Agricultural exchanges: a matter of sovereignty for emerging and developing economies

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Confidential

Key points

The global trade in agricultural commodities has historically been dominated by Western stock exchanges. These financial centers, most of which are denominated in dollars, centralize the setting of world prices for products largely grown in developing countries. In addition to this geographical concentration, there is also a concentration of players: the four major Western trading firms control up to 90% of the world grain trade. Faced with this imbalance, more and more emerging and developing countries are attempting to develop new agricultural exchanges (e.g. India, Brazil, China, Ethiopia, Nigeria), driven by strategies of commercial and food sovereignty. However, the success of such initiatives depends on several factors, such as the level of infrastructure, banking confidence and framework.

One of them is also the management of agricultural stocks, as "post-harvest distress sales" remain a major obstacle to improving farm incomes in many developing economies. In developed countries, the liberal reforms of the 1990s led to the gradual disengagement of governments in this area. In the United States, as in Europe, public stocks have been reduced, in favor of private stocks that are often opaque, lower in value and whose managers are sensitive to price signals. Conversely, countries such as China and India have maintained or strengthened their strategic storage policies, with institutions capable of acting as market stabilizers.

The warehouse receipt offers a concrete solution, enabling producers to store their crops in certified warehouses and obtain secured credit based on the receipt. This mechanism is a powerful lever for access to financing, risk management and market integration. However, its use remains marginal, due to a lack of infrastructure, regulation and appropriate incentives. Warehouse receipt finance (WRF) can form the basis of a genuine standardized market infrastructure if integrated into a formal ecosystem including certified warehouses, bank guarantees and public regulations.

In short, the success of an agricultural exchange and, more generally, the transition to transparent, resilient and fair agricultural markets depends largely on strengthening storage and regulatory infrastructures in producing countries.

1. A growing number of agricultural exchanges around the world

1.1. Agricultural commodity prices have historically been dominated by Western stock exchanges.

The current structure of global agricultural commodity markets is based on a high degree of geographic and financial concentration around Western stock exchanges.

Today, the Chicago Mercantile Exchange (CME) Group is the world's largest derivatives exchange, offering services on futures, options, over the counter and spot markets for all types of commodities. As a result of the merger between CBOT and CME, the Group is now the world leader in agricultural futures. It offers standardized quotations on the main cereals: corn, wheat, soybeans, oats and rice, as well as on livestock and dairy products[1]**. Founded in 1848, the Chicago Board of Trade (CBOT) in the United States is the world's leading commodities exchange**[2]. It specializes in agricultural products in response to high price volatility, accentuated by climate change and increased speculation in these goods. CBOT is particularly influential in **corn** and **soft wheat**, for which **it provides worldwide price references, all quoted in dollars**[3]**.**

The Intercontinental Exchange (ICE)[4]**, based in London and New York, also trades agricultural commodities such as cocoa, coffee, sugar and cotton** – as well as energy products (particularly Brent crude oil). **Its London platform is the world's main cocoa trading venue**, even though almost 60% of this commodity's production comes solely from Côte d'Ivoire and Ghana[5]. This paradox illustrates **the geographical dissociation between production and pricing**. The ICE also quotes contracts for Brazilian sugar, Vietnamese robusta and Uzbek cotton, centralizing the value of global agricultural chains far removed from stock exchanges[6].

Finally, **Euronext plays a structuring role in Europe**, notably via its Paris platform, with contracts for **milling wheat**, **barley**, **corn** and **rapeseed**. However, its scope remains more regional than global, with contracts denominated in euros.

In addition to being the first large-scale, standardized trading venues, Western – and particularly American – stock exchanges also established their dominance thanks to the dollarization of commodities, facilitated by financialization. This has contributed to the structuring of markets around dollar-denominated contracts on global exchanges. The economic importance of the European Union has also enabled contracts to be quoted in euros, notably for wheat, one of the continent's main crops. **However, the dollar remains the dominant currency. In 2014, 90% of all commodities combined (agriculture, energy, metals) were quoted in dollars**[7], although the Chinese renminbi is trying to make its mark[8].

1.2. More and more stock exchanges worldwide

According to the Director General of the FAO, "*emerging economies will increasingly determine the evolution of world agricultural markets*" due to the erosion of developed countries' market share[9] . This trend is not lost on financial markets either. Indeed, in line with the emergence of trading competitors (see Appendix 1), several emerging countries have been setting up local agricultural exchanges since the early 2000s. This movement is part of a drive for economic sovereignty, the modernization of agricultural trade and

[1] Agricultural Commodities Products - CME Group, www.cmegroup.com, 10/06/2025
[2] Hache Emmanuel. 18/01/2017. "Quelle Géopolitique Des Bourses De Matières Premières? - IRIS." *IRIS*. Retrieved (https://www.iris-france.org/87538-quelle-geopolitique-des-bourses-de-matieres-premieres/).
[3] All about US futures exchanges - Earn2Trade Blog, *Earn2Trade Blog*, 08/09/2023
[4] Formerly International Petroleum Exchange until 2005
[5] The world cocoa market is experiencing a sharp rise in prices due to a shortage of supply | Food Security Portal, *L'Afrique au Sud du Sahara*, 02/03/2025
[6] All Futures, Options, OTC Products & Physicals | ICE, *www.ice.com*
[7] 5 - Why do commodities sell in dollars? | Les Echos, *Les Echos*, 22/07/2014
[8] China talks up digital yuan in push for multi-polar currency system | Reuters, *Reuters*, 18/06/2025
[9] Agriculture: the growing influence of emerging countries | EchosLes, 02/07/2024

the integration of small producers into structured markets. Although these initiatives are led by governments or public-private consortiums, their success varies from region to region and from model to model.

