UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

GLOBAL QUALITY AND STANDARDS PROGRAMME

# STANDARDS COMPLIANCE ANALYTICS REPORT

## BORDER REJECTIONS IN MAJOR GLOBAL MARKETS
## MOLDOVA

## DISCLAIMER


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# INTRODUCTION

Technical regulations and standards are increasingly prevalent and continuously evolving in the international trade of food and nonfood (industrial) products. Moreover, there is evidence that many developing countries face challenges in complying with the safety and quality requirements that these regulations and standards lay down. Since 2008, UNIDO has regularly collected evidence about trade related challenges and their evolution over time, particularly in the area of compliance with (quality, certification, labeling, etc.) requirements set by international markets.

In their efforts to improve compliance, the challenge for national governments and donors is to allocate scarce financial and technical resources amongst a plethora of capacity building needs. There is, therefore, a need to identify where the most acute compliance challenges are faced—in a trade context this means identifying the products and markets with the highest rates of non-compliance—thus recording rejections. In this context, the Standards Compliance Analytics (SCA) tool can be used to facilitate the use of rejection data to identify the key compliance challenges faced by exporting countries and thereby enhance targeting of investments in building relevant compliance capacities (more details about the SCA tool can be found in the Annex).

Using the SCA tool, this report focuses on analyzing the trends and patterns of Moldovan agri-food import rejections in five major international markets, namely Australia, China, the European Union (EU), Japan and the United States (US). The objective of this report is to gain insights about the challenges faced by Moldova in complying with product quality and safety standards and regulations in agri-food trade towards both regional and global markets.

The report was developed under the Global Quality and Standards Programme (GQSP), funded by Switzerland through its State Secretariat for Economic Affairs (SECO).

The UNIDO Knowledge Hub offers abundant information, online trainings, and digital tools about Quality Infrastructure, including the SCA tool. Any feedback and comments on this report are welcomed and can be addressed to knowledgehub@unido.org.

# CONTEXT

# A. COUNTRY PROFILE


| | |
|---|---|
| **Country** | **Republic of Moldova** |
| **Continent** | **Eastern Europe** |
| **Population** | **2.45 million** (2023) |
| **GDP** | **USD 16.54 billion** (2023) |
| **GDP per capita** | **USD 6,729** (2023) |
| **Food Safety Index** | **80** (2020) |
| **Value added by Agriculture, Forestry and Fishing** | **7.6 %** of GDP (2023) |
| **Logistics Performance Index (overall)** | **2.5** (2023) |
| **Gross Food Production Value in constant** | **2,241** (2014 – 2016; thsd in $) |

According to the World Bank, Moldova is classified as an **upper-middle income**[1] country with a Human Development Index (HDI) value in 2022 of **0.763**. The HDI measures national progress in health, education, and living standards. This places Moldova in the **High** human development category, ranking at 86 out of 191 countries and territories in 2022. Over the past thirty years, Moldova has seen a 10.9 % increase in its HDI value (from 0.690 to 0.763). Between 1990 and 2022, the national life expectancy at birth increased by 0.6 years (68.6 years in 2022), the expected years of schooling by 4.6 years (14.9 years in 2022), and the mean years of schooling by 2.7 years (11.8 years in 2022)[2].

Moldova has been significantly impacted by the conflict in Ukraine due to its geographic proximity and its status as a small landlocked nation with close ties to both Ukraine and Russia. Russia's incursion into Ukraine has given rise to an energy and refugee crisis. These crises have placed substantial strains on household budgets, the economy, and public finances. Despite commendable efforts to alleviate these challenges through fiscal and monetary measures, the persistently high-risk environment and declining household incomes continue to hinder private consumption and investment confidence. Consequently, following the recession in 2022, the growth outlook for 2023 remains slow. Although the country has experienced sustained economic growth over the past two decades, the incidence of poverty remains pervasive, particularly in rural areas where access to services and viable economic opportunities is limited. The economy is projected to expand by 2.2% in 2024, driven by an upturn in real wages and a positive fiscal stimulus. Growth will be buoyed by private consumption and investments, supported by facilitative monetary policies. The growth trajectory is anticipated to be propelled by the service sector, specifically IT, transport, and public services, while the industrial sector may experience a lag due to subdued external demand. Despite higher input costs, a modest growth is foreseen in the agricultural sector. The implementation of economic reforms aligned with EU accession, along with fiscal measures and favorable interest rates, will provide vital impetus for medium-term growth[3].

The Logistics Performance Index (LPI) measures the efficiency of trade-related logistics activities in a country, including international shipment, logistics

[1] United Nations Development Programme. *Human Development Report 2023/2024 - Breaking the gridlock*. UNDP. https://hdr.undp.org/system/files/documents/global-report-document/hdr2023-24reporten.pdf

[2] United Nations Development Programme (2024, March 13). *Inequalities and multidimensional crisis could hinder human development in Moldova, according to UNDP report.* https://www.undp.org/moldova/press-releases/inequalities-and-multidimensional-crisis-could-hinder-human-development-moldova-according-undp-report

[3] World Bank. *The World Bank in Moldova Overview.* https://www.worldbank.org/en/country/moldova/overview

**TABLE 1:** INTERNATIONAL LPI IN 2023 - MOLDOVA

**DATA TABLE**

*(Toggle Rank and Score for Subindicators)*

| Country | Year | LPI Score | Customs | Infrastructure | International shipments | Logistics competence | Tracking & tracing | Timeliness |
|---|---|---|---|---|---|---|---|---|
| **Moldova** | 2023 | 2.5 | 1.9 | 1.9 | 2.7 | 2.8 | 2.8 | 3 |

quality, customs clearance, infrastructure, and tracking and tracing. Thus, a higher LPI score indicates better logistics performance and greater competitiveness in the global market. As a key component of a country's exports business, the LPI of Moldova is shown in **Table 1**[4]. The overall LPI score is **2.5** in 2023 and is ranked at number **97th** out of 139 countries in the study. Most countries ranked above Moldova are developed countries with higher income. Moldova's ranking has significantly increased gaining **19 places** in a mere five years, having held the 116th spot in 2018[5].

The Global Competitiveness Index (GCI) comprises up to 103 indicators derived from a combination of data sources from international organizations and the World Economic Forum's survey. It encompasses various factors, including institutions, infrastructure, ICT adoption, macroeconomic stability, health, skills, product market, labor market, financial system, market size, business dynamism, and innovation capability, among others. The GCI provides a score ranging between 1 to 100. In 2019, Moldova scored **56.7** and ranked **86th** (out of 141)[6], up two places from the previous year, which represents an increase in the GCI score. Regarding the twelve pillars or economic drivers, Moldova's labor market had the highest ranking of 56th with 62 points, while the lowest was its market size with a rank of 127th with 36 points. This category assesses each country in terms of its domestic credit to private sector, financing of SMEs, venture capital availability, and insurance premium[7]. Areas for improvement included its financial system, which is measured by the amount of SME financing, market capitalization, and the stability of the bank's regulatory capital ratio. Moldova demonstrated excellent performance in terms of business dynamism and product market.

The agriculture sector, which includes the forestry and fisheries sub-sectors, contributed to **7.6%**[8] of Moldova's gross domestic product (GDP) in 2023 and employed **55%**[9] of the workforce in 2022, according to the World Bank. Combined with the food processing industry, this sector contributed to more than **16%** of the GDP and approximately **45%** of total exports in 2022[10]. The industrial sector accounted for **17.4%**[11] of the country's GDP in 2023 and employed **13%**[12] of the active population in 2022. The manufacturing sector contributed to nearly **8%**[13] of the country's GDP in 2023. For the last decade, the services sector has continued to rise in importance in its contribution to Moldova's economy. Indeed, it accounted for **61.1%**[14] in 2023 of the GDP, employed nearly half of the workforce in 2022[15], and has thereby significantly surpassed the agriculture and the industry sectors in terms of contribution to the GDP.

Moldova's economic prospects have dimmed following Russia's invasion of Ukraine, with only a gradual recovery expected. Although the economy resumed growth in 2023, it was at a slower rate and came with an increase in poverty due to rising prices. Ongoing challenges such as the war in Ukraine, structural issues, and impending elections continue to pose constraints significantly impacting consumer and investor confidence to achieve long-term sustainable development and align with EU per capita income levels. Moldova needs robust reform momentum and investments in growth-enhancing, climate-resilient infrastructure. Structural challenges like low productivity growth, skills mismatch, governance deficiencies, and limited competition persist, necessitating reforms to boost market competitiveness, remove barriers to advanced technology adoption,

[4] World Bank. *Logistics Performance Index (LPI)* - Moldova. 2023 https://lpi.worldbank.org/international/global

[5] World Bank. International LPI – Global Ranking 2018. https://lpi.worldbank.org/2018

[6] Schwab, K. World Economic Forum. 2019. *The Global Competitiveness Report 2019*. https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

[7] World Economic Forum. Moldova – Curation: *The Global Competitiveness Index.* https://intelligence.weforum.org/topics/a1G0X000006NwVVUA0

[8] World Bank (2023). *Agriculture, forestry, and fishing, value added (% of GDP) - Moldova*. The World Bank Data. https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=MD

[9] World Bank (2022). *Employment in agriculture (% of total employment) (modeled ILO estimate) - Moldova*. The World Bank Data. https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=MD

[10] International Trade Administration (2022, August 09). *Moldova - Country Commercial Guide – Agriculture.* https://www.trade.gov/country-commercial-guides/moldova-agriculture

[11] World Bank (2023). *Industry (including construction), value added (% of GDP) - Moldova*. The World Bank Data. https://data.worldbank.org/indicator/NV.IND.TOTL.ZS?locations=MD

[12] World Bank (2022). *Employment in industry (% of total employment) (modeled ILO estimate) - Moldova.* The World Bank Data. https://data.worldbank.org/indicator/SL.IND.EMPL.ZS?locations=MD

[13] World Bank (2023). *Manufacturing, value added (% of GDP) – Moldova.* The World Bank Data. https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=MD

[14] World Bank (2023). *Services, value added (% of the GDP) – Moldova.* The World Bank Data. https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS?locations=MD

[15] World Bank (2022). *Employment in services (% of total employment) (modeled ILO estimate) - Moldova.* The World Bank Data. https://data.worldbank.org/indicator/SL.SRV.EMPL.ZS?locations=MD

and address market inefficiencies. Proposed reforms aim to accelerate public investment in infrastructure, implement a multimodal transport strategy, and diversify the energy sector to reduce reliance on limited sources. Strengthening PPP frameworks, enhancing procurement strategies, and attracting private investment are essential for sectoral development. Accompanying policy changes with institutional reforms, including subjecting State-Owned Enterprises (SOEs) to private company regulations, and promoting competition, is crucial to stimulate productivity growth and investment. Leveraging EU integration can drive private sector productivity, enhance competitiveness, and generate more job opportunities, positioning Moldova for long-term economic prosperity. Prioritizing preparations for potential access to EU funds, particularly for infrastructure needs, should be a key focus moving forward[16].

# B. AGRICULTURE SECTOR

Agriculture has traditionally served as the backbone of Moldova's economy and continues to do so. The country boasts favorable soil resources and ideal conditions for agricultural production, particularly its fertile black soil that is conducive to the cultivation of fruits and vegetables. Moldova enjoys a mild continental climate, characterized by short, relatively warm winters and long, hot summers, which enables early planting and grants producers a significant competitive edge. Moldovan farmers possess extensive expertise in various agricultural activities. Additionally, the presence of affordable labor, particularly in rural areas, supports the production of high-yield, labor-intensive crops that are competitive in export markets. Farmland covers 2.48 million hectares, encompassing 75 % of the country's territory, with arable land alone accounting for 1.82 million hectares[17].

