Potatoes' crop in Boyacá, Colombia. Photo by: Ginna Vergara, Colombian Agricultural Entrepreneur.

The importance of Emerging Market Economies in Global Agriculture and Food Security

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In past decades, globalization has profoundly shaped food systems through a complex international trade dynamic. According to the Food and Drug Administration, maize, rice and wheat provide around half of the world's caloric intake. Then I wonder, who produces them? I'm not surprised that emerging market economies (EMEs) lead world production of main staple foods. With the exception of the United States, the European Union and Canada, seven of the ten largest producers of corn in the world, are emerging economies (Table 1). Rice (Table 2) and wheat (Table 3) are likewise dominated by emerging markets. As we shall see, large agricultural suppliers integrate important economic landscapes, notably the BRICS, of which China, India and Brazil stand out.

Overview of agriculture in Emerging Market Economies

The availability of arable land is a perennial challenge in the face of population growth and increasing world food demands. Emerging countries show promise thanks to the size of the land available for cultivation. India, China, Russia and Brazil are in the Top 5 ranking of countries with the highest arable land, only surpassed by the United States. In addition, irrigation systems, diverse climatic conditions and water availability contribute to their propitious ecosystems.

Just as land and water are critical inputs for agricultural development, so is the labor force. The percentage of the population working in this sector in emerging countries is quite high, with India accounting for around 44 percent of the total labor force, China at around 18.4 percent (World Bank, 2016), and Brazil at 10 percent (World Bank, 2018). Much of the rural population of EMEs is linked to subsistence agriculture, particularly in markets such as Colombia, Mexico, Vietnam and Philippines, among others (also EMEs).

Improvement Policies

Policies play a fundamental role in agricultural development as they drive and shape market conditions. For instance, in China, private R&D investments in this sector were low until the Agricultural Bank of China was created in 1951, with the promise to revolutionize traditional Chinese agriculture. It is now listed by Forbes as the 5th largest public company by assets (Forbes, 2018), supporting farmers loans, rural infrastructure development, as well as access to machinery and equipment.

Meanwhile in Brazil, productivity gains in agribusiness materialized more recently. From 2000 to 2013, productivity rose by 105.6%, whereas other sectors fared even negative growth (Arias et al., 2017). The national government strongly promoted the adoption of policies encouraging large-scale agriculture with access to equipment, loans and efforts to comply with phytosanitary standards required by the international market. Associations and farmer's cooperatives also played a role in overcoming market and regulatory failures such as high transaction costs, logistical and operational difficulties, price disparities, among others.

Nevertheless, policymaking process around agriculture has not been an easy task for some EMEs as they face difficulties such as poor governance, armed conflict (case of Colombia), lack of intersectoral cooperation and land tenure. Therefore, the improvement of policies turns out to be a structural issue which compromises social, economic and environmental dimensions.

Agricultural Challenges

There are however obstacles ailing the transition towards sustainable agriculture:

(I) Limited access to capital and financing is a strain on small and medium farmers looking to invest in new technologies and improve their productivity. High interest rates and the absence of regulated financial institutions afflict farmers who seek lenders from non-institutionalized sources. Policy and regulatory interventions are urgently needed to respond to this bottleneck (World Bank, 2018b).

(II) Generational shift, as more people migrate to urban areas. By 2050 it is expected that 68% of the world's population will live in cities (UN, 2018). The median age of farmers in EMEs is high. In Brazil around 22% of the rural population is over 65 years old (EMBRAPA, 2018), while in Colombia the average age of sugar cane growers is 55 (Dinero, 2017).

(III) Inclusion of producers in small and medium-sized in agribusiness, who produce 70% of the food worldwide (FAO, 2017). Incorporating them into value chains eases access to more competitive markets, generates formal jobs, and boosts incomes of millions of rural households.

Even as EMEs make gains in global food production, their populations are still burdened by food insecurity. For instance, corn is found in a wide variety of foods, from sweeteners, alcohol, starch, oil, to livestock feed. Nearly 43% of total corn production in 2017 was dominated by seven EMEs (see Table 1). A core concern lies in the clustering of large producers which in turn exacerbates the dependence of other countries on the use of corn as a basis for other products. A modest change in supply could unleash a rise in prices and leave millions at risk of food insecurity. The paradox is that emerging countries produce much of the global market of the grain but undergo complex processes of food insecurity. Such is the case of Argentina, which is undergirded by an agricultural development model oriented towards intensive commercial export, but without policies to protect small and medium-size producers who now face constraints in accessing a balanced diet (OHCHR, 2018).

Conclusion

More globally, macroeconomic policies and governance systems that ensure improvement in the agricultural sector are only a fraction of all the effort needed to solve the food supply challenges. It is then necessary to deploy intersectoral actions, hand in hand with the public and private sector and civil society involved in the food value chain. Building on the goals of the international call to "leave no one behind", as the UN Member States pledged in the UN 2030 Sustainable Development Agenda, could mitigate other worldwide challenges such as poverty reduction and food insecurity. It behooves EMEs to take bold actions towards sustainability as a tool to foster social and economic development.

About Juan Pablo Casadiego

Juan Pablo holds a BA in Management from Los Andes University in Colombia, where he currently works as research assistant at the School of Management. He was a research intern at the Emerging Markets Institute of Cornell University during the summer 2018, under the supervision of Professor Lourdes Casanova. After that, he worked in Istanbul for six months, at ProColombia, which is the Colombian government agency in charge of international trade and investment affairs.

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Tables

Table 1.
Top 10 corn worldwide production by countries 2017-2018.

Rank	Country	Percentage
1	United States	35,5%
2	China	20,7%
3	Brazil	9,1%
4	EU-27	5,8%
5	Argentina	4,0%
6	Mexico	2,5%
7	Ukraine	2,4%
8	India	2,4%
9	Canada	1,3%

10	Russia	1,3%
	Top EMEs production	42,4%

Note: Percentage of the total million bushels of corn planted worldwide, top ten producers rank by country during 2017-2018. Table made by the author of this report with data from the USDA, FAS Grain: World Markets and Trade, Feb. 2019.

Table 2.
Top 10 rice worldwide production by countries 2017.

RANK	COUNTRY	PERCENTAGE
1	China	28,3%
2	India	21,4%
3	Indonisia	10,4%
4	Bangladesh	7,1%
5	Vietnam	5,9%
6	Myanmar	3,5%
7	Thailandia	3,4%
8	Philippines	2,4%
9	Brazil	1,4%
10	Pakistan	1,4%
	Top EMEs production	81,7%

Note: Percentage of the total rice worldwide production, top ten producers rank by country during 2017-2018 (Million tonnes). Table made by the author of this report with data from the Food Organization Administration, *Rice Market Monitor*, 2017. Retrieved from http://www.fao.org/fileadmin/templates/est/COMM_MARKETS_MONITORING/Rice/Images/RMM/RMM_APR17_H.pdf

Table 3.
Top 10 wheat worldwide production by countries 2018.

RANK	COUNTRY	PERCENTAGE
1	EU-27	18,8%
2	China	17,5%
3	India	13,3%
4	Russian Federation	9,3%
5	United States	7,0%
6	Canada	4,5%
7	Pakistan	3,6%
8	Ukraine	3,5%
9	Australia	3,0%
10	Argentina	2,7%
	Top EMEs production	78,8%

Note: Percentage of the total wheat production worldwide, top ten producers rank by country during 2017-2018. Table made by the author of this report with data from the Foreign Agricultural Service/USDA. Retrieved from https://apps.fas.usda.gov/psdonline/circulars/grain-wheat.pdf

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