Several agricultural exchanges in emerging countries have succeeded in developing a trading space with global reach. The **National Commodity & Derivatives Exchange (NCDEX)** and the **Multi Commodity Exchange (MCX**) in India list many strategic products (rice, wheat, cotton, sugar). The **Bursa Malaysia Derivatives (BMD)** and, in Latin America, Brazil's **B3** and Argentina's **MATba-ROFEX** influence world prices for agricultural commodities (see section 1.3).

In 2024, BRICS also announced the launch of a futures exchange for cereals and, potentially, oilseeds and pulses[10]. According to the Russian President, this exchange is intended to contribute to *"the formation of fair and predictable price indicators"* and to *"protect national markets from negative external interference, speculation and attempts to create artificial food shortages*". Given that the BRICS together account for a significant share of world grain trade, these countries are seeking to break away from dollar dependence via this future financial institution. **However, it will be some time** before the first contracts can be formalized and the confidence of global investors won. Particularly as other BRICS members already have their own exchanges, **the concrete realization of this project raises questions**.

On the African continent, **Ethiopia** succeeded in creating the ***Ethiopian Commodity Exchange*** (ECX) in 2008. It operates based on traceability, product standardization and a network of approved warehouses. Also in **Nigeria**, the ***Africa Exchange*** (AFEX) has established a regional presence, with operations in Kenya, Uganda, Côte d'Ivoire and Ghana. According to their figures, the equivalent of **$4.3 billion** worth of agricultural products is traded daily[11], in local currency.

Other exchanges have been launched in **Ghana** (GCX), **Kenya** (NCE), **Madagascar, Zambia** (ZAMACE) and, more recently, Côte d'Ivoire (BMPA CI) in May 2025[12]. However, their impact remains very limited due to low volumes and structural constraints (lack of certified warehouses, poor digitization, lack of banking confidence).

Finally, the models adopted vary according to local objectives and constraints. Ethiopia and Côte d'Ivoire have developed a hybrid model combining public regulation and private participation. **Brazil favors international standards** (listing in dollars), while **China seeks to counter the predominance of the dollar** by offering contracts denominated in renminbi. These differences reveal that the structuring of agricultural markets via exchanges is not uniform but reflects specific political and economic choices.

1.3. The development of these institutions is mainly driven by sovereignty strategies

There are several reasons for creating a local agricultural exchange, both economic and sovereigntist.

Indeed, the establishment of a platform for the purchase and resale of agricultural products has, in theory, positive effects on the development of a country's agricultural sector. A local agricultural marketplace supports small-scale producers by giving them access to national, regional and global markets, while facilitating the financing of their activities.

Indeed, such a platform **makes it possible to disaggregate an order that a single small local producer would never have been able to fulfill alone**, due to limited capacities. It is often accompanied by infrastructures that enable an isolated farmer to bring, for example, 10 bags of corn to a warehouse, to contribute to an order of 100,000 tons to be delivered over three months[13]**. A local agricultural exchange thus aims to create the conditions necessary for the development of local producers' activities by facilitating their access to markets, financing and the implementation of targeted policies**[14]**.**

[10] The Brics launch their grain exchange, *Terre-net*, 07/11/2024
[11] Forbes Afrique I Resources I AFEX continues to expand on the continent, *Forbes Afrique*, 26/05/2023
[12] Côte d'Ivoire opens an agricultural commodities exchange, a first in West Africa, *Le Monde.fr*, 03/06/2025
[13] The Role of Commodity Exchanges in Strengthening Agri-food Value Chains in Africa, *AFEX*, 23/04/2025
[14] The impact of Agricultural Commodity Exchange in economic development of rural in Iran, Shirzad, Damavandi, 2013

This dynamic also has indirect positive effects on the national economy: on a small scale, an increase in agricultural activity generates **a rise in employment** to support the growth in production; on a larger scale, surplus production can be exported, contributing to **an increase in foreign currency reserves**.

The development gap between South Africa's agricultural markets and sectors and those of the rest of the continent, as in West Africa, **demonstrates the role of these marketing platforms in economic development**. Indeed, in the mid-1980s, most regional exchanges in Africa were closed due to lack of usefulness and efficiency, so that production systems in most African countries remained fragmented, whereas in South Africa, the South African Futures Exchange has continued to drive market development for the past 35 years[15].

In addition, the creation of a local agricultural exchange can reinforce food security by limiting price fluctuations (see appendix 2). Local exchanges also help to curb speculation, putting an end to less transparent and less efficient over-the-counter trading and increasing transparency in price setting.