## Agriculture production:

Throughout its rich history, agriculture has served as the primary means of subsistence for the population in Moldova. In this affectionately referred to 'small country with a big heart,' agriculture holds a prominent place as the cornerstone of the economy. Despite its pivotal role, Moldova's agriculture sector confronts substantial challenges that impede its ability to meet its full potential. Among the most prominent challenges are systemic deficiencies. For instance, the sector grapples with limited access to crucial rural infrastructure, such as irrigation systems, roads, and storage facilities. Furthermore, the employment of outdated technology and machinery, particularly in post-harvest processing, hampers overall productivity. Inadequate insurance coverage for agricultural production places farmers at risk of substantial losses resulting from unforeseen weather events. This uncertainty often discourages farmers from pursuing investments, securing loans, or seeking grants. A situation made worse as there is a lack of knowledge on how to access financing. Additionally, farmers lack knowledge of marketing tools to promote their branding and certain segments within the farming community regrettably exhibit reluctance to engage in cooperative efforts. Compounding these challenges is the adverse impact of climate change, which remains largely unaddressed and poorly understood. Finally, salaries within the agriculture sector rank among the lowest in Moldova, exacerbating difficulties in recruiting highly skilled, semi-skilled, and even low-skilled labor during peak cultivation, harvesting, and processing periods[18].

Annually, Moldova yields over one million tons of fresh fruits and vegetables, with the majority (80%) originating from individual households. 90% of locally processed fruits and vegetables are destined for export markets. Moldova boasts a diverse array of agricultural products, encompassing fruits, vegetables, grains, and livestock. The agricultural landscape includes essential crops like winter and spring grains (such as **wheat**, barley, and **maize**), sunflowers, sugar beet, potatoes, root vegetables, horticultural crops, and fruits. As for Moldova's vegetable production, it includes an extensive range of crops, such as tomatoes, onions, cabbage, cucumbers, pumpkins, peppers, carrots, red beets, garlic, squash, eggplants, potherbs, and green peas. Meanwhile, fruit cultivation focuses on apples, plums, sweet and sour cherries, pears, peaches, nectarines, quinces, apricots, soft fruits, walnuts, as well as table and wine grapes. In the Moldovan livestock sector, the primary products are poultry, pork, and beef.

## Agriculture exports:

Winter and spring grains (wheat, barley, and maize), sunflowers, sugar beets, potatoes and other root vegetables, as well as horticultural crops and fruits, are examples of basic crops[19]. In terms of exports, Moldova exported a total of **$4.94B** in 2022 making it the 124$^{th}$ out of 226 countries exporter in the world. During the last five years, the exports of Moldova have increased from $2.41B in 2016 to $4.94B in 2022. The most recent exports comprised insulated refined

[16] World Bank (2024 April). *Moldova Economic Update.* Macroeconomics Trade, and investment Global Practice. Special Section: Energy Affordability. https://thedocs.worldbank.org/en/doc/d1372d2b12612d7eb259fa07d6270de7-0080012024/original/Moldova-Economic-Update-2024-ENG.pdf

[17] International Trade Administration (2022, August 09). *Moldova - Country Commercial Guide – Agriculture.* https://thedocs.worldbank.org/en/doc/d1372d2b12612d7eb259fa07d6270de7-0080012024/original/Moldova-Economic-Update-2024-ENG.pdf

[18] Andros, L. Kolundzija, B. (2024, May 13). *Transforming Moldova's Agriculture by Leveraging Digital Solutions. Helvetas.* https://www.helvetas.org/en/switzerland/how-you-can-help/follow-us/blog/agriculture-and-nutrition/Transforming-Moldovas-Agriculture-by-Leveraging-Digital-Solutions

[19] The Food and Agriculture Organization. *AGROVOC country report - Republic of Moldova. FAO.* https://www.fao.org/agrovoc/fr/agrovoc-country-report-republic-moldova-0

petroleum ($564M), insulated wire ($511M), seed oils ($392M), corn ($350M), and sunflower seeds ($341M)[20]. Moldova exported **$1.11B** in 2022 in vegetable products rendering it the 68th largest exporter of vegetable products in the world. The main destinations were Romania ($425M), Türkiye ($179M), Russia ($94.1M), Bulgaria ($83.7M), and Switzerland ($31.7M)[21]. For animal products, the exportation rate was valued at **$31M** in 2022. This category covers honey (which represent 42.9% of total export in that category equivalent to $13.3M), bovine ($6.11M), cheese ($5.43M), and frozen bovine meat ($1.95M)[22]. It's worth noting that the export of agricultural food and feed products, excluding fish and fish products, to the EU as shown in **Figure 1**[23] has significantly increased by 73% from 2021 to 2023.

[20] Observatory of Economic Complexity. *Moldova.* OEC. https://oec.world/en/profile/country/mda

[21] Observatory of Economic Complexity. *Vegetable products in Moldova.* OEC. https://oec.world/en/profile/bilateral-product/vegetable-products/reporter/mda

[22] Observatory of Economic Complexity. *Animal products in Moldova.* OEC. https://oec.world/en/profile/bilateral-product/animal-products/reporter/mda

[23] EU Commission Directorate-General for Agriculture and Rural Development (2024, April 15th). *AGRI-FOOD TRADE STATISTICAL FACTSHEET European Union - Moldova.* EU Commission. https://agriculture.ec.europa.eu/system/files/2023-05/agrifood-moldova_en.pdf

**FIGURE 1:** STRUCTURE OF EU AGRI-FOOD TRADE WITH MOLDOVA, 2013 – 2023

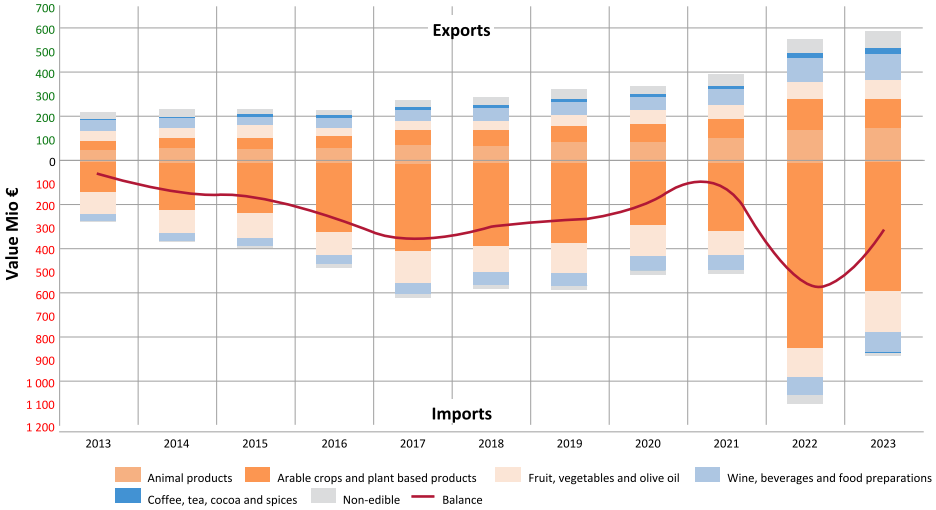
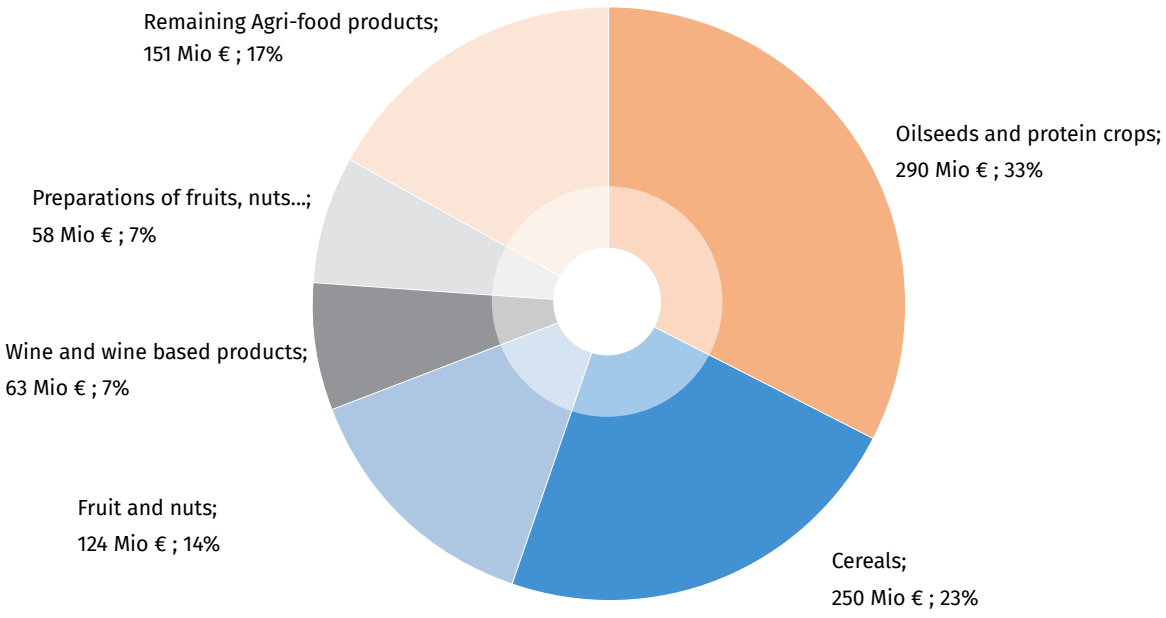



**FIGURE 2:** TOP EU AGRI-FOOD IMPORTS FROM MOLDOVA IN 2023



# C. INTERNATIONAL TRADE

Since achieving independence in 1991, Moldova has made some progress in implementing free-market economic reforms and institutionalizing democratic principles. Consequently, due to a series of import restrictions imposed by Russia on Moldovan products, the country has redirected its exports from the Commonwealth of Independent States (CIS) towards European markets.

Moldova, as a member of the World Trade Organization (WTO) since July 2001, benefits from Most Favored Nation trading ties with all WTO members. In addition, in June 2014, the EU and Moldova signed an association agreement, which came into effect in July 2016. An essential element of this agreement is the Deep and Comprehensive Free Trade Area (DCFTA), which reduces the tariffs that European and Moldovan businesses must pay when exporting to/importing from Moldova/EU. It also streamlines customs procedures, gradually aligning Moldovan legislation, norms, procedures and standards with those of the EU, thereby facilitating trade and commerce[24]. The EU has adopted a regulation which provided temporary full trade liberalisation for Moldovan agricultural products for one year. The measures were first introduced in July 2022, and have been extended until 24 July 2025. The regulation is just one of the measures adopted by the EU as part of its solidarity with the region in the context of the Russian war in Ukraine[25].

Moldova benefits from its geographic proximity to two significant markets: the European Union, which encompasses over 65% of the nation's exports, and the CIS, which accounts for 15% percent of Moldovan exports. The main export categories include food and beverages, agricultural products, apparel, and transportation equipment. Free Trade Agreements (FTAs) are in place between Moldova and Türkiye, as well as with the CIS, comprising Armenia, Azerbaijan, Belarus, Kazakhstan, Georgia, Russia, Kyrgyzstan, Tajikistan, and Uzbekistan[26]. Furthermore, in June 2023, an FTA was signed between Moldova and the European Free Trade Association (EFTA) states, comprising Iceland, Liechtenstein, Norway, and Switzerland [27].

