https://doi.org/10.17221/401/2021-AGRICECON

Impact of economic globalisation on agriculture in developing countries: A review

Agus Dwi Nugroho[1,2], Zoltan Lakner[3]*

[1]*Doctoral School of Economic and Regional Sciences, Hungarian University of Agriculture and Life Sciences, Godollo, Hungary*
[2]*Department of Agricultural Socio-Economics, Faculty of Agriculture, Gadjah Mada University, Yogyakarta, Indonesia*
[3]*Institute of Agricultural and Food Economics, Hungarian University of Agriculture and Life Sciences, Godollo, Hungary*

**Corresponding author: agus.dwi.n@mail.ugm.ac.id*

Citation: Nugroho A.D., Lakner Z. (2022): Impact of economic globalisation on agriculture in developing countries: A review. Agric. Econ. – Czech, 68: 180–188.

Abstract: Economic globalisation (EG) in developing countries has continued to increase over the last 40 years. EG has both beneficial and harmful impacts on all sectors, including agriculture. This paper aims to determine the impact of EG on agriculture in developing countries. This aim was met by conducting a systematic review (SR) of 64 papers from Scopus and Web of Science (WoS). EG has influenced various elements of agriculture in developing countries, including *i*) product, supply chain, food security, *ii*) trade, *iii*) economic, social, political element and environment and *iv*) technology and research and development (R&D). We propose several policies in this paper to maximise EG's positive impact while minimising its negative impact.

Keywords: food security; policy; supply chain; trade

Economic globalisation (EG) can be defined as a process in which governments rapidly liberalise international trade, investment, finance and their long-distance movements, as well as the information and perceptions that accompany market exchanges (Torres 2001; Dreher 2006). Dreher (2006) constructed an EG assessment tool based on an index of actual flows [trade, foreign direct investment (FDI), portfolio investment, income payments to foreign nationals and capital employed] and an index of trade and capital restrictions (hidden import barriers, mean tariff rates, taxes on international trade and capital controls). Hence, we can now assess the progress of EG in many areas, both developing and developed countries.

Over the last 40 years, EG in developing countries has continued to increase with varying percentages. EG in Sub-Saharan Africa and the Middle East and North Africa both reach a 50% rise, in Latin America and Caribbean 57% and the highest in South Asia reaches 67% from 1970–2018. This is higher than in developed countries, such as North America, where the rate is barely 40% (KOF Swiss Economic Institute 2021). Even developing countries that were once socialist in characters, such as China and Vietnam, ap-

https://doi.org/10.17221/401/2021-AGRICECON

pear to have begun to open up to EG (Arencibia 2011). China is currently one of the most important players in global agricultural trade, so any shock in this country would influence the global economy.

Developing countries have several programs in place to support the implementation of EG. Many countries carry out trade cooperation bilaterally, regionally and multilaterally (Dollar et al. 2006). Other countries have started an economic reform program to liberalise trade policies, remove trade barriers and connect their economies with global markets (Svatoš 2007; Awad and Youssof 2016). Establishing export processing zones, export subsidies, depreciating their currencies and boosting import substitution industrialisation are all part of these programs (Sanchez-Ancochea 2006; Pozo et al. 2011; Paus 2012). Meanwhile, product and market diversification policies are also implemented by developing countries to exist during EG (Goss and Burch 2001; Pinilla and Rayes 2019).

As a result of these various activities is rising in trade volumes, FDI inflow, economic growth, infrastructure development, technology, foreign tourists, international events; and reducing inflation, income disparity, poverty, malnutrition, unemployment, illegal economic in developing countries (Arencibia 2011; Ching et al. 2011; Tongzon 2012; Awad and Youssof 2016; Nguyen et al. 2018; Fan et al. 2019; Hoang 2020; Munir and Bukhari 2020). On the other hand, much research implies that EG harms developing countries. EG makes developing countries vulnerable to even slight external shocks or crises (Nguyen et al. 2018; Pinilla and Rayes 2019). EG is also to blame for rising worker exploitation, income and resource distribution inequality, large-scale urbanisation and many other issues (Pinder 2009; Rostam et al. 2010; Fatihudin 2019).

Nowadays, the effects of EG appear to have spread to many sectors in developing countries, including agriculture. The agricultural sector is critical for increasing food availability, food and nutrition security, employment, foreign exchange earnings, GDP, capital accumulation and secondary industry (Johnston and Mellor 1961; Pawlak and Kołodziejczak 2020). Hence, disruption in the agricultural sector can threaten the situation in a country. Agriculture disruption can reduce wages and work hours of rural workers, increase social conflict and other aspects of life (Dube and Vargas 2013). So, EG may be one of the factors causing agricultural disruption in developing countries. This is more interesting because developing countries advocate for agricultural market liberalisation and a reduction in protectionism, while developed countries defend their markets against superior foreign rivals (von Braun 2002).

