growth recovered and increased to 5%-6% per year up to 2011-2012, when it slowed again to 1.6% in 2016 because of low copper prices (World Bank Group, 2015: 2)⁷⁰. During these two decades of high but somewhat uneven annual growth within a volatile international environment, poverty was substantially reduced: the share of the population living in poverty (on \$5.50 per day) fell from 30% in 2000 to 6.4% in 2017. Other indicators of socio-economic wellbeing also improved through increased and well targeted social programs: e.g., a decrease in infant mortality, declining dropout rates at primary and secondary school levels, and completion of secondary school by all rural households. Chile Solidario ⁷¹ was created in 2002 to assist the very

66. Anderson, Kim and Alberto Valdes, eds. 2008. *Distortions in Agricultural Incentives in Latin America*. Washington, D.C.: World Bank.

67. OECD. 2008. *Review of Agricultural Policies – Chile*.

68. Marcel, Mario and Andrés Solimano. April 1993. *Developmentalism, Socialism, and Free Market Reform: Three decades of Income Distribution in Chile*. Policy Research Working Paper, # 1188. World Bank.

69. World Bank Group. Jan 11, 2011. *Country Partnership Strategy for the Republic of Chile for the Period FY 11-16*. Report # 57989-CL. The period 2008-09 was of crisis - the triple food, fuel and financial crisis. Chile was then hit by a strong earthquake in 2010. <http://documents.worldbank.org/curated/en/128311468222271645/pdf/579890CASOR2011e0only1910BOX358277B.pdf>

70. World Bank Group. Jan 22, 2015. *Performance and Learning Review of the Country Partnership Strategy for the Republic of Chile for the period FY 11-16*. Report # 94271-CL <http://documents.worldbank.org/curated/en/128311468222271645/pdf/579890CASOR2011e0only1910BOX358277B.pdf> <https://www.worldbank.org/en/country/chile/overview>

71. It is a conditional cash transfer program with a mission to integrate the participants into local support networks, including psycho-sociological support, family coaching, and preferential access to local services, transfers, and

poorest (the 5% poorest families) to better access social services in the hope of getting better jobs and housing, although early evidence is not encouraging (Carneiro et al, 2015: 5-6)⁷². Furthermore, Chile's social protection policies do not assist unprotected workers—those in the informal sector—by providing insurance in the case of loss of employment (World Bank, 2004: ii-iii)⁷³. Therefore, although social protection measures do assist in strengthening the food security of the vulnerable population, the heavy lifting is accomplished through sustained growth. The stability in the economic environment of the poor producers and consumers, which was sought through price bands, is being better accomplished through economic diversification, primarily due to the dynamic growth of agro-food exports.

Peru (GNI/CAP: \$6,914): Growth since 2001 and the Commission for Food Security and Nutrition jointly strengthen the food security of the vulnerable

Brief background: FS strengthened through growth and a social safety net: Since 2001, Peru has been one of the fastest growing economies in Latin America, at an annual average rate of 5.3%, a welcome development after the crisis years of the 1980s, followed by the controversial term in office of President Fujimori in the 1990s. Between 2004 and 2014, poverty was substantially reduced, from 58% to 23%, with the income of the bottom 40% growing 50% faster than the national average (World Bank Group, 2017: Fig 1, 11-12, 9, 3-5)⁷⁴. In this context, the Commission formulated two plans: the National Strategy for Food Security and Nutrition (2013-2021) and the National Plan for Food Security and Nutrition (2015-2021). A range of agencies is involved in the implementation of these national plans, in particular the Ministry of Agriculture and Irrigation, and the Ministry of Development and Social Inclusion. These programs help relieve typical pressures on the poor including nutrition, and education for early childhood and adolescence. For example, the Ministry of Agriculture funds Agrorural to strengthen the capacities and incomes of producers. The Ministry of Development and Social Inclusion funds large-scale conditional cash programs, such as Juntos, to assist poor households with cash, education, and health services for children until they are 19 years old, provided the parents meet certain conditions. These social welfare programs have helped lift some 20% of Peru's population of 31 million (2016) out of poverty and have reduced malnutrition (OECD & FAO : 2016: Ch 6, 139-43)⁷⁵.

benefits. Unfortunately, it has not yet improved the employment and housing conditions of participants.