They can also help strengthen the sovereignty of states by ensuring that prices are set locally, rather than by international exchanges - particularly for export products, but also for those consumed locally. For example, in 2022 Ethiopia set floor and ceiling prices on the ECX for oilseeds and pulses[16].

However, while these agricultural exchanges help to protect local markets from price volatility and facilitate the setting of local prices, they do not always influence world prices. Indeed, in Africa, these exchanges often play a very secondary role in setting world prices for the commodities concerned. This is because, apart from South Africa's SAFEX and Ethiopia's ECX, trading volumes remain relatively low. In Africa, only the Mombasa Tea Exchange sets the reference price for tea produced in East Africa, which is then exported worldwide.

Only the most advanced exchanges in emerging countries, in terms of both development and volumes handled, can aspire to play such a role. **China has three of the five largest exchanges in terms of annual contracts**, located in Dalian, Zhengzhou and Shanghai. This weight is due to the fact that China is the world's leading importer of corn, palm oil, soybeans, etc., while also being a major producer.

Bursa Malaysia Derivatives (BMD) sets the world price for palm oil, of which Malaysia and Indonesia are the main producers. **The Indian NCDEX sets the price of Indian rice**, which has repercussions on the world market, since India is the world's leading exporter. Similarly, **the Indian MCX sets the price of cotton on the domestic market**, which indirectly influences the world market.

Finally, Brazil's B3 and Argentina's MATba-ROFEX participate in setting prices for Latin American wheat, corn and soybean prices. **However, their influence remains limited compared to the major Western exchanges, and does not yet reflect the real weight of this region in global production of these commodities**.

2. To build resilient standardized agricultural markets, inventory management is a key factor.

The ability of countries to store their production is a key factor in the success of agricultural exchanges. By smoothing consumption over time, storage acts **as a barrier against volatility**. Futhermore, it enables markets to be structured through instruments such as warehouse receipts, facilitating the smooth operation of local exchanges.

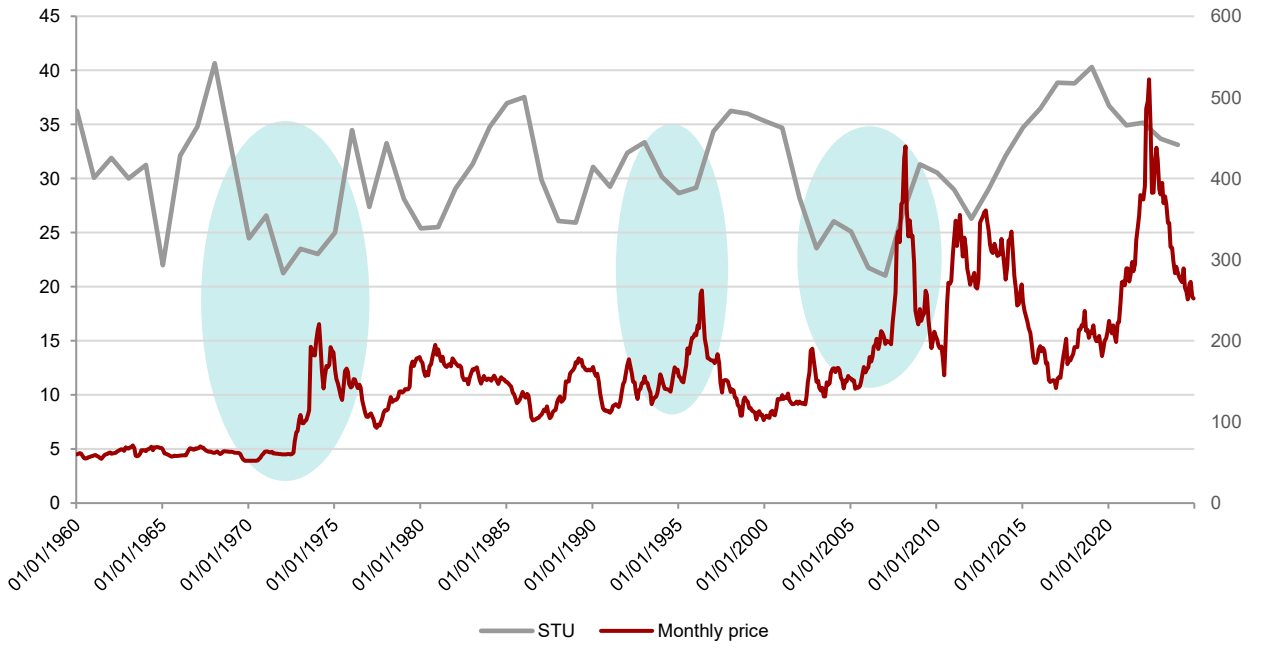
[15] The Role of Commodity Exchanges in Strengthening Agri-food Value Chains in Africa, *AFEX*, 23/04/2025
[16] Gov't Imposes Price Thresholds for ECX Oilseed Trade, *addisfortune.news*, 20/08/2022

2.1. Stocks as an indicator of resilience

In agricultural markets, inventory management is a key stability lever. It is not limited to food security: it directly structures price dynamics. The indicator most commonly used to assess this capacity is the **stock-to-use ratio** (STU)[17], which relates available stocks at the end of the harvest season to total annual consumption. **The lower this ratio, the tighter the market, as low reserves amplify the impact of climatic, logistical or geopolitical shocks**. For soft wheat, for example, the FAO recommends a ratio of at least **17-18%** to ensure global food security[18]. STU is therefore an indicator of vulnerability: it enables us to **anticipate price spikes** before they materialize.