Based on this, we decided to conduct a literature review to determine the effect of EG on agriculture in developing countries. After that, we can make a thorough policy implication based on the numerous effects. The goal of the policy is to maximise the beneficial effects of EG while minimising its harmful effects. This study is not only beneficial for developing countries but also for developed countries, especially European Union, because they rely heavily on agricultural products from developing countries.

MATERIAL AND METHODS

Study selection. The scope of this review is to examine how EG impacts agriculture in developing countries. Then, we expanded this impact to other aspects of agriculture, including other sectors, actors, and the surrounding environment. The systematic review (SR) method was used in this study, which involved searching for articles published up to November 2021 from various electronic bibliographic data sources, such as Scopus and Web of Science (WoS), using combinations of specific keywords and their synonyms. We used a broad set of keywords for EG included: 'economic globalization' OR 'trade globalization' OR 'financial globalization'; the keywords for agriculture included 'agriculture' OR 'agricultural', and the keywords for developing countries included 'developing countries'. The search resulted in 788 references, all of which were screened.

Screening process. A schematic representation of the SR methodology used in this study is shown in Figure 1. Using the required keywords and bibliographic databases, we found 360 articles after removing duplicates. Each article's titles and keywords were entered into bibliographic reference software and filtered for relevance based on title to eliminate those that did not meet the search parameters. The number of articles decreased to 74 as a result of this. Finally, a more thorough screening was carried out based on information provided within each abstract and only articles published in English were included. The final selection was made based on the inclusion criteria, and 64 articles were eligible. After screening, four main effects were defined relating to *i*) product, supply chain and food security, *ii*) trade, *iii*) economic, social, political element and environment and *iv*) technology and research and development (R&D). We will present very general information on these four topics, including the positive and negative effects of EG, but without doing a more in-depth investigation.

https://doi.org/10.17221/401/2021-AGRICECON

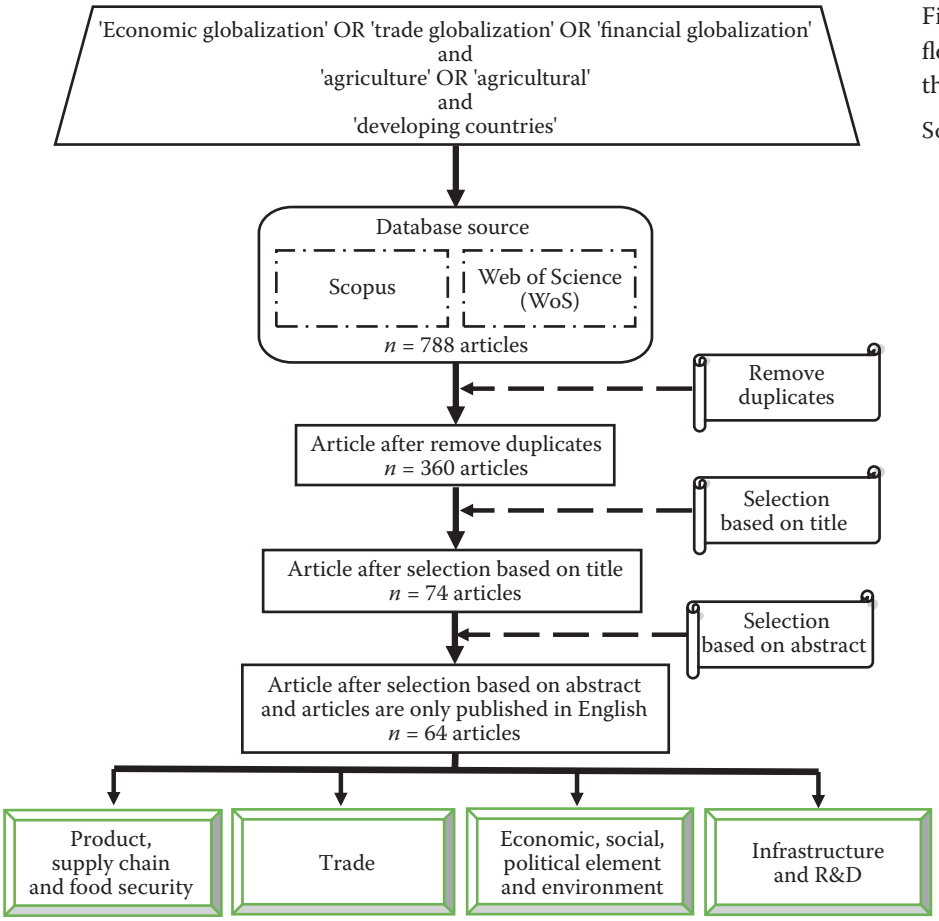

Figure 1. The diagrammatic flow of selected studies through the screening process

Source: Own collaboration

RESULTS AND DISCUSSION

Product, supply chain and food security. EG has been able to boost agricultural production (Ding et al. 2016; Kamran et al. 2021). This is due to several reasons, such as agricultural production factors being used more often (Jorgenson 2007; Jorgenson and Carolina 2008), the farmers' motivation to fulfil the rising domestic and international markets demand (Murray 2000; Erokhin 2016), government efforts and policies to increase food production (Salim 2015) and expansion of the international food organisation's role (Paarlberg 2002; Díaz-Bonilla 2010).