72. Carneiro, Pedro, Emanuela Galasso & Rita Ginja. Jan. 2015. Tackling Social Exclusion: Evidence from Chile. WPS # 7180. World Bank Group. Dev. Res. Group. Poverty and Inequality Team <http://documents.worldbank.org/curated/en/789431468238175259/pdf/WPS7180.pdf>

73. World Bank. JN 1, 2004. Chile: Household risk management and social protection. Report # 25286-CH <http://documents.worldbank.org/curated/en/617441468216298643/pdf/252860CLOORisk10I00202068801public1.pdf>

74. World Bank Group. Feb 2017. Peru: Systematic Country Diagnostic. Report # 112694-PE. In the 1980s, Peru suffered from the debt crisis and the armed conflict with the Sendero Luminoso (the Shining Path). President Fujimori (1990-2000) stabilized and liberalized the economy but abused his executive powers. He was also accused of crimes against humanity. He was pardoned in 2017 but the Supreme Court reversed the pardon. <http://documents.worldbank.org/curated/en/919181490109288624/pdf/Peru-SCD-final-3-16-17-03162017.pdf>

75. OECD & FAO. 2016. "A Territorial Approach to Food Security and Nutrition Policy: The Case of Peru". Ch 6: 135-147 in Adopting a Territorial Approach to Food and Nutrition Policy. <https://www.oecd-ilibrary.org/docserver/9789264257108-9-en.pdf?expires=1584462505&id=id&accname=guest&checksum=BFF3E5CD948A085F138515B17283288A> https://www.oecd-ilibrary.org/urban-rural-and-regional-development/adopting-a-territorial-approach-to-food-security-and-nutrition-policy_9789264257108-en

What combination of policies is most promising for food security and increased resilience to shocks? Recent progress in Peru strongly suggests a combination of sustained, equitable economic growth and social safety net programs offer strengthened food security for the entire nation. The challenges in sustaining such growth and funding these programs are however enormous. First, Peru is highly vulnerable to climate change and prone to natural disasters, including earthquakes, flash flooding, landslides, and volcanic activity. Second, its economy is highly dependent on extractive sectors, and therefore vulnerable to the ups and downs of these commodity markets. High growth in recent years was largely due to growth in Peru's traditional exports (minerals mainly, but also sugar, cotton, and coffee), driven by higher mineral prices and higher volumes of non-traditional exports (Illescas and Jaramillo, 2011: 2, 19)⁷⁶. Mineral exports, including copper and gold, account for 35% of total exports. A downturn in terms of trade, as in 2014, reduced private investment by some 6%. Mining, fishing, and hydrocarbons represent 66% of its exports in 2015 (World Bank Group, Feb 2017: 14, 73). Third, high productivity growth in Peru's three geographical regions and sustainable resource management are also a challenge for agriculture, which is still predominantly subsistence-oriented except for the high-value, export-oriented production of the Costa region. TFP growth averaged 7.2% per year from 2007 to 2015 in the Costa region, while it has remained essentially flat in the Sierra and negative in the Selva regions. Agri-food exports—non-traditional—of fruits and vegetables (e.g., grapes, avocados, asparagus), and traditional—of coffee and sugar—have grown at 17% per year since 2000 (World Bank Group, JN 2017: 53-57, 115)⁷⁷. Since expanded⁷⁸ agriculture contributes 11.3% to GDP (2007), employs a majority of the poor, and is on the front line to combat climate change, raising its productivity and production sustainably remains central to strengthening the food security of the vulnerable population and their resilience to shocks (World Bank Group, JN 2017: 48, 105, 114-115). Fourth and finally, poverty is still extensive despite recent progress. Poverty is primarily rural, but since Peru is highly urbanized—with the population 75% urban to 25% rural—in absolute numbers, the urban and rural poor are evenly distributed. Poverty rates are higher in the Highlands (Sierra) and the Amazon (Selva)⁷⁹, with the highest incidences among the indigenous people and Afro-Peruvians (World Bank Group, Feb 2017: 5-6)⁸⁰. These four structural factors combine to make the existence of a social safety net an essential complement to high and equitable growth for the achievement of FS in Peru.