Wright and Zeng (2013)[19] demonstrate that STU explains price fluctuations much better than production or consumption taken in isolation**. Their analysis establishes a strong inverse correlation between STU and real prices**: -0.50 for corn, -0.40 for wheat. This means that a poorly supplied market quickly becomes unstable. This correlation is even stronger when we consider a calorie-weighted aggregate STU for the major cereals (wheat, corn, rice), demonstrating **the substitution between products in a globalized market**. Thus, **during the crises of 1973, 1996 and 2007-2008, it was not price signals that made it possible to anticipate tensions, but the abnormally low levels of world stocks** that always preceded the crises (see graph below).

Figure – World soft wheat price (US HRS) (USD/t, right) and storage rate, stocks-you-use, at end of period (%, left)



Source: World Bank, USDA, GSA calculations

Inventory management varies considerably from country to country. **In developed countries, and particularly in the United States, storage architecture is based on certified warehouses, often privately owned, regulated transparency and markets integrated with futures exchanges**. For example, the *US Department of Agriculture* publishes the quarterly *Grain Stocks Report*[20], which contains information on stocks of a range

[17] Stock-to-Use Ratios of US Corn, Soybeans, and Wheat Since 1960 - farmdoc daily, *farmdoc daily*, 14/06/2021
[18] Grain stock/use ratios vary widely from country to country, *Terre-net*, 14/04/2022
[19] Stocks-to-use ratios and prices as indicators of vulnerability to spikes in global cereal markets, *Eugenio Bobenrieth, Brian Wright, Di Zeng*, 26/02/2013
[20] USDA - National Agricultural Statistics Service - Surveys - Grain Stocks, www.nass.usda.gov, 05/30/2025

of commodities by state. The USDA also publishes a monthly *WASDE* report[21] on **global** supply/demand estimates for all grains. In it, the USDA presents its forecasts for beginning and ending stocks, domestic consumption and trade[22] **. These figures and other USDA forecasts have a direct influence on Chicago quotations, and therefore on world prices for the commodities concerned** – although this information is only an aggregation of data. This visibility enables players to anticipate surpluses or tensions, while the authorities can intervene financially accordingly.

In Western countries, the trend has been to reduce public stocks since the 1990s[23]. In the United States, the **1996 *Farm Bill* reform** (Federal Agriculture Improvement and Reform Act) marked a major break. It abolished administered support prices and sharply reduced incentives for public storage, in response to the WTO Agreement on Agriculture signed in 1995[24]. This development transferred market regulation via stocks to private operators and further exposed the domestic market to external shocks. **In the European Union, the 1992 CAP reform** also disarmed public storage instruments by lowering minimum prices and thus the sustainability of the public system. Intervention mechanisms were gradually dismantled, replaced by decoupled aids, until public intervention in price setting or purchasing was abolished. However, these European and American programs had largely contributed to the development of agricultural models before they were abolished**, by enabling purchases at stable prices between 1960 and 1990, thus improving access to financing and boosting productivity**.

These reforms, involving the withdrawal of governments, have given way to private management dominated by global traders. As a result, it is the major trading houses – ADM, Bunge, Cargill, Louis Dreyfus – which partly structure the storage offer in developed countries[25] despite a revival of interest in public stocks following the 2007-2008 crisis. These groups have substantial logistics capacities, often vertically integrated with shipping, warehousing and trading. However, as there are few of them on the market, these companies have little incentive to cooperate with public institutions, and their figures remain relatively opaque. This observation prompted the European Commission in 2022 to request data on the storage of basic products (cereals, oilseeds, rice and certified seeds). **According to an estimate by the European Parliament, "ABCD" could store around 10% of the world's cereal, oilseed and protein crop reserves**[26]. Private storage is often based on price signals and market opportunities. **This means that these stocks can be withdrawn from the market in times of shortage if prices are not deemed sufficiently attractive**. **This behavior accentuates volatility – and can fuel speculation**.

On the other hand, some countries have maintained or developed strategic public stockholding policies, aimed at cushioning world price shocks, in compliance with WTO rules. China currently holds over 60% of the world's rice stocks, 50% of wheat stocks, 70% of corn stocks and 33% of soybeans, all of which are held for food security and domestic price stabilization purposes[27]. India has also strengthened its public network via the ***Food Corporation of India***, which in 2012 stored respectively **6% and 7% of the world's total use of wheat and rice**[28], giving the institution major geopolitical clout as when it banned and then taxed exports between 2007 and 2011[29]; although its influence does not prevent the public body from