Increased food production in developing countries will increase food security (Mihalache-O'keef and Li 2011). However, Pirkle et al. (2015) expressed the opposite opinion that EG contributes to food insecurity in developing countries. This is because EG triggers market instability and food price fluctuations and will further limit certain people's economic access in developing countries (Yigletu 1997; Díaz-Bonilla 2010; Josling 2012). There are still about 842 million hungry people in the world today (Salim 2015). Furthermore, EG makes a country more open and reliant on food imports, reducing self-sufficiency capacity (Gulati 2000; von Braun 2002; Urrego-Mesa 2021). Hence, when there is a global food crisis, these countries will be affected (Yigletu 1997; Atici 2005; Winkel et al. 2016). For example, food prices rose throughout the first half of the 1970s, raising worries about social and political stability in food-importing developing countries (Díaz-Bonilla 2010). Another example is that the global financial crisis caused the economic recession and reduced consumer purchasing power in developed and developing countries. Consequently, the farmers had to contend with dynamic market conditions for their products (Swaffield and Primdahl 2010).

Apart from production, food quality has increased along with the implementation of EG. Today's growing consumer demand has encouraged producers to be more concerned about food quality. Various food certifications and regulations have emerged to achieve it (Barrett et al. 2002; Josling 2012; Qiang et al. 2020). For example, free of Sanitary and Phytos-

https://doi.org/10.17221/401/2021-AGRICECON

anitary Measures content and organic certification are required to ensure food quality and safety (Paarlberg 2002). Food certification also makes tracing the origins of food more accessible in the event of a problem (Opara and Mazaud 2001). On the other hand, this certification is considered a trade barrier since many agricultural products from developing countries are unable to meet it and are refused entry to developed countries (Diao et al. 2002). This is exacerbated by the fact that many certified farmers cannot sell their whole production at certified prices (Méndez et al. 2010).

Finally, EG can help improve food diversification and supply chain (Renard 1999). Agricultural production factors and food are becoming more readily available and traceable (Opara and Mazaud 2001). Many new food processing businesses have sprung up in developing countries and increased food diversification (Camargo and Wang 2015). Furthermore, many multinational agricultural corporations invest in developing countries and link upstream and downstream (vertical integration). They act not only as providers of agricultural production factors but also as producers, processors, and retailers (Biles et al. 2007). Likewise, in developed countries, EG can increase the availability of raw materials for industry and ensure the continuity of the food supply chain (Renard 1999). This makes food more accessible to customers (Nelson et al. 2016).

Trade. As previously stated, EG has allowed farmers in developing countries to sell their products to a larger market. Due to increased consumer demand, producers and business people compete to expand the volume of agricultural exports and imports (Murray 2000; Hopewell 2013; Serrano and Pinilla 2014; Prasad 2015; Schwarz et al. 2015; Todirica et al. 2018; Qasim et al. 2020; Ghazal et al. 2021; Guo et al. 2021). From 1986 to 2016, the total agricultural physical trade increased by 2.55 times with a gradual growth process (Qiang et al. 2020). This trade is supported by the specialisation of agricultural commodities in each country (Nelson et al. 2016; Urrego-Mesa 2021). This is similar to argument of Smith (1776) and Ricardo (1819) that free trade causes a country to specialise. As a result, each country's agricultural trade becomes more competitive (Losch 2004; Abbas and Waheed 2017). In addition, many producers can boost their income and improve their livelihood (Nigh 1997).

This point of view is still hotly debated. According to Meher (2009), EG failed to provide small farmers with a better and more sustainable livelihood. They can't compete with farmers or businesses that employ cutting-edge technologies. They lack the technical ability and financial resources to use sophisticated technologies (Nugroho 2021). EG also causes farmers to lose agricultural land because it was bought by a foreigner and reduces access to public agricultural services (Todirica et al. 2018). They eventually went bankrupt, lost their jobs, were frustrated and even suicide (Ghosh 2009; Cheshire and Woods 2013; Pirnea et al. 2013; Pirkle et al. 2015).

Another problem is that many countries raise trade barriers. Whereas countries with competitive production sectors and great export potential have pushed for more open markets, those that are less competitive and scared of negative effects for their farmers have been hesitant to push for more liberalisation. Likewise, many governments intervene with subsidised programs (Goss and Burch 2001; Diao et al. 2002; Bullion 2003). As a result, trade is no longer fair, resulting in significant losses for agricultural businesses and decreased exports (Atici 2005).