76. Illescas, Javier and C. Felipe Jaramillo. Nov 2011. "Export growth and Diversification: The case of Peru". WPS # 5868. <http://documents.worldbank.org/curated/en/217021468295498738/pdf/WPS5868.pdf>

77. World Bank Group. Agriculture Global Practice. Environment Global Practice. JN. 23, 2017. "Gaining momentum in Peruvian Agriculture : Opportunities to increase productivity and enhance competitiveness". <http://documents.worldbank.org/curated/en/107451498513689693/pdf/P162084-06-26-2017-1498513685623.pdf>

78. The definition of 'expanded' is primary agriculture + forward and backward linkages.

79. Peru consists of three natural regions: the Costa, the plains which runs along the west coast; the Sierra which occupies the central highlands; and the Selva, the Amazon region in the east. The population distribution is 55%, 32%, and 13%, respectively.

80. World Bank Group. The Republic of Perú: Country Partnership Framework for the Period FY 17-21. Report # 112299-PE. <http://documents.worldbank.org/curated/en/522711493949637279/pdf/Peru-CPF-112299-PE-04102017.pdf>

Section III: What worked, what did not and why

We apply two interpretations of ‘what worked’ in reviewing the experience of selected countries in their achievement of FSH to gain policy insights and learn policy lessons. These are:

1. The production results fulfill the stated goal. Thus FSS works if the measures taken result in the country or regional bloc no longer importing the staples the government or decision-making authority wants in order to be food self-sufficient. FSY works if the country or regional bloc retains control over its agricultural and food policy.
2. The results in terms of availability, access, utilization, and stability regarding food are such that FSH is satisfied. That is to say the following situation prevails: “Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”.

Meaning of ‘worked’—promoted a sustained and broad-based increase in agricultural productivity growth: FSS and FSY have ‘worked’ to achieve some or all components of FSH to the extent that they have driven governments to prioritize increasing the productivity of their domestic agriculture and food systems. The case studies we have included show that when governments consider the productivity of agriculture as central to their national security and even political survival, they invest the needed resources. FSS ‘worked’ in the cases of: (i) the CAP as it went from food shortage in the early post-Second World War years in Europe to surplus by the 1970s and 1980s; (ii) war-damaged Japan accumulated a huge rice surplus by the 1970s; (iii) India went from near-famine conditions right after independence to rice exports by the early 1990s; (iv) Indonesia, which had massive poverty at independence, did not have to import rice on average in the mid-1980s under Suharto, or in 2008 under Susilo Bambang Yudhoyono; and (v) Bangladesh, long referred to as a ‘basket case’ became food (rice and wheat) self-sufficient in 2010-2011.

Limitations of FSS as ‘working’: However, it is not necessary for a country to explicitly promote FSS to support the sustained productivity growth of domestic agriculture, as evident in the case of the United States. Chile’s economy has also performed well although it did not promote FSS, but instead wanted to have stable prices through price bands. FSS is also not sufficient to achieve FS in two senses of the word: (i) even in the high-income cases of the USA, EU, Japan, and the Republic of Korea, there is a need for a social safety net of income and food assistance because millions are relatively poor for reasons including unforeseen shocks and personal misfortunes, old age and social abandonment; and (ii) even when FSS is reached in many lower-income countries, there are still millions in abject poverty—the poverty rate (at \$5.50 /day) is well above 10%. It is crystal clear that achieving FSS does not mean achieving food security in the sense of FSH.

Did the achievement of FSS give countries more control over their basic food supplies and thus increased FS? Yes, but at a high cost: The loss of control over one’s food supply is at the heart of why food security is often viewed as a national security risk. Loss of control can come in different forms, including: (i) market turbulence leading to price spikes and high volatility; (ii) sudden cut in one’s supplies, as recent food crises and logistical disruptions due to the COVID-19 pandemic show; (iii) natural calamities, which

are expected to increase in frequency and severity because of climate change; and (iv) violent man-made conflicts, which are too common. The EU found that maintaining control through the CAP led to huge stocks which became a major budgetary burden and a key reason for successive reforms. Under budgetary pressure, intervention prices favoring selected commodities were eliminated in the mid-1990s, which meant that EU farms and agro-food firms became more exposed to global competition. In response, they have increasingly resorted to the use of risk management tools such as futures and options. But these tools are not being embraced by many developing countries which have neither the needed underlying financial infrastructure nor the financial scale of farm and agro-food firm operations, among other things.