[21] *"World Agricultural Supply and Demand Estimates*
[22] The grain market: an informational system dominated by the United States? | Ecole de Guerre Economique School of Economic ,*Warfare*, 11/11/2020
[23] Public food stock programmes and the WTO: What room for manoeuvre do countries in the Global South have?, Humundi, 2020
[24] Article 6 of the Agreement on Agriculture limits global support measures for agricultural products to 5% per product and per country, a rate extended to 10% for developing countries. This means that products from public stocks must be sold at market prices, or at least be subject to low subsidies to limit distortions. However, subsidies and initiatives aimed at food security are not included in the calculation of total aid, giving agricultural giants such as India and China some leeway. WTO | legal texts - Agreement on Agriculture, *www.wto.org*
[25] WION, Axel, Monica PESCE, Armando LUCIANO, Sofia Noelle GONZALEZ, EY, Barbara KUEPPER, PROFUNDO, et al. "L'influence Des Négociants En Matières Premières Sur Les Marchés Agricoles," 2024. https://www.europarl.europa.eu/RegData/etudes/STUD/2024/747276/IPOL_STU(2024)747276(SUM01)_FR.pdf.
[26] *Ibid*.
[27] Académie d'Agriculture de France - Global South and Global North on the world cereals market - Académie d'Agriculture de France - Agri Mutuel, *Agri Mutuel*, 15/04/2025
[28] Saini, S., Kozicka, M., 2014. "Evolution and Critique of Buffer Stocking Policy of India," Working Paper No. 283, Indian Council for Research on International Economic Relations (ICRIER).
[29] Public food stock programmes and the WTO: What room for manoeuvre for countries in the Global South?, Humundi, 2020

facing competition from private traders. In 2024, the Indian state urged these companies not to rush into the new harvest so that the *Food Corporation of India* would have priority in replenishing its stocks, which had been at their lowest since 2017[30].

These public stock issues can thus have an extremely significant impact on global food security and are still shaping negotiations on agricultural products at the WTO. **In many emerging and developing countries, particularly in Africa, weak storage capacities and opaque data are a challenge**. Post-harvest losses amounted to 10 to 20% of the volume of cereals produced in sub-Saharan Africa in 2011; for all foodstuffs, this would represent **37% of production, or USD 48 billion**[31]. In addition to the gross loss, post-harvest losses represent a significant loss of income: **the absence of standardized storage prevents producers from delaying sales to take advantage of more favorable prices, thus accentuating intra-annual volatility**.

2.2. Warehousing receipts as a financial lever for structuring agricultural markets

In poorly structured agricultural economies**, producers are often forced to sell their crops immediately after harvest, when (1) supply is greatest and (2) prices are lowest**. This constraint, known as "distress selling"[32], stems from a lack of access to credit and secure storage facilities.

The ***warehouse receipt*** is an intermediary solution to this double failure. It is a key technical and institutional lever in the formalization of national or regional agricultural markets. This document enables producers to store their goods in a certified warehouse, in exchange for a certificate – paper or electronic – attesting to the volume and quality of the product deposited. **This receipt has legal value and can be used as a bank guarantee to access credit, or as a negotiable security on a stock exchange**. By dissociating the production period from the moment of sale, it reduces the pressure to sell immediately, which in turn promotes better prices and reduces intra-annual volatility. **This enables some agricultural exchanges to offer warehouse receipt finance** (WRF) **services**. This mechanism can play a crucial role in the financing of agricultural activity, in a context where the activity is poorly structured and financialized, and where farmers do not necessarily have titles deed, the counterparty most frequently required by banks.

India's experience is often cited as a benchmark, thanks to its well-established regulatory institutions. The ***Warehousing Development and Regulatory Authority*** (WDRA)[33], set up in 2010, has established a robust legal basis for the e-receipt system. By December 2023, India had over **14,000 licensed warehouses** with a storage capacity of 86.4 million tons[34]. However, growth in warehouse receipt financing has remained low, rising from around 135 thousand tons in 2011-2012 to around 1.24 million tons in 2023-2024, or just **0.5% of the country's total storage capacity**[35], indicating a potential that remains largely untapped.

Yet the potential benefits are considerable. **According to the FAO, a well-designed receipt system can finance 80% or more of the stored value**[36], reducing dependence on informal credit and increasing producers' ability to arbitrate over time. Also, according to the FAO, these systems improve traceability and product quality (via inspection and standardization) and facilitate the emergence of forward contracts backed by certified physical volumes.

In Africa, the system has now been rolled out across the continent: Not only South Africa and Egypt, but also Burkina Faso, Benin, Cameroon, Ghana, Kenya, Madagascar, Malawi, Mozambique, Tanzania, Senegal, Uganda and Zambia.