Economic, social, political element and environment. EG has a significant economic impact on agriculture. EG increase economic growth, the share of agriculture to GDP, employment in agriculture; develop the rural and urban area and reduce poverty (Anderson 2006; Reardon et al. 2007; Méndez et al. 2010; Ding et al. 2016; Kamran et al. 2021). However, economic growth is unequal, resulting in agricultural inequity. Only a few parties get a large share of profits from agricultural trade. In reality, this disparity also exists between developing and developed countries. Global agricultural trade is considered monopolised by developed countries and some multinational companies (MNCs), so many of the profits are concentrated in these countries (Reimer and Li 2010). EG also cannot increase productivity in terms of workforce development and instead has a negative impact on the use of child labour for agricultural activities. Instead of attending school, these children choose to work on the farm (Minten et al. 2007; Lin 2021). Many countries have also issued policies that refuse to limit domestic agricultural support and expose it to imports (Gulati 2000). This shows that EG also impacts social and political change (Murray 2000; Ghosh 2009; Méndez et al. 2010; Schipanski and Bennett 2012; Winkel et al. 2016).

For the environment, EG has both beneficial and harmful impacts. EG increases pesticide and fertiliser use while improving resource efficiency (Jorgenson 2007; Jorgenson and Carolina 2008; Méndez et al. 2010; Lambin and Meyfroidt 2011; Schwarz et al. 2015, 2019). The efficient use of land and other resources is achieved by applying technology, improved plant types and mechanisation. Meanwhile, EG contin-

https://doi.org/10.17221/401/2021-AGRICECON

ues to have a detrimental influence on resource sustainability (Atici 2005; Schipanski and Bennett 2012; Li et al. 2017). For example, groundwater use increases for irrigated commercial crops (Ringler 2005; Schwarz et al. 2019). In developing countries, environmental degradation and deforestation are caused by the use of chemicals and resource overexploitation. It appears that agricultural business players have become less concerned about environmental sustainability due to the commercialisation of agriculture (Hopewell 2013).

Infrastructure and R&D. EG has a beneficial influence on infrastructure and R&D procurement in developing countries, with no negative consequences. First, because of the massive amount of FDI inflows into developing countries, EG helps construct agricultural infrastructure (Mykhailov et al. 2021). Furthermore, the mechanisation of agricultural cultivation occurs rapidly, resulting in increased yield (Ozogul 2012). This also affects agro-industry upgrading, resulting in a rise in the added value of agricultural products (Fold 2000; Reardon and Barrett 2000; Neilson et al. 2020). Second, EG helps to accelerate the transfer of technology from developed or MNCs to developing countries. This is achieved through several international research collaborations, FDI inflows and trade cooperation (Tanaka et al. 1999; Malezieux 2000; Parayil 2003; Ozogul 2012; Camargo and Wang 2015; Song and Zhang 2016). Despite this, local agricultural businesses can suffer as a result of their inability to compete with MNCs in terms of capital, technology, and marketing. Moreover, it is likely that FDI is only concentrated in one country and causes losses to other countries because they are only used as a target market without getting FDI.

POLICY IMPLICATION

Developing countries must implement several policies to gain from agricultural trade. The country's government must focus on: First, developing human resource capacity building. Farmers in developing countries must continue to receive agricultural production, marketing and management education such as a step to face climate change. The counselling also must be accompanied by organic plant cultivation to meet current consumer demands. In addition, farmers also require counselling on organisational management, processing, marketing and negotiation. These are the weakest aspects of farmers, making their bargaining position low and obtaining unreasonable prices. We envision that farmers will deal directly with international partners, establish worldwide business ties, and adjust to globalisation's economic and political challenges in the future. Capacity-building programs are also required for agricultural extension workers, particularly in information and communication technologies. This is needed to accelerate and expand the reach of agricultural extension. Finally, capacity building is mandatory for governments in developing countries. In fact, corruption and inefficient bureaucracy can cause EG to fail from having a positive impact on agriculture. It is necessary to improve good governance so that policymaking in the domain of EG becomes more accurate. Second, enhance agricultural industry partnerships with farmers. The government should make contract farming mandatory for the agricultural industry. This will be beneficial to all parties involved. Farmers will get production factors and financial help from partners, as well as price and market certainty and technological transfer. Meanwhile, the company will have a continuous supply of high-quality raw materials and reduce production expenses. This is also a phase of vertical integration that adds value to agricultural commodities. Most importantly, the greater the food industry, the stronger the competition to supply physically and economically accessible food to customers. Third, intensify infrastructure, research and technology. Infrastructure is one of the considerations for FDI inflow, especially for MNCs. This is to ensure the production and marketing processes operate smoothly. Meanwhile, technology will increase the quantity and quality of food production, enhance total resource efficiency and reduce environmental damage. Modern production technology, mechanised equipment, and environmentally friendly production factors are some of the initiatives that may be implemented. Nowadays, increasing food production is critical, considering EG can trigger a country's food dependence on imports. This situation is not ideal because the crisis and fluctuations in world food prices often jeopardise importing countries' food security. Likewise, consumer requests for food certification are becoming more diversified due to increased awareness of health and environmental sustainability. This has an unavoidable influence on producers' concerns about using research and technology results to attain certification. Fourth, eliminate disincentive policies to increase agricultural trade. Developing and developed countries must gradually minimise agricultural trade intervention, particularly those that harm the domestic economy. Developing countries must impose 'friendly' regulations on FDI inflows into agriculture and eliminate sophisticated bureaucracy. However, this