Stockbuilding as a means of retaining control over food supplies: Governments of many countries resort to building public grain stocks as a key component of their FSS approach. Examples include Japan, China, India, Bangladesh, Indonesia, and Malaysia. The 2007-2008 and 2010-2011 food price spikes rekindled interest in developing regional as opposed to national food grain stocks: for example, the ASEAN+3 (China, Japan, and South Korea)⁸¹. These stocks are to enable governments to release supplies in an emergency situation of sharp price rises. The experience with these stock-building efforts is however mixed. An extensive review found that “Using grain stocks to provide readily available emergency food reserves targeted to the most vulnerable has proven to be a more effective instrument to improve food security outcomes,” whereas “Using grain stocks to stabilize domestic prices has generally not been an effective instrument to improve food security outcomes” (World Bank, Sept. 2012: xi)⁸². In Malaysia and Indonesia, governments released their rice stocks following the rice crisis of 2007-2008, which kept domestic prices stable but well above international prices. So, the governments maintained control but at a high financial and economic cost. The opportunity cost of FSS is substantial in terms of foregone investment in the basic public goods and services required to promote successful agricultural transformation and further reduce extensive poverty. The case of India, which is locked in a subsidy trap, highlights this problem, though India is not the only country; another example was Indonesia in the 2000s. The governments of India and Indonesia gained politically though. However, although politically popular, by stabilizing rice prices at such a high level, governments undermine the food security of poor consumers, who tend to consume more rice (relative to their incomes) than richer consumers, who can afford diversified diets. This selective review shows that the achievement of FSS is too blunt and costly a tool to deal with increasingly competitive global markets, and with food-price spikes.

What worked: sustained increases in agricultural value added and diversification at primary and processing levels: How FSS was pursued impacted on the extent to which the four aspects of FSH were or were not achieved. Compare the varying developmental achievements of the countries espousing FSS, but with different strategies. Some strategies worked; others did not. The CAP contributed to successfully industrializing the EU, since it was pursued within an overall macro strategy that invested in sustained agricultural and nonagricultural productivity growth, and a regional bloc that greatly enlarged markets for

81. The Association of Southeast Asian Nations (ASEAN) is a regional grouping that promotes economic, political, and security cooperation among its ten members: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

82. World Bank. Agriculture and Rural Development. Sept 2012. Using Public Foodgrain Stocks to Enhance Food Security. Report # 71280-GLB. <https://openknowledge.worldbank.org/bitstream/handle/10986/11878/712800ESWOP1130Foodgrain0Stocks0web.pdf?sequence=1&isAllowed=y>

each member country. China before and after Deng Xiaoping's agricultural reforms in 1979 espoused FSS, but food was scarce and poverty widespread under Mao's socialist agriculture. With the return to private incentives under the widespread adoption of the Household Responsibility System, and other supportive measures, China's agriculture was transformed, and poverty reduction was substantial. FSS was a priority for both Malaysia and Indonesia since independence, over 60 years ago. The government of Malaysia succeeded in promoting transformative and inclusive growth of agriculture through sustained and substantial investments in public goods and services to "get agriculture moving", and then to diversify agriculture through systematic value chain development (World Bank Group, 2019: Executive Summary)⁸³. Indonesia experienced three decades of pro-poor growth from 1968, growing at an annual average of 7.4%, but has not yet succeeded in transforming its agriculture and economy, following the collapse of Suharto's regime and the economy during the Asian Financial Crisis of 1997-1998. People hoarded food and prices rocketed, plunging the country into political chaos, sharply increasing poverty, and reversing decades of progress. The three decades of prioritizing rice FSS did nothing to prevent this devastating food crisis. This collapse was in sharp contrast to Malaysia's resilience in the face of the same crisis. Such resilience is a hallmark of all economies which transform successfully. Unless an economy is resilient, it becomes very difficult for it to stay the course when buffeted by shocks. Achieving agricultural and economic transformation typically takes decades—it is 'slow magic'—and that is what is required to achieve FSH.