[24] European Commission. *EU-Moldova Deep and Comprehensive Free Trade Area. European Union.* https://trade.ec.europa.eu/access-to-markets/en/content/eu-moldova-deep-and-comprehensive-free-trade-area

[25] European Commission. *EU trade relations with Moldova. Facts, figures and latest developments.* https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/moldova_en

[26] International Trade Administration (2024, August 03). *Moldova - Country Commercial Guide - Trade Agreements.* https://www.trade.gov/country-commercial-guides/moldova-market-overview

[27] European Free Trade Association (2023, June 27). *EFTA and Moldova sign a Free Trade Agreement.* https://www.efta.int/Free-Trade/news/EFTA-and-Moldova-sign-Free-Trade-Agreement-536291

# STANDARDS COMPLIANCE ANALYSIS

# A. COMPLIANCE WITH REGULATIONS IN AGRI-FOOD TRADE

Moldova has inherited its principles of metrology, standardization, testing, and quality from the Soviet era, during which manufacturers were required to adhere to mandatory standards. The nation's transition to a free-market economy, along with its accession to the WTO in 2001, prompted a comprehensive revision of the previous system and a shift towards a philosophy that emphasizes industry-initiated and market-driven standards. In alignment with Moldova's commitments to the WTO and aspirations for European integration, new legislation has been enacted. The country has intensified its efforts to harmonize its quality assessment system with European standards, particularly following the signing of the Association Agreement/Deep and Comprehensive Free Trade Area (AA/DCFTA). Major functions such as accreditation, certification, and market surveillance have been delineated. Since 2007, all national standards have been rendered voluntary. Moldova continues to implement EU directives and regulations, and its central standardization authority is the National Institute for Standardization, which is responsible for adopting standards and maintaining the national repository of standardization documents[28].

Moldova initially adopted a range of Soviet GOST (state standards established in the Soviet Union). Under its Association AA/DCFTA, Moldova has continued to incorporate European standards. A substantial body of European standards (CEN/CENELEC) has been adopted as Moldovan national standards, including harmonized standards, all of which have been effectively transposed. Consequently, all conflicting standards, including GOST, have been rescinded in light of the transposition of European standards.

Moldova is a correspondent member of the International Organization of Standardization (ISO) and the International Organization of Legal Metrology (OIML); an associate member of the International Electrotechnical Commission (IEC), the European Committee for Electrotechnical Standardization (CENELEC), the European co-operation for Accreditation (EA), and the Meter Convention; an affiliated member of the European Committee for Standardization (CEN), and the International Laboratory Accreditation Cooperation (ILAC); a full member of the Euro-Asian Cooperation of National Metrological Institutions (COOMET); and an observer to the European Telecommunications Standards Institute (ETSI). Moldova is a member of the Codex Alimentarius Commission, the World Organization for Animal Health (OIE), the World Health Organization (WHO), and the International Plant Protection Convention (IPPC). It is also a member of the European and Mediterranean Plant Protection Organization (EPPO).

The Ministry of Economy is responsible for the development of policy in the field of standardization, metrology, accreditation and conformity assessment and for supervising the following public institutions: the National Institute of Standardization (NIS), the National Institute of Metrology (NIM), the National Center of Accreditation (MOLDAC), and the Consumer Protection Agency (CPA)[29].

## Quality Infrastructure for Sustainable Development Index:

The Quality Infrastructure for Sustainable Development (QI4SD) Index, developed by UNIDO, provides a framework of indicators which summarizes the overall state of development of a country's and/or region's Quality Infrastructure (QI) readiness to support the Sustainable Development Goals (SDGs). Countries are grouped into GDP groups and within these groups, countries are then ranked based on their QI readiness to implement the SDGs. It's important to note that some of the ranking information relates to ranks within these groups and that even within the same GDP groups, countries vary considerably in size and other growth indicators. The data from the INetQI organizations was collected from February to June 2021. However, the data year might differ from the year of collection as these organizations have different timeframes to update their own information.

QI is a multidimensional concept and is decomposed into the following five dimensions which are captured with 36 indicators from combined data sources: Metrology, Standardization, Conformity assessment, Accreditation, and Policy. Per the first edition of the QI4SD Index, Moldova has a QI4SD Index score of **29.8** placing it in the **77th** position for the countries assessed. Regarding the five dimensions, Moldova has a value of 17.1 for Metrology, 28.8 for Standardization, 1.3 for Conformity assessment, and 72.0 for Accreditation (no data is currently available for the Policy dimension).

[28] United Nations Economic Commission for Europe (2017). *Regulatory and Procedural Barriers to Trade in the Republic of Moldova. UNECE.* https://unece.org/fileadmin/DAM/trade/Publications/ECE_TRADE_433E.pdf

[29] International Trade Administration (2024 August 03). *Standards for Trade.* https://www.trade.gov/country-commercial-guides/moldova-standards-trade

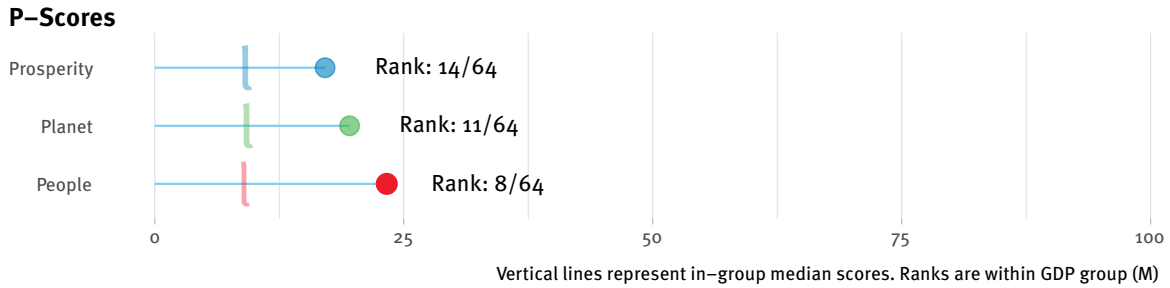
Moldova has done well in the following areas:

| Strengths | Dimension | Rank | Value | Unit |
|---|---|---|---|---|
| Adopted IEC standards | Standards | 22 | 91 | Number |
| Adopted ISO standards | Standards | 37 | 13 | Number |
| Number of CMCs | Metrology | 51 | 76 | Number |

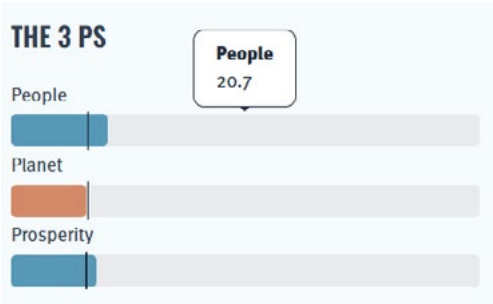
while Moldova should focus on improving the values of the following indicators:

| Weaknesses | Dimension | Rank | Value | Unit |
|---|---|---|---|---|
| Membership of ITU | Standards | 79 | 1 | Composite score |
| Participation in ISO technical committees | Standards | 94 | 44 | Number |
| Number of recognised certificates (ISO) | Conformity | 127 | 110 | Number |

Within its GDP group, Moldova ranked on the three pillars of sustainable development (people, prosperity and planet) as follows:




For the second edition of the QI4SD Index, the methodology of the index has been slightly revised and some of the indicators were modified after feedback was received during an Expert Group Meeting, which was held in November 2023 in Vienna. As a result of these modifications, the values of the QI4SD Index in the first edition should not be compared with those of the second edition of the index. For the second edition of the index launched in November 2024, Moldova has a QI4SD Index score of **32.4** placing it in the **88th** position out of the countries assessed. Regarding the five dimensions, Moldova has a value of **17.6** for Metrology, **30.2** for Standardization, **2.3** for Conformity assessment, and **79.4** for Accreditation (no data is currently available for the Policy dimension). Regarding the three P-indices, Moldova has a value of 20.7 for People, 16.2 for Planet, and 18.3 for Prosperity as can be seen in the figure below:




More details about the QI4SD Index can be found at https://hub.unido.org/qi4sd/.

# B. REJECTION ANALYSIS

Sanitary and phytosanitary (SPS) measures are aimed at protecting the safety and health of consumers and complying with them applies to both domestic products as well as exports. When food and feed products get rejected at the borders, the consequences can be extremely dire and costly. The total cost of these rejections includes the loss of the export products (as they are usually destroyed by the importing country), transportation costs, freight and insurance, and related expenses. In addition to the loss of earnings, rejections damage the exporting country's reputation and the importing country may lose trust in the quality and safety of products coming from the exporting nation, thereby reducing the country's export competitiveness in the long term. Exporters may need to sell rejected products at a discount to account for the risk and risk joining the list of producers facing reinforced checks (as in the case of exports to the EU).[30] The data set of border rejections covers the period of 2010 to 2022.

[30] Kareem, F. O., Brümmer, T. L., & Martinez-Zarzoso, I. (2015). *Food safety standards, compliance and European Union's rejection of African exports:* The role of domestic factors. *GlobalFood Discussion Papers, 74.* https://www.econstor.eu/bitstream/10419/121845/1/837623928.pdf

## Aggregate Rejection Rate:

The Aggregate Rejection Rate (ARR) is the simple sum of the annual number of rejections over the study period. Increases in the number of rejections can reflect both increases in the volume of exports and in the rate of non-compliance to product quality and safety standards and regulations. While the ARR is used to compare how well Moldovan food exports are performing in the various markets, it is important to note that each country can apply different approaches to inspection. For instance, the US rejection data excludes meat, poultry, and their products. Additionally, not all importing countries included in the data set track the volume, size, and value of the consignments in their rejection data. Consequently, a more in-depth sub-analysis is necessary to facilitate the comparison of the number of rejections of a specific country's food and feed exports with the volume of food and feed products exported by that country to a particular market.

Although analyzing border rejection data proves quite useful in determining some of the causes of non-compliance to food safety standards, it is important to use caution and keep in mind that it is not the only indicator of non-compliance. For instance, if a certain food and feed product cannot get exported due to an inability to access a certain market for non-compliance reasons, it will not be included in the border rejections data set that is being analyzed (as no exports means no rejections). Accordingly, this analysis should be used hand-in-hand with other sets of data and indicators to get a broader picture of the short-term and long-term issues plaguing the quality infrastructure landscape of a specific country.

**TABLE 2:** AGGREGATE NUMBER OF REJECTIONS OF MOLDOVAN FOOD AND FEED HS 1-23 EXPORTS DURING 2010 – 2022

| Markets | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Australia | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** | **6%** |
| China | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 0 | 1 | **21** | **19%** |
| EU | 4 | 24 | 0 | 4 | 4 | 1 | 2 | 0 | 2 | 2 | 3 | 1 | 7 | **54** | **50%** |
| Japan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | **2** | **2%** |
| USA | 5 | 0 | 1 | 13 | 0 | 1 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | **25** | **23%** |
| Total | 16 | 24 | 1 | 17 | 4 | 2 | 9 | 1 | 15 | 4 | 6 | 1 | 8 | **108** | **100%** |

**Table 2** shows that there was a decrease in rejections in the EU market in 2021 compared to the previous year. However, in 2022, rejections increased from 1 to 7. For the American market, rejections decreased from 3 in 2020 to 0 in 2021 and 2022. As the Russian invasion of Ukraine started in early 2022, there was a 23% decrease of agricultural products exported from Moldova to the US in 2023 compared to the previous year.[31] Therefore, it can be concluded that Moldova has improved its compliance with food safety regulations set by the US.