[30] India calls on traders to replenish wheat stocks - Chronique des matières premières, *RFI*, 05/04/2024
[31] Les pertes post-récoltes, un mal africain dont on sait pourtant les remèdes, Agence Ecofin, *WATHI*, 02/10/2020
[32] Scaling-Up Warehousing Finance Can Empower Farmers in the Long Run - The Wire, *The Wire*, 09/06/2025
[33] Warehousing Development and Regulatory Authority | Official Website of Department of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution, Government of India, *dfpd.gov.in*, 13/05/2025
[34] CFSP, *cfsp.nic.in*
[35] Scaling-Up Warehousing Finance Can Empower Farmers in the Long Run - The Wire, *The Wire*, 09/06/2025
[36] Höllinger, Frank, Lamon Rutten, MCX India, and Krassimir Kiriakov. "The Use of Warehouse Receipt Finance in Agriculture in Transition Countries." *WORKING PAPER*, 2009. https://openknowledge.fao.org/server/api/core/bitstreams/56157b97-9593-4023-8a98-f6bf40d64e83/content

It is, however, very difficult to estimate the amount of financing granted via these mechanisms, or the volumes of agricultural products used in return: the few studies and press articles available seem to suggest that the system remains **very little used by African farmers**[37]**, that it mainly finances export crops** (coffee, sesame, cotton)[38]**, and that it ultimately benefits aggregators or traders** (who build up the stock and collateralize it) **rather than farmers**. The factors cited are the complexity of implementation and risk transfer; high transaction costs; and the lack of sufficient storage infrastructure[39].

In Tanzania[40], for example, **the commercialization of cashew nuts has been organized through a receipt system since 2007**. This was introduced following market liberalization, which had led to opacity and low prices for the sale of raw nuts. In addition to this system, **the government sets minimum prices and manages a cooperative purchasing monopsony** involving primary companies and regional cooperatives, preventing private export or processing operators from intervening directly with producers[41]. The cooperatives deposit the raw nuts in the warehouses in exchange for receipts, which are in turn exchanged for funds by the banks. **Ultimately, this system has cut out the middleman but benefits the cooperatives and warehouse managers to the detriment of the farmers**. Above all, it was not set up with a view to standardizing exchanges, but with a view to public control of the value chain, to increase transparency and limit the number of players involved in the marketing process. **Although this model has had the advantage of limiting access to the domestic market for international traders, it has nevertheless benefited agricultural aggregators more than farmers**.

But the case of Malawi illustrates the opportunities and limitations of a receipt system. As early as 2011, the Agricultural Commodity Exchange for Africa (ACE), Malawi's stock exchange, introduced receipt systems[42]. These platforms have suffered from low adoption outside the major cities, and a lack of awareness among small producers, which has weakened the system's credibility in the eyes of banks and farmers in a high-cost country. The IFPRI study confirms this stronger appeal for the largest market players, to the detriment of those whose access to financing remains the most limited (table).

Table – Storage receipts by type of depositor in ACE warehouses in Malawi between 2011 and 2018

Type of depositor	Total volume (tons)	Number of receipts	Corn	Cajan pea	Soybeans
Large dealer / processor	8048,3	194	135	20	28
Average trader	1435,1	128	83	20	22
Small merchant	1315	189	126	23	36
Associations or cooperatives	597,4	63	30	11	16
Farmers	588,8	136	90	10	35

Source: IFPRI

Indeed, smallholders are still reluctant to use these tools, either because they are unfamiliar with them, or because storage costs are deemed too high, or because they fear not being reimbursed in the event of price fluctuations. For their part, banks remain cautious, preferring cooperative or structured traders to minimize risk. In East Africa, regulatory bodies are still sometimes too weak to inspire full confidence in the

[37] World Bank Document, *documents1.worldbank.org*
[38] 2022-4930-AJBE-FIN-Aboagye-07.pdf, www.athensjournals.gr, 2022
[39] Farmers Miss Out on Credit as Majority Stuck to Traditional Storage Methods - Study, *The Kenyan Wall Street,* 08/27/2024
[40] AFRICAN DEVELOPMENT BANK GROUP. "Développement Et Financement Des Chaînes De Valeur Agricoles (FCVA) Pour L'amélioration De La Compétitivité Des Exportations." *AFRICAN DEVELOPMENT BANK GROUP*, 2013. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/D%C3%A9veloppement_et_financement__des_agricultural_value_chains_for_am%C3%A9improving_the_comp%C3%A9titivit%C3%A9__of_exports.pdf.
[41] Tanzania: Relaunch of the cashew industry in Tanzania - allAfrica.com, *allAfrica.fr*, 19/03/2001
[42] IFPRI. "Who Uses and Who Benefits From Warehouse Receipt Systems? An Examination of Contract Level Transactions on the Agricultural Commodity Exchange for Africa, 2011-2018." *STRATEGY SUPPORT PROGRAM | WORKING PAPER 35*, May 2020. https://massp.ifpri.info/files/2020/05/MaSSP-Working-Paper-35_Who-Uses-and-Who-Benefits-From-WRS_May-12-2020.pdf.

certificates issued. The FAO[43] stresses **that the lack of standardization of contracts, the absence of logistics insurance and the poor spatial coverage of certified warehouses are limiting the large-scale deployment of the system**.

Finally, storage receipts appear to be a potential condition for building credible local agricultural exchanges. By providing a traceable, verifiable and tradable title, they make it possible not only to mobilize capital, but also to back futures contracts with real stored assets. This link between storage, finance and transparency creates the foundations for a structured and accessible agricultural market. **This is why institutions such as the World Bank and the FAO actively support the introduction of receipt systems as the basis for agricultural development**.