What did not work and why: What has not worked is pursuit of FSS at high financial and opportunity costs, to the detriment of investing valuable resources in the public goods and services needed to boost the productivity of smallholder agriculture, connect it to lucrative markets, and diversify. Too often, the pursuit of FSS undermined the incomes and food security of smallholders, while constraining the overall transformation of smallholder agriculture and its synergistic interaction with a growing macro economy. Achieving FSH requires going well beyond FSS or FSY since "no country has succeeded in its industrial revolution without a prior (or at least a simultaneous) agricultural revolution. Neglecting agriculture in the early stages of development is neglecting development" (Timmer, 2015: 4)⁸⁴. Food security requires an agricultural revolution and not just producing enough food staples. Achieving FSH requires a holistic approach—short and long term; macro, sector, and micro—that is able to reduce poverty while effectively addressing two key challenges of today's world: (a) the integration of economies in an increasingly competitive global economy; and (b) global warming with the expectation of more frequent severe climatic events. The first challenge requires that smallholders be profitably and productively linked to value chains, domestic and global. The second challenge requires that smallholders have access to (i) agricultural research and extension to adapt their agricultural practices to be climate resilient; (ii) early-warning systems; and (iii) institutions to help them manage risks and recover costs, among other things. With much of the world still, at time of writing, in the grips of the COVID-19 pandemic, the state of public health is increasingly recognized as being critical for food security. In sum, the task of achieving FSH has become even more urgent and more complex.

83. World Bank Group. Nov 2019. Agricultural Transformation and Inclusive Growth: The Malaysian Experience. Global Knowledge and Research Group in Malaysia, <http://documents.worldbank.org/curated/en/617611574179512389/pdf/Agricultural-Transformation-and-Inclusive-Growth-The-Malaysian-Experience.pdf>

84. C. Peter Timmer (2015) Food Security and Scarcity: Why Ending Hunger Is So Hard. The Center for Global Development. The University of Pennsylvania Press, Philadelphia.

About the authors

Isabelle Tsakok

Isabelle Tsakok is an adjunct professor at SIPA and a Senior Fellow at the Policy Center for the New South, previously known as OCP Policy Center, who focuses on rural development, agricultural economics, policy analysis, food security and poverty reduction. She holds a PhD in Economics. Dr. Tsakok has worked on development issues for over twenty-five years, first as World Bank staff and since retirement as a consultant. She has specialized in policy analysis, program and project formulation and evaluation, research and training activities in agriculture, agro-business, rural development and poverty reduction. She has worked in most regions of the developing world: Africa, Asia - South, Southeast and East, North Africa and the Middle East and Latin America.

Fatima Ezzahra Mengoub

Fatima Ezzahra Mengoub is an economist at the Policy Center for the New South. She specializes in agricultural economics and works on several issues related to agricultural growth analysis, economic structural change, inter and intra-regional agricultural trade, natural resource management and food security. She has published various articles on the role of agricultural investment, agricultural value chains, productivity and technological change in agriculture and water management. She has also taught macroeconomics and microeconomics at the Hassan II Institute of Agronomy and Veterinary Sciences (IAV) and the School of Governance and Economics (EGE). She holds an engineering degree in agricultural economics from the Hassan II Institute of Agronomy and Veterinary Sciences and is preparing a doctoral thesis on the impact of technological changes induced by irrigation on agricultural growth in Morocco.

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Policy Center for the New South, formerly OCP Policy Center, is a Moroccan policy-oriented think tank based in Rabat, Morocco, striving to promote knowledge sharing and to contribute to an enriched reflection on key economic and international relations issues. By offering a southern perspective on major regional and global strategic challenges facing developing and emerging countries, the Policy Center for the New South aims to provide a meaningful policy-making contribution through its four research programs: Agriculture, Environment and Food Security, Economic and Social Development, Commodity Economics and Finance, Geopolitics and International Relations.

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Policy Center for the New South

Suncity Complex, Building C, Av. Addolb, Albortokal Street,
Hay Riad, Rabat, Maroc.

Email : contact@policycenter.ma

Phone : +212 (0) 537 54 04 04 / Fax : +212 (0) 537 71 31 54

Website : www.policycenter.ma