[31] Foreign Agricultural Service (2023). U.S. Trade with Moldova in 2023. https://www.fas.usda.gov/regions/moldova

**FIGURE 3:** EVOLUTION OF THE GLOBAL NUMBER OF REJECTIONS FOR MOLDOVA FOR THE 5 MARKETS, 2010 -2022

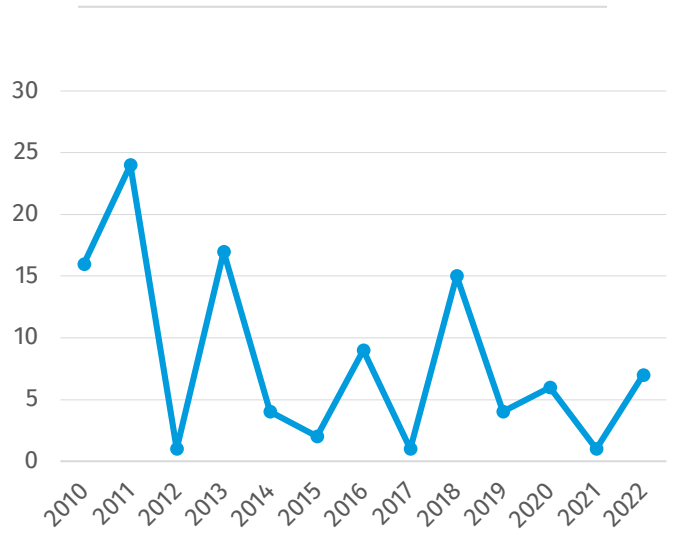



**FIGURE 4:** SHARE OF REJECTIONS BY MARKET, 2010 - 2022

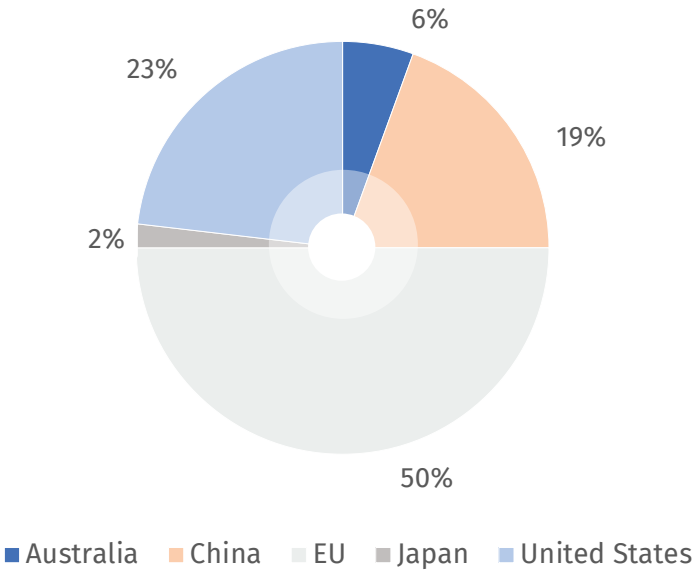


**Table 2** and **Figure 3** show that the total number of rejections has overall decreased by half from 2010 to 2022. However, there was a major spike in rejections from the EU and the US markets in 2011 and 2013 respectively. Per **Table 2** and **Figure 4**, during the period of 2010 – 2022, the European market accounted for half of the rejections of Moldovan agricultural exports while the American one accounted for almost a quarter of them (23%). As the exports of agri-food products with the EU amounted to almost three quarters of the total Moldovan food exports, this high rate of 50% makes sense. The Chinese market covers approximately a fifth of the share of rejections. It can be noted that the aggregate number of rejections for food and feed Moldovan exports for the five markets has decreased by 50% from 16 to 8 during the studied period. This is considered an improvement that deserves to be acknowledged and commended as the number of exports has significantly increased during that decade.

**Table 2** and **Figures 5** and **6** show that rejections from the EU market have fluctuated during the 2010 to 2022 period. For the Chinese market, there were peaks in the share of total rejections in 2016 and 2018, with China accounting for 78% and 80% of rejections respectively. In the following sections, we will investigate further these fluctuations and find out if the high number of rejections is related to the increase in exports or if there are other reasons that led to a rise in non-compliance with food quality and safety standards.

As there were very few rejections recorded for the

**FIGURE 5:** EVOLUTION OF ARR BY MARKET, 2010 - 2022

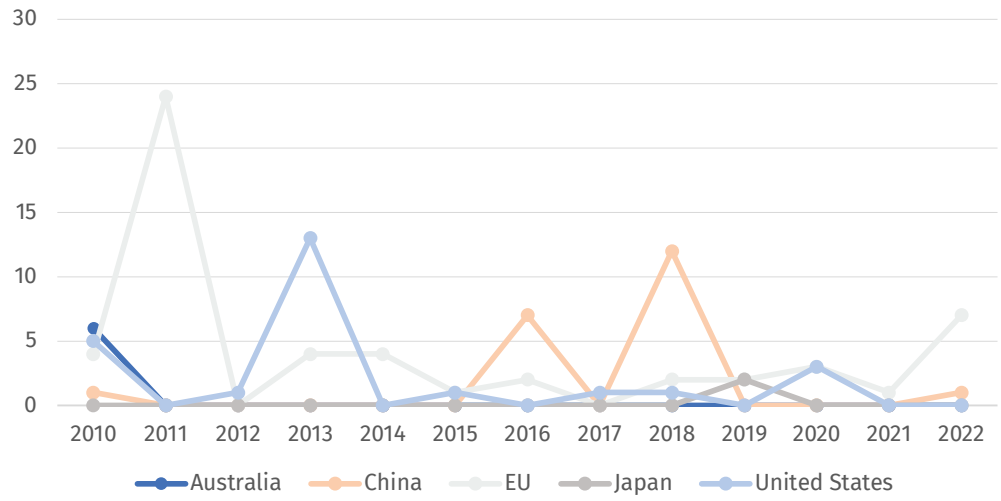



**FIGURE 6:** GLOBAL NUMBER OF REJECTIONS FOR ALL MARKETS, 2010 - 2022

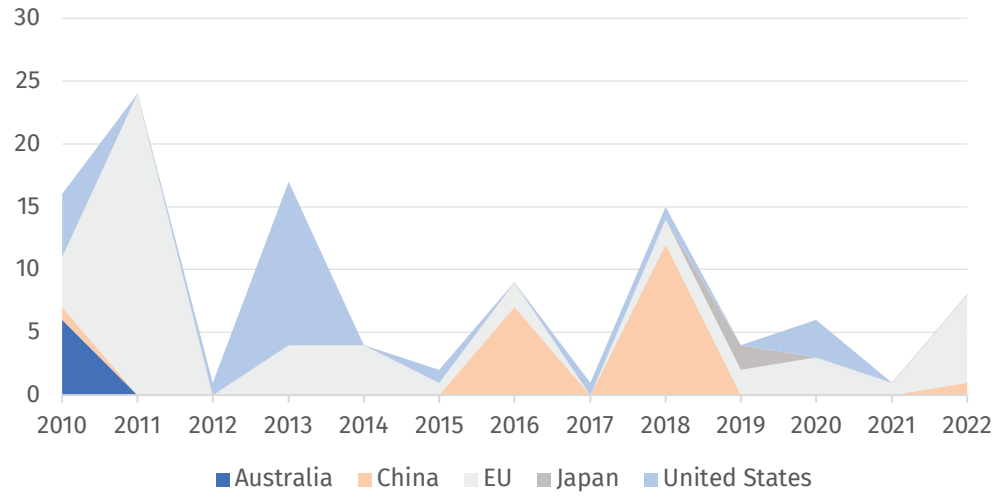
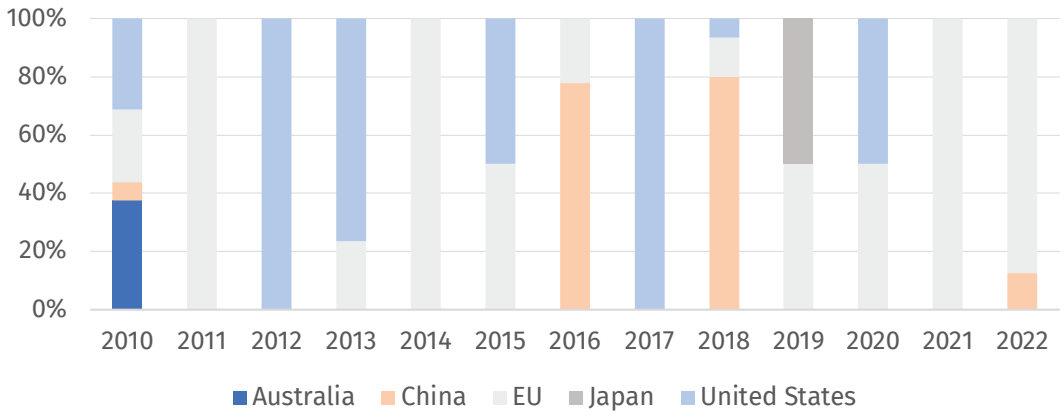