2.3. From warehouse receipt to market infrastructure

The development of the WRF does not necessarily imply the opening of an agricultural exchange: many African countries have formalized warehouse receipt financing without setting up an exchange (Burkina Faso, Cameroon, Madagascar). Côte d'Ivoire, for example, legislated on the issue as early as 2015, creating **the Warehousing System Regulatory Authority** (ARRE CI) the following year, ten years before launching the Agricultural Commodities Exchange[44].

However, **the two concepts are highly complementary**; the establishment of the ARRE was presented as a prerequisite for the creation of the BMPA[45]. What's more, ARRE and its Kenyan counterpart, the *Warehouse Receipt System Council* (WRSC), are members of **the Association of African Agricultural Commodity Exchanges**, although they are not exchanges in the strict sense of the term[46]. In Zambia, the *Zambian Commodities Exchange* manages the warehouse receipt system; in Ethiopia, ECX has been offering this type of service since 2019.

This is all the more true as the success of a warehouse receipt system depends not only on the existence of warehouses, but also on their certification, regulation and integration into a structured trading ecosystem. **In this way, close integration between warehouse receipts and a local agricultural exchange can take market structuring to a new level**. The stakes are not just logistical, but also financial and institutional. An articulated system enables:

- **To guarantee quality, traceability and standardization of products** through official standards controlled in approved warehouses.
- **Create hedging instruments** (futures, options) backed by physical assets that are stored and certified, enabling producers, processors and traders to better manage their exposure to price fluctuations.
- **Stabilize prices through public mechanisms** such as the purchase of receipts at minimum prices, which can be activated in times of crisis, like a modern intervention stock.
- **Mobilize capital through the securitization of receivables backed by these receipts**, thus facilitating the financing of agricultural campaigns, notably through partnerships between cooperatives and local banks.

For such an ecosystem to function, several conditions must be met. Firstly**, certification and monitoring of warehouses are essential**: the African Development Bank[47] stresses that the credibility of the system

[43] FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. *Designing Warehouse Receipt Legislation Regulatory Options and Recent Trends*. *DIRECTIONS IN INVESTMENT*. FAO, 2015. https://openknowledge.fao.org/server/api/core/bitstreams/330a0975-fb04-439b-9d21-0d7db0e59801/content.
[44] ARRE. "PRESENTATION OF THE SRE." *ARRE*, n.d. https://arreci.ci/wp-content/uploads/2022/10/220601_Presentation-du-SRE.pdf.
[45] Slide 1, *arreci.ci*, 10/2022
[46] https://aacx.org/#ed-424529543
[47] AFRICAN DEVELOPMENT BANK GROUP. "Développement Et Financement Des Chaînes De Valeur Agricoles (FCVA) Pour L'amélioration De La Compétitivité Des Exportations." *AFRICAN DEVELOPMENT BANK GROUP*, 2013. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/D%C3%A9veloppement_et_financement__des_agricultural_value_chains_for_am%C3%A9improving_the_comp%C3%A9titivit%C3%A9__of_exports.pdf.

depends directly on the regularity of audits, compliance with standards and the presence of logistics insurance covering the risks of loss or damage. Secondly**, a clear legal framework must recognize the receipt as a negotiable instrument and enforceable title in the event of non-payment**. Finally, **public regulation** - along the lines of ARRE-CI or India's WDRA - **must ensure the supervision of all players**.

Public-private partnerships are crucial here. A WRF cannot succeed without close cooperation between regulators, logistics operators, commercial banks, traders and agricultural producers. Ultimately**, warehouse receipts are more innovative financial products enabling players to access bank credit and, at the same time, a tool for aggregating agricultural products, facilitating contractualization on large volumes**. That's why this model is particularly attractive for export companies and products.

Thus, the storage receipt can be seen as the cornerstone of a modern agricultural market, as long as it is integrated into a formalized value chain, backed by standardized contracts, and supported by a solid institutional framework.

Finally, beyond *Warehouse Receipt Finance***, it is the management of storage capacities that creates this anchorage in the commercial ecosystem and provides the link between the informal agricultural world and a standardized agricultural exchange**. **Price stability** through the public and relatively transparent management of stocks has contributed to the development of Western models and seems to be a *sine qua non* **for strengthening the resilience, liquidity and transparency of markets in emerging and developing countries**.

Appendices

Appendix 1: Structuring global trading competition in emerging countries

The world's stock exchanges are dedicated to the exchange and trading of materials. They manage inventories and, potentially, physical delivery when this takes place. **As a result, many players are involved in bringing these spaces to life**.

Three categories of players are predominantly involved in the process: **trading giants** (the "ABCDs": Archer-Daniels-Midland, Bunge, Cargill and Louis Dreyfus Company), **commodity index producers** (such as Goldman Sachs) and **investment funds**. The latter, mainly American, account for **20 to 40%** of positions in agricultural commodities[48] . But, according to Robe and Roberts (2019)[49], of the more than 3,500 traders involved in agricultural futures markets between 2015 and 2018, fewer than 200 concentrate a large majority of daily positions in agricultural contracts. **These 5% of investors exert a particularly important influence in the short term, taking positions of less than 4 months for two-thirds of them**.