https://doi.org/10.17221/401/2021-AGRICECON

activity must be carried out with caution to ensure that the investment results in agricultural products with high added value and are environmentally friendly. Fifth, strengthen bargaining position in negotiations with developed countries. Developing countries must have the courage to 'elevate their status' in front of developed countries when negotiating agricultural trade agreements. They should be considered partners and have an essential position as suppliers of industrial raw materials in developed countries. Developing countries must join international agricultural commodity organisations and regional integration to promote coordination in the face of changing conditions and policies that impact their exports. Other than that, developing countries must consider their agricultural capabilities to oppose any adverse arrangement and protection in developed countries.

CONCLUSION

We conclude that EG provides gains and losses for agricultural development in developing countries. EG may boost production, supply chain, food security, trade, and improve economic, social, political element and environmental conditions; and accelerate infrastructure development and R&D. On the other hand, several studies show the opposite, indicating that the implementation of EG is indeed debatable, especially on food quality, food safety and, food security in developing or less developed countries. In this regard, the loss of food self-sufficiency is critical. One point that must be emphasised is that no country globally will be able to avoid EG. Developing countries, particularly in the agricultural sector, must be prepared to deal with EG. To that end, we recommend several policies, including developing human resource capacity building, enhancing agricultural industry partnerships with farmers, intensifying research and technology, eliminating disincentive policies to increase agricultural trade and strengthening bargaining position in negotiations with developed countries.

REFERENCES

Abbas S., Waheed A. (2017): Trade competitiveness of Pakistan: The revealed comparative advantage approach. Competitiveness Review: An International Business Journal, 27: 462–475.

Anderson T. (2006): Globalization and agricultural trade: The market access and food security dilemmas of developing countries. In: Ghosh B.N. (ed.): Globalization and the Third World: A Study of Negative Consequences. London, United Kingdom, Palgrave Macmillan: 251–264.

Arencibia M.G. (2011): Socialism between globalization and the market: The experience of Europe, China and Vietnam. Review, 2: 105–116.

Atici C. (2005): Liberalization-goals trade-offs. Implications of agricultural trade liberalization for developing countries. Outlook on Agriculture, 34: 83–89.

Awad A., Youssof I. (2016): The impact of economic globalisation on unemployment: The Malaysian experience. Journal of International Trade and Economic Development, 25: 938–958.

Barrett H.R., Browne A.W., Harris P.J.C., Cadoret K. (2002): Organic certification and the UK market: Organic imports from developing countries. Food Policy, 27: 301–318.

Biles J.J., Brehm K., Enrico A., Kiendl C., Morgan E., Teachout A., Vasquez K. (2007): Globalization of food retailing and transformation of supply networks: Consequences for small-scale agricultural producers in Southeastern Mexico. Journal of Latin American Geography, 6: 55–75.

Bullion A. (2003): Globalization, South Asian agriculture and the WTO. South Asia Economic Journal, 4: 1–17.

Camargo E., Wang M.Y. (2015): A pilot study on the internationalization of Taiwanese agri-biotech SMEs: A technology-organization-environment (TOE) perspective. In: Portland International Conference on Management of Engineering and Technology, Portland, US, Sept 2–6, 2015: 1207–1217.

Cheshire L., Woods M. (2013): Globally engaged farmers as transnational actors: Navigating the landscape of agri-food globalization. Geoforum, 44: 232–242.

Ching H.S., Hsiao C., Wan S.K., Wang T. (2011): Economic benefits of globalization: The impact of entry to the WTO on China's growth. Pacific Economic Review, 16: 285–301.

Diao X., Roe T., Somwaru A., American S., Economics A., Aug N., Diao X., Roe T., Somwaru A. (2002): Developing country interests in agricultural reforms under the world trade organization. American Journal of Agricultural Economics, 84: 782–790.

Díaz-Bonilla E. (2010): Globalisation of agriculture and food crises: Then and now. In: Karapinar B., Haberli C. (eds.): Food Crises and the WTO: World Trade Forum. Geneva, Switzerland, World Trade Organization (WTO): 1–6.

Ding X., Qian Y., Tong T. (2016): Globalization, employment and agriculture: A review of the eleventh forum of the world association for political economy. World Review of Political Economy, 7: 541–555.