**FIGURE 7:** SHARE OF REJECTIONS FOR MOLDOVAN FOOD AND FEED EXPORTS BY MARKET, 2010 - 2022

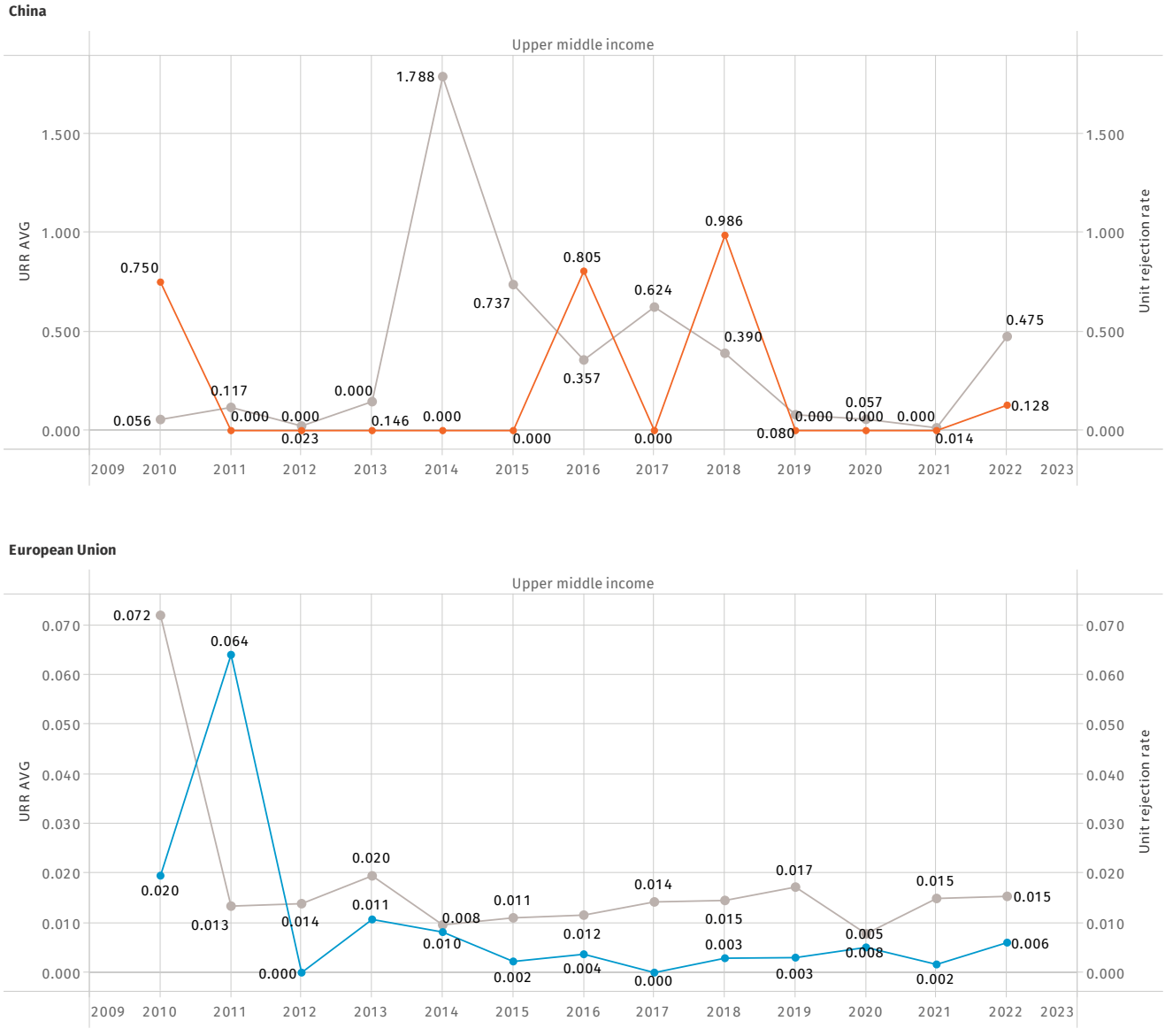


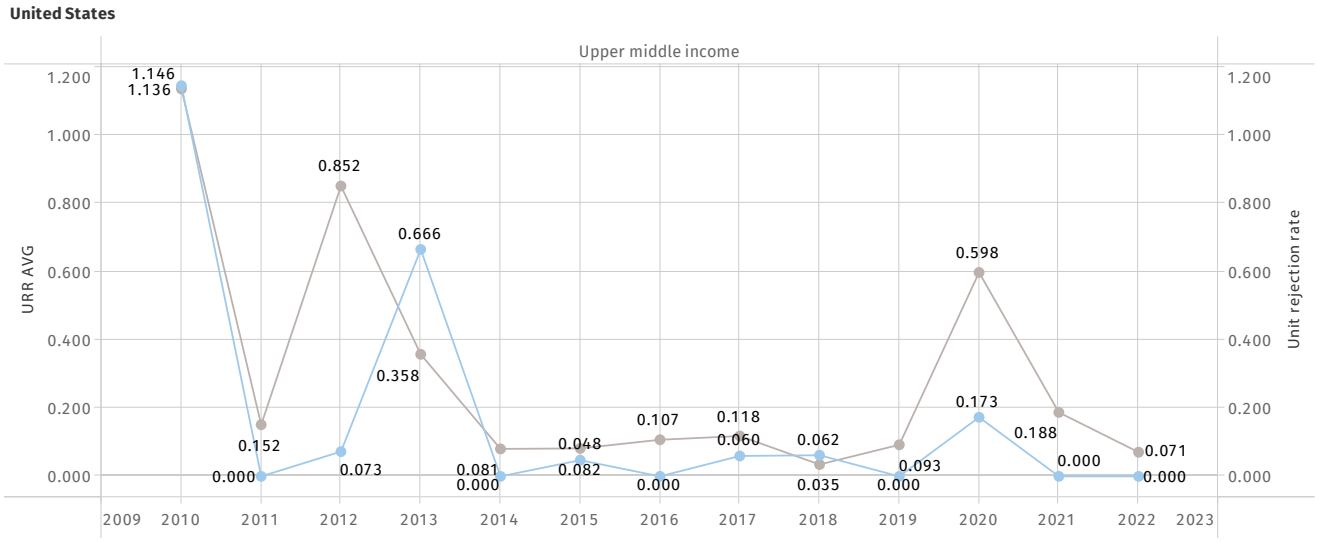

Australian and Japanese markets during the period of 2010 to 2022 for Moldovan food and feed exports, these two markets will not be discussed any further and the focus of the analysis will solely include the European, American, and Chinese markets.

# Unit rejection rate:

The Unit Rejection Rate (URR) is defined as the number of rejections per US$ 1 million of imports. The colored charts represent the URR for Moldova over the period of 2010 to 2022 for HS 1-23 food and feed products for a specific market. Moldova's URR (the colored line) is being compared with the average URR for the World Bank income bracket to which Moldova belongs to, which is the upper-middle income level (the grey line). The URR indicator accounts for changes in the volume of exports such that it provides a direct measure of the rate of non-compliance. A higher URR shows a higher rate of non-compliance of Moldova with regard to food safety and quality regulations.

**FIGURE 8:** URR FOR MOLDOVAN FOOD AND FEED HS 1-23 EXPORTS TO THE 3 MARKETS DURING 2010 – 2022






According to **Figure 8**, Moldova's URR in the European market for food and feed products fluctuated between 0 and 0.064 during the period of 2010 – 2022 with an average of 0.001, which means that for every US$ 1 billion of imports from Moldova to the EU, there was about one rejection. This rate is very low and is lower than the average URR of all upper-middle income countries as classified by the World Bank. For the American market, Moldova's URR is slightly lower than the average URR for all upper-middle income countries. In the Chinese market, Moldova's URR was lower than the average URR for all upper-middle income countries during the period of 2010 to 2022. But, it experienced peaks in 2010 (0.750), in 2016 (0.805), and in 2018 (0.986) and it'd be interesting to investigate further the root causes behind these increases.

# Relative rejection rate indicator:

The bar charts in **Figure 9** display the distribution of the Relative Rejection Rate (RRR) (log ratio) across markets for Moldova for H1-23 food and feed export products in 2022. The RRR shown (log ratio) is the natural logarithm of the ratio of Moldova's share of total rejections to share of total imports. The indicator provides a convenient measure of the performance of countries relative to one another in a year or over a period of time. A higher RRR (log ratio) for Moldova implies poorer performance with regard to food safety and quality standards in that market relative to other markets.

**FIGURE 9:** RRR FOR MOLDOVAN FOOD AND FEED HS 1-23 EXPORTS IN 2022

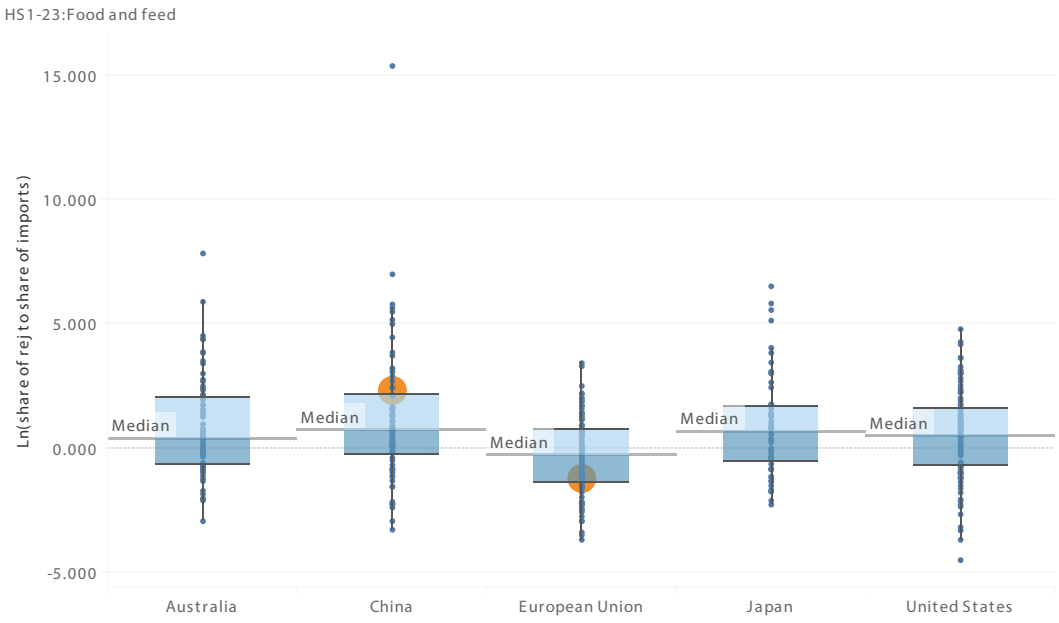



**TABLE 3:** RRR FOR HS1-23 FOOD AND FEED MOLDOVAN EXPORTS IN 2022

| CHINA | | EU | | US | |
|---|---|---|---|---|---|
| Median | Moldova | Median | Moldova | Median | Moldova |
| 0.717 | **2.337** | - 0.275 | **-1.199** | 0.528 | **N/A** |

As shown in **Figure 9** and **Table 3,** Moldova's RRR for the Chinese market is a lot higher than in other markets, which points to the country's poorer performance in terms of compliance with the Chinese food safety and quality standards compared to other markets. As the RRR value for Moldova is lower than the median RRR for the European market, Moldova should focus its efforts on improving its compliance with the Chinese market.

# C. REASONS FOR REJECTION

## Frequency of reasons for rejection:

The frequency of reasons for rejections is the total counts of consignments rejected at the border of entry for a particular reason. Examples of possible reasons for rejection include labeling, hygienic condition, adulteration, missing document, additive, bacterial contamination, pesticide residues, veterinary drugs residues, mycotoxins, heavy metal, and packaging. The "aggregate frequency of reasons of rejections" can be different from "aggregate number of rejections" as a single consignment can be rejected on multiple grounds.

## General reasons for rejection:

**TABLE 4:** FREQUENCY OF REASONS FOR REJECTION (NUMBER & %) OF MOLDOVAN FOOD & FEED HS 1-23 EXPORTS TO THE 3 MARKETS DURING 2010 - 2022

| Moldova | CHINA | | EU | | US | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| | Numbers | % | Numbers | % | Numbers | % | Numbers | % |
| Additive | 0 | 0% | 3 | 5% | 33 | 47% | 35 | **24%** |
| Adulteration / missing document | 2 | 9% | 3 | 5% | 6 | 9% | 11 | **7%** |
| Bacterial contamination | 0 | 0% | 0 | 0% | 0 | 0% | 0 | **0%** |
| Heavy metal | 0 | 0% | 1 | 2% | 0 | 0% | 1 | **1%** |
| Hygienic condition / controls | 0 | 0% | 6 | 10% | 0 | 0% | 6 | **4%** |
| Labeling | 1 | 5% | 0 | 0% | 14 | 20% | 15 | **10%** |
| Mycotoxin | 0 | 0% | 1 | 2% | 0 | 0% | 1 | **1%** |
| Other contaminants | 1 | 5% | 28 | 49% | 0 | 0% | 29 | **20%** |
| Other microbiological contaminants | 0 | 0% | 0 | 0% | 0 | 0% | 0 | **0%** |
| Others | 3 | 14% | 9 | 16% | 0 | 0% | 12 | **8%** |
| Packaging | 14 | 67% | 1 | 2% | 0 | 0% | 15 | **10%** |
| Pesticide residues | 0 | 0% | 4 | 7% | 3 | 4% | 7 | **5%** |
| Veterinary drugs residues | 0 | 0% | 1 | 2% | 14 | 20% | 15 | **10%** |
| Total | **21** | 100% | **57** | 100% | **70** | 100% | **147** | **100%** |