The "ABCD" trading giants, also known as the "Big 4", cover 70 to 90% of the world cereals trade, with control over the entire value chain and in numerous sectors: from health and well-being to biofuels, animal feed and human nutrition[50]. The concentration of companies managing large storage capacities (see section 2.2) is therefore high.

Competition is emerging from these giants in emerging countries. According to a study by the European Parliament[51], several state-owned and parastatal companies are seeking to capture a share of the global agricultural commodities trade, with particularly strong growth following the 2007-2008 crisis.

[48] Une poignée de traders font la pluie et le beau temps sur les matières premières agricoles | Les Echos, *Les Echos*, 28/10/2021
[49] *"Who holds positions in agricultural futures markets?",* Michel A. Robe, John S. Roberts, 2019
[50] Grain markets still dominated by 4 main traders - Blog de veille du Centre d'études et de prospective, *Blog de veille du Centre d'études et de prospective*, 24/01/2025
[51] European Parliement. "The Role of Commodity Traders in Shaping Agricultural Markets." Report. *Policy Department for Structural and Cohesion Policies*. European Parliament, 2024.

COFCO International Limited (CIL), the subsidiary of China's state-owned COFCO Group, was founded in 2014 and rapidly expanded internationally with the acquisition of Noble Agri and Nidera between 2014 and 2017. CIL is now an integrated company, capable of operating across the entire value chain. In 2022, the company reported revenues of **53.3 billion USD**, starting with some **127 million tonnes of cereals, oilseeds, sugar, coffee and cotton**.

Similarly, Singapore-based **Olam International** has established itself as a trading giant for Brazilian rice, soy and corn, as well as wheat from Argentina and Germany. Another Singaporean company, **Wilmar International** (WIL), is also a competitor on the Asian continent, trading 92 million tonnes of agricultural products by 2022. We also find **Kernel** (Ukraine), the leading producer and exporter of sunflower oil and the leading exporter of Ukrainian grain, ahead of the Big 4 and CIL. Finally, more recently, players such as **Invictus Investment** - a Dubai-based group active in Sudan, Ethiopia and East Africa - are establishing themselves on African markets with strategies of logistical control and storage capacity. The outlook for growth is relatively positive: **sales of USD 2.5 billion, with a target of USD 7 billion by 2028**[52].

Although still smaller than the "ABCDs", these players are contributing to the geographical reconfiguration of flows and the refocusing of part of the margins on southern countries.

Appendix 2: Transmission of global price volatility to domestic markets in emerging and developing countries

However, the opening of local agricultural exchanges is not always enough to automatically transform market pricing dynamics. The transition from international to local prices takes place through complex channels, influenced by exchange rates, distribution structures and each country's capacity to absorb shocks. It is this transmission mechanism – or "**pass-through**" – that makes it possible to assess the real effectiveness of a local exchange or other measures designed to limit it.

Indeed, in most developing countries, variations in world prices are partially passed on to domestic markets, often with a time lag: on average, over the period 2000-2009, most food-importing countries completed their adjustment to world price fluctuations after around nine to ten months. However, price volatility contributes significantly to vulnerability and poverty. It hampers development by putting incomes at risk, which in turn hampers the adoption of the technologies needed for efficient agricultural production[53].

To protect themselves against these external influences on price variations, developing and emerging countries have often resorted to restrictions on food exports. However, while export bans can, in some cases, help stabilize domestic food prices and limit their volatility, **they are also accompanied by undesirable effects**. Such measures **tend to weaken incentives for producers to increase production** in response to higher international prices. Restrictions of this kind can therefore **curb investment in the agricultural sector**, thereby compromising food security. Moreover, in the short term, partner countries, traditionally buyers, may be directly affected. This was the case during the 2008 food price crisis: Kenya's National Cereals and Produce Board, responsible for grain supplies, found itself unable to purchase sufficient maize, largely due to export bans imposed by several neighboring states[54].

In rare cases, when export restrictions are imposed by one of a commodity's main exporters, they can even influence global price volatility. In India, for example, the imposition of export restrictions during the 2008 price surge reduced volatility on the domestic market, while accentuating volatility on the world

[52] How far will Invictus go, the ambitious Sudanese-Emirati company that is shaking up African trading?, JeuneAfrique.com, 11/06/2025
[53] Safeguarding Food Securityin Volatile Global Markets, *FAO*, 2011
[54] Safeguarding Food Securityin Volatile Global Markets, *FAO*, 2011

market. The weight of the Indian market in the international rice trade is such that price variations on one market have immediate repercussions on the other[55].

Moreover, the transmission of prices between the world market and the national market for a given commodity also depends on the behavior of the exchange rate of the local currency against the dollar, the main currency used in international agricultural trade.

Finally, it should be remembered that variations in food prices are also linked to energy and financial markets: the volatility of financial markets, combined with speculative activities, tends to amplify price peaks in the short term, while the volatility of oil prices accentuates that of agricultural products in the medium term[56].

[55] Safeguarding Food Securityin Volatile Global Markets, *FAO*, 2011
[56] The role of commodity traders in shaping agricultural markets, European Parliament, 2024