Dollar D., Hallward-Driemeier M., Mengistae T. (2006): Investment climate and international integration. World Development, 34: 1498–1516.

https://doi.org/10.17221/401/2021-AGRICECON

Dreher A. (2006): Does globalization affect growth? Evidence from a new index of globalization. Applied Economics, 38: 1091–1110.

Dube O., Vargas J.F. (2013): Commodity price shocks and civil conflict: Evidence from Colombia. Review of Economic Studies, 80: 1384–1421.

Erokhin V. (2016): Structural changes in international trade in food: Competitive growth models for economies in transition. In: Proceedings of the 3rd International Conference: Economic Scientific Research – Theoretical, Empirical, and Practical Approaches, Bucharest, Romania, December 3–4, 2015: 531–546.

Fan P., Ouyang Z., Nguyen D.D., Nguyen T.T.H., Park H., Chen J. (2019): Urbanization, economic development, environmental and social changes in transitional economies: Vietnam after Doimoi. Landscape and Urban Planning, 187: 145–155.

Fatihudin D. (2019): Globalization, strengthening of Indonesian local market character as consequences and reality of open economic system. Humanities and Social Sciences Reviews, 7: 11–16.

Fold N. (2000): Globalisation, state regulation and industrial upgrading of the oil seed industries in Malaysia and Brazil. Singapore Journal of Tropical Geography, 21: 263–278.

Ghazal K.N., Qasim R.S., Sabah O.H. (2021): Impact of globalization on agricultural foreign trade of selected developing countries (1995–2017). Iraqi Journal of Agricultural Sciences, 52: 1254–1266.

Ghosh B.N. (2009): Globalization and food policy dilemmas in developing countries: Contextualizing the Indian scenario. Journal of Third World Studies, 26: 107–120.

Goss J., Burch D. (2001): From agricultural modernisation to agri-food globalisation: The waning of national development in Thailand. Third World Quarterly, 22: 969–986.

Gulati A. (2000): Globalization, WTO and food security: Emerging issues and options. Quarterly Journal of International Agriculture, 39: 343–357.

Guo R., Qiu X., He Y. (2021): Research on agricultural cooperation potential between China and CEE countries based on resource complementarity. Mathematics, 9: 1–23.

Hoang H. (2020): The underground economy in transition countries from the perspective of globalization: The case of Vietnam. Revista Amazonia Investiga, 9: 234–242.

Hopewell K. (2013): New protagonists in global economic governance: Brazilian agribusiness at the WTO. New Political Economy, 18: 603–623.

Johnston B.F., Mellor J.W. (1961): The role of agriculture in economic development. American Economic Review, 51: 566–593.

Jorgenson A.K. (2007): Foreign direct investment and pesticide use intensity in less-developed countries: A quantitative investigation. Society and Natural Resources, 20: 73–83.

Jorgenson A.K., Carolina N. (2008): Foreign investment dependence and agriculture production: Pesticide and fertilizer use in less-developed countries, 1990–2000. Social Forces, 87: 529–560.

Josling T. (2012): New Trade Issues in Food, Agriculture, and Natural Resources. Oxford, United Kingdom, Oxford University Press. Avalaible at https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199586103.001.0001/oxfordhb-9780199586103-e-30 (accessed Nov 17, 2021).

Kamran A., Syed N.A., Rizvi S.M.A., Ameen B., Ali S.N. (2021): Impact of China-Pakistan economic corridor (CPEC) on agricultural sector of Pakistan. In: Xu J., Duca G., Ahmed S., García Márquez F., Hajiyev A. (eds.): Proceedings of the 14th International Conference on Management Science and Engineering Management (ICMSEM 2020). Advances in Intelligent Systems and Computing. Cham, Switzerland, Springer: 538–549.

KOF Swiss Economic Institute (2021): KOF Globalisation Index. KOF Swiss Economic Institute. Available at https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalisation-index.html (accesed Nov 17, 2021).

Lambin E.F., Meyfroidt P. (2011): Global land use change, economic globalization, and the looming land scarcity. Proceedings of the National Academy of Sciences of the United States of America, 108: 3465–3472.

Li L., Liu J., Cheng B., Chhatre A., Dong J., Liang W. (2017): Effects of economic globalization and trade on forest transitions: Evidence from 76 developing countries. Forestry Chronicle, 93: 171–179.

Lin F. (2021): Agriculture exports, child labor and youth education: Evidence from 68 developing countries. Review of International Economics, 30: 490–513.

Losch B. (2004): Debating the multifunctionality of agriculture: From trade negotiations to development policies by the South. Journal of Agrarian Change, 4: 336–360.

Malezieux E. (2000): Global network for pineapple research. Acta Horticulturae, 529: 35–47.

Meher R. (2009): Globalization, displacement and the livelihood issues of tribal and agriculture dependent poor people: The case of mineral-based industries in India. Journal of Developing Societies, 25: 457–480.