**FIGURE 10:** AGGREGATE FREQUENCY OF REASONS FOR REJECTION (%) FOR MOLDOVAN FOOD & FEED HS 1-23 EXPORTS TO THE 3 MARKETS DURING 2010 - 2022

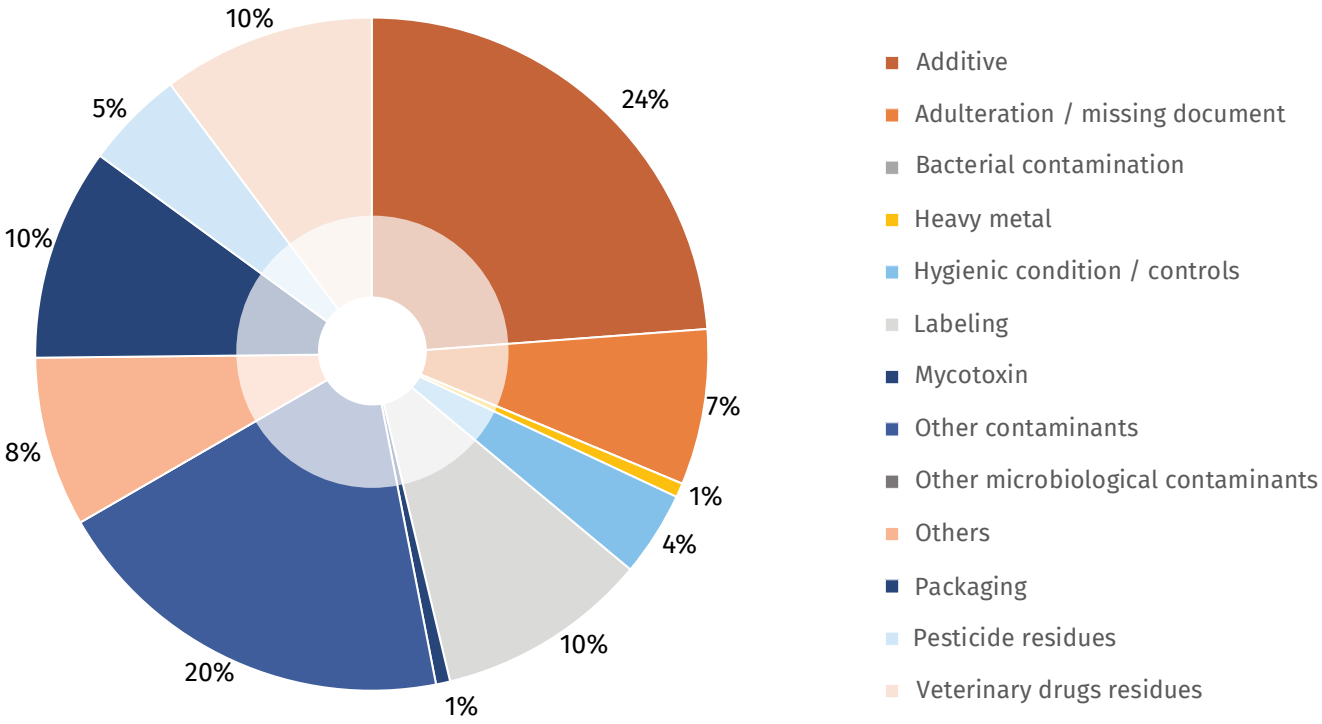



**Figure 10** and **Table 4** show the aggregate frequency of reasons of rejections of food and feed products exported from Moldova into the three markets during 2010 to 2022. The frequency of reasons for rejection is the total counts of consignments rejected at the border of entry for a particular reason. This indicator helps exporting countries identify areas of capacity building (solving key reasons for rejection) to attain or improve international trade standards compliance. The main causes of rejections for Moldova during the stated time period were additives (24%) and other contaminants (20%). Other causes were labeling (10%), packaging (10%), and veterinary drugs residues (10%). Moldova therefore needs to strengthen its capacity in safety, hygiene and assessment and control techniques to comply with international regulations on the main causes of rejections: **additives, other contaminants**, and to a lesser degree **packaging**, **labeling**, and **veterinary drugs residues**.

# Reasons for rejection by market:

**Figure 11** illustrates the frequency of reasons for rejection of Moldovan food and feed products in the European, Chinese, and American markets.

**FIGURE 11:** FREQUENCY OF REASONS FOR REJECTION (%) FOR FOOD & FEED HS 1-23 MOLDOVAN EXPORTS BY MARKET DURING 2010 – 2022

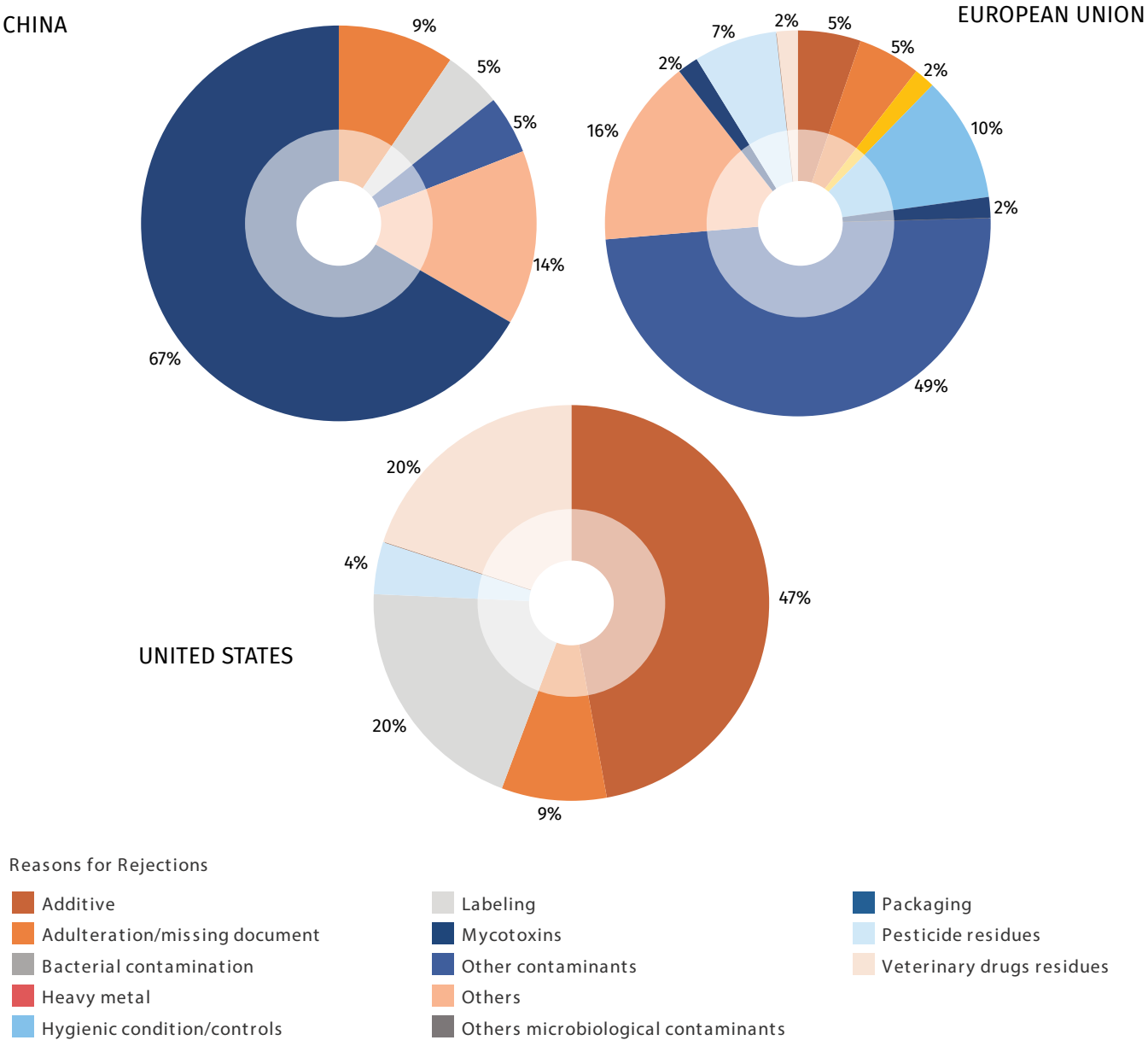



**Table 4** and **Figure 11** illustrate that for the American market, the most common reasons for rejection of Moldovan agri-exports during the period of 2010 to 2022 were **additives** (47%), **labeling** (20%), and **veterinary drugs residues** (20%). The U.S. Department of Agriculture inspectors and the Food and Drug Administration oversee the production on U.S. soil of more than 80% of foodstuffs - fish, seafood, produce, and dairy products. The measures enforced by the USDA and FDA cost a total of $2 billion (2019). This high price tag is justified by the excellent performance of the US inspection regime. Moldova must therefore ensure that its agricultural exports to the US do not contain additives. In the EU market, the most common reasons for rejections during the same time period were other contaminants (49%), others (16%), and hygienic condition / controls (10%), and pesticide residues (7%). The rejections caused by **contamination** represent almost half of the total causes of rejections in the European market. Finally, the main causes of rejection in the Chinese market were **packaging** (67%) and others (14%).

# D. COMPARATIVE ANALYSIS

## Country comparison:

TABLE 5: MAIN INDICATORS OF THE 3 COUNTRIES - MOLDOVA, ROMANIA, AND GEORGIA

| | Moldova | Romania | Georgia |
|---|---|---|---|
| GDP in billion USD – 2023 | 16.54 | 351 | 30.54 |
| Total population in million – 2023 | 2.49 | 19.06 | 3.76 |
| GDP per capita in USD – 2023 | 6,729 | 18,404 | 8,283 |
| Human Development Index – 2022 | 0.763 | 0.827 | 0.814 |
| Logistics Performance Index (Overall) - 2023 | 2.5 | 3.2 | 2.7 |
| Food Safety Index – 2020 | 80 | 80 | 40 |
| Main exported agricultural products - 2022 | Corn, sunflower seeds, seed oil, apples | Wheat, corn, sunflower seeds, seed oils | Wine, nuts, flavored water, pitted fruits, fish oil |
| Main trading partners – 2022 | Romania, Ukraine, Russia, Türkiye, Italy, China | Germany, Hungary, Italy, Türkiye | Russia, China, US, Azerbaijan, Armenia, Germany |

Given Moldova's economic performance and its efforts to meet international standards, the countries selected for benchmarking are Romania and Georgia. All three countries are either already part of the European Union, in the case of Romania, or have recently been granted candidate status to join the EU, as is the case for Moldova and Georgia. Thus, these countries maintain a privileged commercial and financial relationship with the EU, which remains their most important economic partner. The three nations also share several similar values across various indicators. For instance, their Human Development Index (HDI) ranges between 0.76 and 0.82, while their Logistics Performance Index (LPI) falls between 2.5 and 3.2. Although the contribution of the agricultural sector to GDP may be low, the sector remains crucial in supporting the livelihood of the large rural population in each country. Additionally, the three countries export similar agricultural products, such as corn, seeds and seed oils, wheat, and various fruits.

## Aggregate rejection rate:

The Aggregate Rejection Rate is shown for Moldova, Romania, and Georgia in **Table 6**.

**TABLE 6:** AGGREGATE NUMBER OF REJECTIONS OF FOOD AND FEED HS 1-23 EXPORTS DURING 2010 – 2022

**MOLDOVA**

| Markets | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Australia** | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** | **6%** |
| **China** | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 0 | 1 | **21** | **19%** |
| **EU** | 4 | 24 | 0 | 4 | 4 | 1 | 2 | 0 | 2 | 2 | 3 | 1 | 7 | **54** | **50%** |
| **Japan** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | **2** | **2%** |
| **USA** | 5 | 0 | 1 | 13 | 0 | 1 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | **25** | **23%** |
| **Total** | 16 | 24 | 1 | 17 | 4 | 2 | 9 | 1 | 15 | 4 | 6 | 1 | 8 | **108** | **100%** |

**ROMANIA**

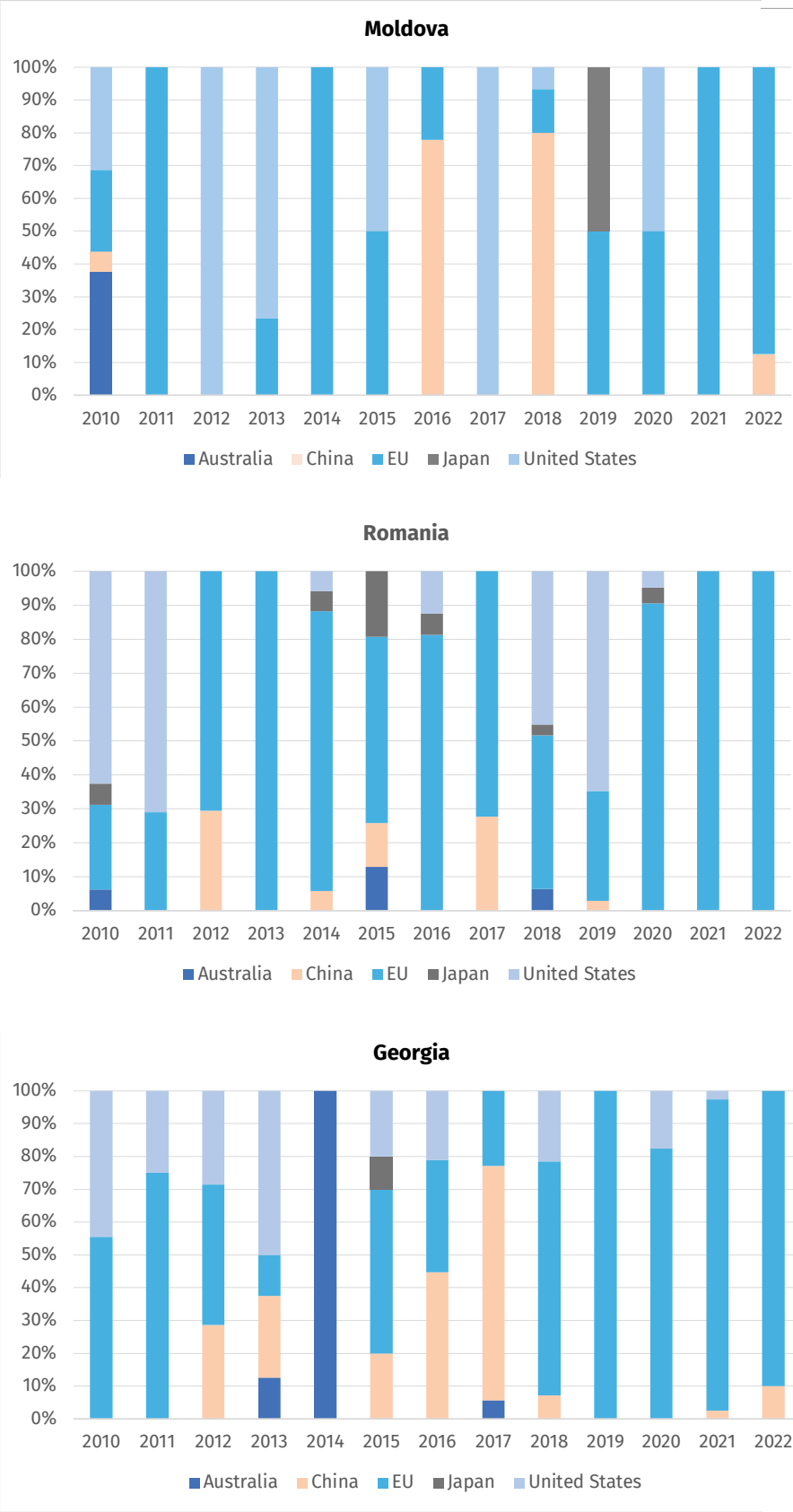
| Markets | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Australia** | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | **7** | **3%** |
| **China** | 0 | 0 | 5 | 0 | 1 | 4 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | **16** | **6%** |
| **EU** | 4 | 9 | 12 | 17 | 14 | 17 | 13 | 13 | 14 | 11 | 19 | 13 | 18 | **174** | **62%** |
| **Japan** | 1 | 0 | 0 | 0 | 1 | 6 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | **11** | **4%** |
| **USA** | 10 | 22 | 0 | 0 | 1 | 0 | 2 | 0 | 14 | 22 | 1 | 0 | 0 | **72** | **26%** |
| **Total** | 16 | 31 | 17 | 17 | 17 | 31 | 16 | 18 | 31 | 34 | 21 | 13 | 18 | **280** | **100%** |

**GEORGIA**

| Markets | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Australia** | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | **5** | **2%** |
| **China** | 0 | 0 | 2 | 2 | 0 | 2 | 17 | 25 | 1 | 0 | 0 | 1 | 1 | **51** | **23%** |
| **EU** | 5 | 9 | 3 | 1 | 0 | 5 | 13 | 8 | 10 | 17 | 14 | 38 | 9 | **132** | **60%** |
| **Japan** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **0%** |
| **USA** | 4 | 3 | 2 | 4 | 0 | 2 | 8 | 0 | 3 | 0 | 3 | 1 | 0 | **30** | **14%** |
| **Total** | 9 | 12 | 7 | 8 | 2 | 10 | 38 | 35 | 14 | 17 | 17 | 40 | 10 | **219** | **100%** |

**Table 6** illustrates that the EU border rejections have the highest share of all rejections in the five markets for Moldovan, Romanian, and Georgian exports (between 50 and 62%). For Moldova and Romania, their next highest share of rejections came from the US market, at 23% and 26% respectively. As for the Chinese market, it represented approximately one fifth of rejections for Moldova and Georgia. We can therefore conclude that the three countries should first focus on reducing European food and feed border rejections. For Moldova, there was a decrease in rejections in the EU market in 2021 compared to the previous year. However, in 2022, rejections increased from 1 to 7. A similar situation occurred for Romania with border rejections increasing from 13 to 18 in the same market. This may be due to the onset of Russia's invasion of Ukraine in early 2022 as well as the Covid-19 pandemic resulting in more stringent food safety and quality regulations.

**FIGURE 12:** SHARE OF REJECTIONS OF FOOD AND FEED EXPORTS BY MARKET DURING 2010-2022




Based on **Figure 12**, the share of EU rejections was quite high for Moldovan, Romanian, and Georgian exports in 2010. Then, over the next decade, they increased significantly for all three countries. Indeed, for Moldova, the share of EU rejections increased from 25% in 2010 to 89% in 2022. A similar performance is noted for Romania (25% in 2010 to 100% in 2022) and Georgia (55% in 2010 to 90% in 2022). As the EU is the most important destination for food and feed exports, its share of rejections being high makes sense. However, it would be interesting to check other indicators in the next sections to ensure that this increase isn't due to a worsening performance with regard to compliance with European food safety and quality regulations.

# Unit rejection rate:

The Unit Rejection Rate (URR) is defined as the number of rejections per US$ 1 million of imports. The URR indicator accounts for changes in the volume of exports such that it provides a direct measure of the rate of non-compliance. The URR is shown for Moldova, Romania, and Georgia in **Figure 13**.

**FIGURE 13:** URR FOR FOOD AND FEED HS 1-23 EXPORTS TO THE 5 MARKETS DURING 2010 – 2022

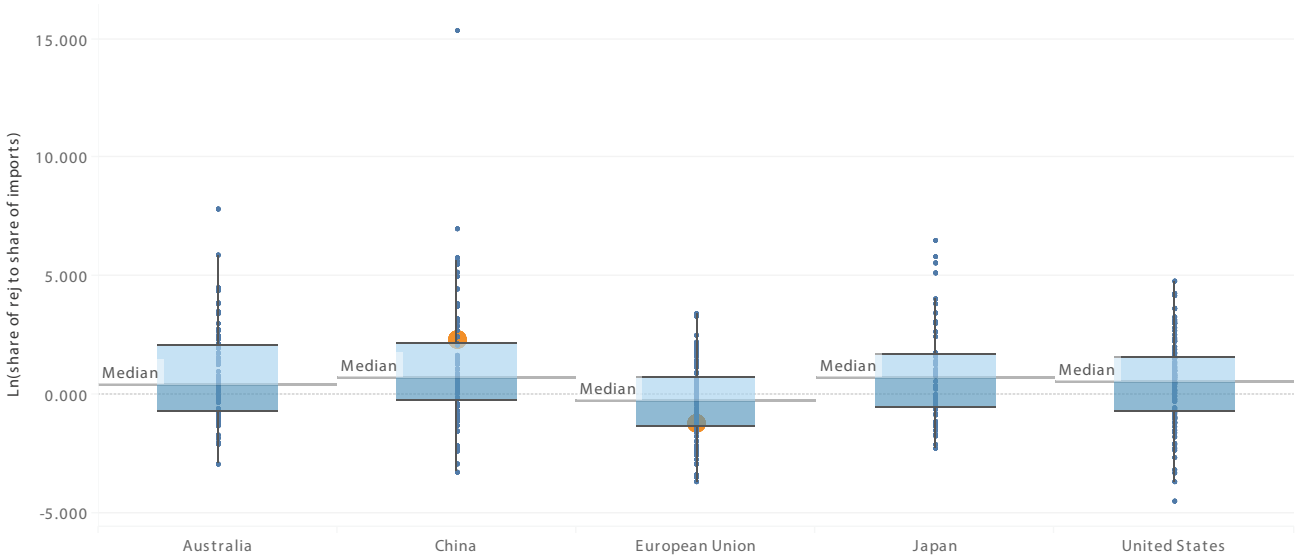
Per **Figure 13**, all three countries have URR which are well below the average URR for each World Bank income group to which the country belongs across the five markets studied. Moldova's URR in the European market for food and feed products fluctuated between 0 and 0.064 during the period of 2010 – 2022 with an average of 0.001, which means that for every US$ 1 billion of imports from Moldova to the EU, there was about one rejection. This performance is admirable and is better than that of Georgia as Georgia's URR for food and feed products for the European market fluctuated between 0 and 0.214 during the period of 2010 – 2022 with an average of 0.0682, which means that for every US$ 100 million of imports from Georgia to the EU, there were about seven rejections. While this rate is low, it's important for Georgia to intesify its efforts to improve its compliance with the European food safety and quality regulations. There is no data for Romania's URR in the European market. For the Chinese market, Romania's URR is low and close to zero. However, in both the Japanese and American markets, it has fluctuated and has sometimes been higher than the average URR for high income countries indicating that Romania should focus on lowering its URR in those two markets.

# Relative rejection rate indicator:

The bar charts in **Figure 14** display the distribution of the Relative Rejection Rate (log ratio) across markets for the exporting countries (Moldova and Georgia) for food and feed (HS 1-23) exports in 2022. The Relative Rejection Rate (RRR) shown (log ratio) is the natural logarithm of the ratio of a country's share of total rejections to share of total imports. The indicator provides a convenient measure of the performance of countries relative to one another in a year or over a period. A higher RRR (log ratio) for a country implies poorer performance with regards to food safety and quality standards in that market relative to the other markets.