Méndez V.E., Bacon C.M., Olson M., Petchers S., Herrador D., Carranza C., Trujillo L., Guadarrama-Zugasti C., Cordón A., Mendoza A. (2010): Effects of fair trade and organic certifications on small-scale coffee farmer households in Central America and Mexico. Renewable Agriculture and Food Systems, 25: 236–251.

Mihalache-O'keef A., Li Q. (2011): Modernization *vs.* dependency revisited: Effects of foreign direct investment on food security in less developed countries. International Studies Quarterly, 55: 71–93.

https://doi.org/10.17221/401/2021-AGRICECON

Minten B., Randrianarison L., Swinnen J. (2007): Spillovers from high-value agriculture for exports on land use in developing countries: Evidence from Madagascar. Agricultural Economics, 37: 265–275.

Munir K., Bukhari M. (2020): Impact of globalization on income inequality in Asian emerging economies. International Journal of Sociology and Social Policy, 40: 44–57.

Murray W.E. (2000): Neoliberal globalisation, 'exotic' agro--exports, and local change in the Pacific Islands: A study of the Fijian kava sector. Singapore Journal of Tropical Geography, 21: 355–373.

Mykhailov A.M., Mykhailova L., Kharchenko T., Mohylna L., Shestakova A. (2021): Investment instruments for managing innovative transformations of the agricultural sector to ensure sustainable development in the context of globalization. Estudios de Economia Aplicada, 39: 1–14.

Neilson J., Dwiartama A., Fold N., Permadi D. (2020): Resource-based industrial policy in an era of global production networks: Strategic coupling in the Indonesian cocoa sector. World Development, 135: 105045.

Nelson E.J., Helmus M.R., Cavender-Bares J., Polasky S., Lasky J.R., Zanne A.E., Pearse W.D., Kraft N.J.B., Miteva D.A., Fagan W.F. (2016): Commercial plant production and consumption still follow the latitudinal gradient in species diversity despite economic globalization. PLoS ONE, 11: 1–23.

Nguyen D.P., Ho V.T., Vo X.V. (2018): Challenges for Vietnam in the globalization era. Asian Journal of Law and Economics, 9: 1–3.

Nigh R. (1997): Organic agriculture and globalization: A Maya associative corporation in Chiapas, Mexico. Human Organization, 56: 427–436.

Nugroho A.D. (2021): Agricultural market information in developing countries: A literature review. Agricultural Economics – Czech, 67: 468–477.

Opara L.U., Mazaud F. (2001): Food traceability from field to plate. Outlook on Agriculture, 30: 239–247.

Ozogul G. (2012): Effects of changing concepts and conditions of agricultural production to agricultural machinery manufacturing sector in globalizing world. Journal of Food, Agriculture and Environment, 10: 456–462.

Paarlberg R.L. (2002): Governance and Food Security in an Age of Globalization. Washington, D.C., US, International Food Policy Research Institute (IFPRI). Available at https://www.ifpri.org/publication/governance-and-food-security-age-globalization (accesed Nov 20, 2021).

Parayil G. (2003): Mapping technological trajectories of the green revolution and the gene revolution from modernization to globalization. Research Policy, 32: 971–990.

Paus E. (2012): Confronting the middle income trap: Insights from small latecomers. Studies in Comparative International Development, 47: 115–138.

Pawlak K., Kołodziejczak M. (2020): The role of agriculture in ensuring food security in developing countries: Considerations in the context of the problem of sustainable food production. Sustainability, 12: 5488.

Pinder S.O. (2009): The Dominican Republic and Central America free trade agreement with the USA: Some concerns. Development in Practice, 19: 227–232.

Pinilla V., Rayes A. (2019): How Argentina became a super-exporter of agricultural and food products during the first globalisation (1880–1929). Cliometrica, 13: 443–469.

Pirkle C.M., Poliquin H., Sia D., Kouakou K.J., Sagna T. (2015): Re-envisioning global agricultural trade: Time for a paradigm shift to ensure food security and population health in low-income countries. Global Health Promotion, 22: 60–63.

Pirnea I.C., Lanfranchi M., Giannetto C. (2013): Agricultural market crisis and globalization – A tool for small farms. Revista Română de Statistică, 61: 35–45.

Pozo S., Sanchez-Fung J.R., Santos-Paulino A.U. (2011): A note on modelling economic growth determinants in the Dominican Republic. Macroeconomics and Finance in Emerging Market Economies, 4: 35–41.

Prasad R. (2015): The impact of globalization on India's export and import of agricultural commodities. In: Proceeding of the 10th International Scientific Conference on Economic and Social Development, Miami, Florida, US, Sept 25, 2015: 154–159.

Qasim R.S., Shaba S.F., Abdullah A.M. (2020): The role of direct foreign investment in the external agricultural trade in some Arab countries for the period (1995–2017). Plant Archives, 20: 164–171.

Qiang W., Niu S., Wang X., Zhang C., Liu A., Cheng S. (2020): Evolution of the global agricultural trade network and policy implications for China. Sustainability, 12: 192.

Reardon T., Barrett C.B. (2000): Agroindustrialization, globalization, and international development: An overview of issues, patterns, and determinants. Agricultural Economics, 23: 195–205.

Reardon T., Stamoulis K., Pingali P. (2007): Rural nonfarm employment in developing countries in an era of globalization. Agricultural Economics, 37: 173–183.

Reimer J.J., Li M. (2010): Trade costs and the gains from trade in crop agriculture. American Journal of Agricultural Economics, 92: 1024–1039.

Renard M.C. (1999): The interstices of globalization: The example of fair coffee. Sociologia Ruralis, 39: 484–500.

Ricardo D. (1819): The Principles of Political Economy and Taxation. London, United Kingdom, John Murray: 85–103.

Ringler C. (2005): Globalization – What's in it for the poor in terms of water and food security? In: The 2005 World

https://doi.org/10.17221/401/2021-AGRICECON

Water and Environmental Resources Congress, Anchorage, Alaska, US, May 15–19, 2005: 1–10.

Rostam K., Jali M., Toriman M. (2010): Impacts of globalization on economic change and metropolitan growth in Malaysia: Some regional implications. The Social Sciences, 5: 293–301.

Salim Z. (2015): Globalisation and agriculture: Optimising trade policies for small farmers. In: Otsubo S. (ed.): Globalization and Development: Leading Issues in Development with Globalization. Tokyo, Japan, Taylor & Francis: 412.

Sanchez-Ancochea D. (2006): Development trajectories and new comparative advantages: Costa Rica and the Dominican Republic under globalization. World Development, 34: 996–1015.

Schipanski M.E., Bennett E.M. (2012): The influence of agricultural trade and livestock production on the global phosphorus cycle. Ecosystems, 15: 256–268.

Schwarz J., Mathijs E., Maertens M. (2015): Changing patterns of global agri-food trade and the economic efficiency of virtual water flows. Sustainability, 7: 5542–5563.

Schwarz J., Mathijs E., Maertens M. (2019): A dynamic view on agricultural trade patterns and virtual water flows in Peru. Science of the Total Environment, 683: 719–728.

Serrano R., Pinilla V. (2014): New directions of trade for the agri-food industry: A disaggregated approach for different income countries, 1963–2000. Latin American Economic Review, 23: 10.

Smith A. (1776): The Wealth Nation. London, United Kingdom, W. Strahan and T. Cadell: 329–346.

Song H.Y., Zhang W.S. (2016): An analysis on trade relations and structure between China and ASEAN. In: Proceedings of the 3rd International Symposium – Management, Innovation & Development, Beijing, China, Dec 10–11, 2016: 1262–1270.

Svatoš M. (2007): Specific aspects of globalization. Agricultural Economics, 53: 65–68.

Swaffield S., Primdahl J. (2010): Globalisation and local agricultural landscapes: Patterns of change, policy dilemmas and research questions. In: Primdahl J., Swaffield S. (eds.): Globalisation and Agricultural Landscapes: Change Patterns and Policy Trends in Developed Countries. Cambridge, United Kingdom, Cambridge University Press: 245–270.

Tanaka K., Juska A., Busch L. (1999): Globalization of agricultural production and research: The case of the rapeseed subsector. Sociologia Ruralis, 39: 54–77.

Todirica I.C., Chiripuci B.C., Toderasc S.A. (2018): Globalisation and food safety implications in developing countries. In: 18th International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management (SGEM), Sofia, Bulgaria, Jun 30–July 9, 2018: 415–422.

Tongzon J. (2012): The challenge of globalization for the logistics industry: Evidence from Indonesia. Transportation Journal, 51: 5–32.

Torres R. (2001): Towards a Socially Sustainable World Economy: An Analysis of the Social Pillars of Globalization. Geneva, Switzerland, International Labour Office: 101.

Urrego-Mesa A. (2021): Food security, trade specialization, and violence in Colombia (1916–2016). Investigaciones de Historia Económica, 17: 1–15.

von Braun J. (2002): Is globalization taking a pause? Implications for international agriculture and food security policy. Quarterly Journal of International Agriculture, 41: 187–190.

Winkel T., Bommel P., Chevarría-Lazo M., Cortes G., Del Castillo C., Gasselin P., Léger F., Nina-Laura J.P., Rambal S., Tichit M., Tourrand J.F., Vacher J.J., Vassas-Toral A., Vieira-Pak M., Joffre R. (2016): Panarchy of an indigenous agroecosystem in the globalized market: The quinoa production in the Bolivian Altiplano. Global Environmental Change, 39: 195–204.

Yigletu A. (1997): Global agricultural trading system in the post GATT era: Implications for developing countries. Scandinavian Journal of Development Alternatives, 16: 104–119.

Received: November 26, 2021
Accepted: March 28, 2022
Published online: May 5, 2022