**FIGURE 14:** RRR FOR FOOD AND FEED HS 1-23 EXPORTS FOR MOLDOVA AND GEORGIA IN 2022

**MOLDOVA**




**GEORGIA**

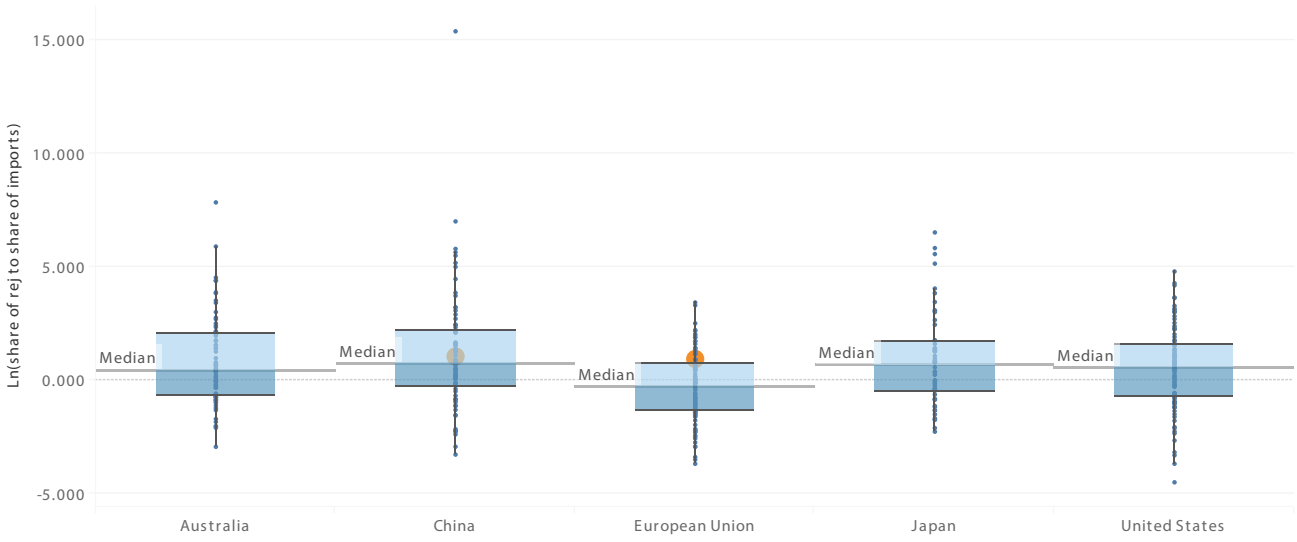


**TABLE 7:** RRR FOR FOOD AND FEED HS 1-23 EXPORTS IN 2022

**MOLDOVA**

| Australia | | China | | EU | | Japan | | United States | |
|---|---|---|---|---|---|---|---|---|---|
| Median | Moldova | Median | Moldova | Median | Moldova | Median | Moldova | Median | Moldova |
| 0.396 | **N/A** | 0.717 | **2.337** | -0.275 | **-1.199** | 0.687 | **N/A** | 0.528 | **N/A** |

**GEORGIA**

| Australia | | China | | EU | | Japan | | United States | |
|---|---|---|---|---|---|---|---|---|---|
| Median | Georgia | Median | Georgia | Median | Georgia | Median | Georgia | Median | Georgia |
| 0.396 | **N/A** | 0.717 | **1.062** | -0.275 | **0.949** | 0.687 | **N/A** | 0.528 | **N/A** |

As shown in **Figure 14** and **Table 7,** Moldova's RRR for the Chinese market is a lot higher than in other markets, which points to the country's poorer performance in terms of compliance with the Chinese food safety and quality standards compared to other markets. Similarly, while Georgia performs better in that market than Moldova, it still performs worse on average than other countries. While Georgia performed poorly in the European market (Median = -0.275 and Georgia's RRR = 0.949) compared to other countries in that market, Moldova can be commended for an admirable performance in that market. Therefore, Georgia should focus on improving its compliance with food safety regulations in the EU market and Moldova on improving its compliance with the Chinese food safety and quality regulations. There is currently no available RRR data for Romania for 2022. Thus, it has not been included in this analysis.

# Relationship between the natural logarithm of share of rejections to the natural logarithm of share of imports

The scatterplot in **Figure 15** presents the relationship between the natural logarithm of share of rejections to the natural logarithm of share of imports for the food and feed (HS 1-23) products for 2022 for a given market. In the scatterplot, exporting countries are identified using ISO two-letter abbreviation codes. In addition, the countries above the 45-degree line are considered worse performers {i.e. ln(share of rejections) is greater than ln(share of imports)} than those below the line, as their ln(share of rejections) is less than ln(share of imports).

**FIGURE 15:** RELATIONSHIP BETWEEN THE NATURAL LOGARITHM OF SHARE OF REJECTIONS TO THE NATURAL LOGARITHM OF SHARE OF IMPORTS FOR FOOD AND FEED HS 1-23 EXPORTS IN 2022

**EU market**


The scatterplot demonstrates that Moldova performed better on average than the other countries in the EU market in 2022, as its log of rejections was less than its log of share of imports. Georgia performed worst than Moldova in that market. However, the situation is reversed in the Chinese market with Georgia slightly outperforming Moldova in 2022. However, as both countries were located above the 45-degree line, they are considered on average worse performers that the rest of the countries in the Chinese market. This is no data available currently for the other markets.

# Reasons for rejection – comparative analysis:

**TABLE 8:** FREQUENCY OF REASONS FOR REJECTION (NUMBER & %) OF MOLDOVAN FOOD & FEED HS 1-23 EXPORTS TO THE 5 MARKETS DURING 2010 - 2022

| Moldova | Australia | | China | | EU | | Japan | | US | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Numbers | % | Numbers | % | Numbers | % | Numbers | % | Numbers | % | Numbers | % |
| Additive | 0 | 0% | 0 | 0% | 3 | 5% | 1 | 50% | 33 | 47% | 37 | **24%** |
| Adulteration / missing document | 0 | 0% | 2 | 9% | 3 | 5% | 0 | 0% | 6 | 9% | 11 | **7%** |
| Bacterial contamination | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | **0%** |
| Heavy metal | 0 | 0% | 0 | 0% | 1 | 2% | 0 | 0% | 0 | 0% | 1 | **1%** |
| Hygienic condition / controls | 0 | 0% | 0 | 0% | 6 | 10% | 0 | 0% | 0 | 0% | 6 | **4%** |
| Labeling | 6 | 100% | 1 | 5% | 0 | 0% | 0 | 0% | 14 | 20% | 21 | **13%** |
| Mycotoxin | 0 | 0% | 0 | 0% | 1 | 2% | 0 | 0% | 0 | 0% | 1 | **1%** |
| Other contaminants | 0 | 0% | 1 | 5% | 28 | 49% | 1 | 50% | 0 | 0% | 30 | **19%** |
| Other microbiological contaminants | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | **0%** |
| Others | 0 | 0% | 3 | 14% | 9 | 16% | 0 | 0% | 0 | 0% | 12 | **8%** |
| Packaging | 0 | 0% | 14 | 67% | 1 | 2% | 0 | 0% | 0 | 0% | 15 | **10%** |
| Pesticide residues | 0 | 0% | 0 | 0% | 4 | 7% | 0 | 0% | 3 | 4% | 7 | **4%** |
| Veterinary drugs residues | 0 | 0% | 0 | 0% | 1 | 2% | 0 | 0% | 14 | 20% | 15 | **10%** |
| Total | **6** | 100% | **21** | 100% | **57** | 100% | **2** | 100% | **70** | 100% | **156** | **100%** |

**TABLE 9:** FREQUENCY OF REASONS FOR REJECTION (NUMBER & %) OF ROMANIAN FOOD & FEED HS 1-23 EXPORTS TO THE 5 MARKETS DURING 2010 - 2022

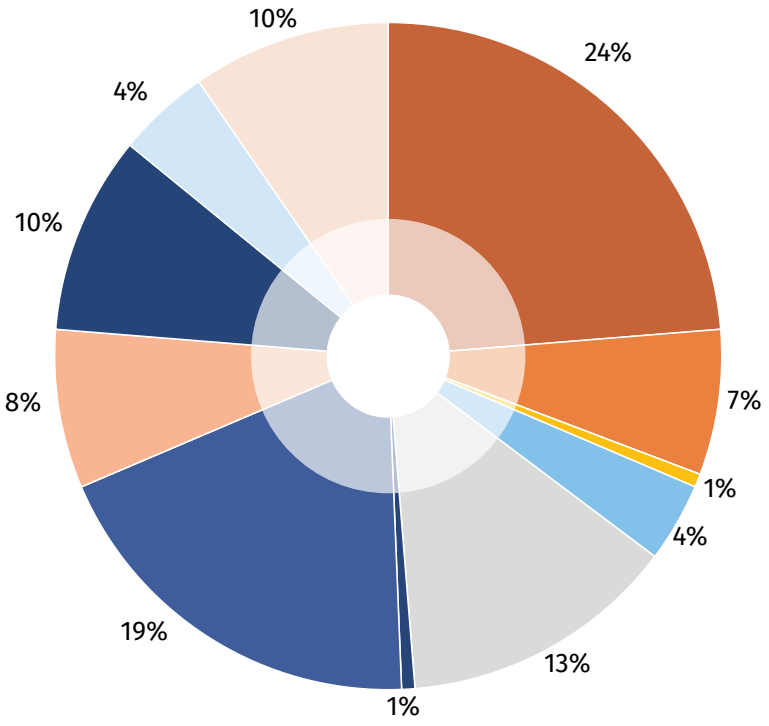
| Romania | Australia | | China | | EU | | Japan | | US | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Numbers | % | Numbers | % | Numbers | % | Numbers | % | Numbers | % | Numbers | % |
| Additive | 0 | 0% | 7 | 44% | 30 | 14% | 6 | 55% | 3 | 1% | 46 | **9%** |
| Adulteration / missing document | 0 | 0% | 0 | 0% | 10 | 5% | 0 | 0% | 47 | 18% | 57 | **11%** |
| Bacterial contamination | 0 | 0% | 0 | 0% | 73 | 34% | 0 | 0% | 0 | 0% | 73 | **14%** |
| Heavy metal | 0 | 0% | 4 | 25% | 19 | 9% | 1 | 9% | 0 | 0% | 24 | **5%** |
| Hygienic condition / controls | 0 | 0% | 2 | 12% | 5 | 2% | 0 | 0% | 12 | 4% | 19 | **4%** |
| Labeling | 7 | 100% | 0 | 0% | 5 | 2% | 0 | 0% | 206 | 77% | 218 | **42%** |
| Mycotoxin | 0 | 0% | 0 | 0% | 11 | 5% | 1 | 9% | 0 | 0% | 12 | **2%** |
| Other contaminants | 0 | 0% | 0 | 0% | 16 | 8% | 3 | 27% | 0 | 0% | 19 | **4%** |
| Other microbiological contaminants | 0 | 0% | 0 | 0% | 4 | 2% | 0 | 0% | 0 | 0% | 4 | **1%** |
| Others | 0 | 0% | 0 | 0% | 24 | 11% | 0 | 0% | 0 | 0% | 24 | **5%** |
| Packaging | 0 | 0% | 1 | 6% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | **0%** |
| Pesticide residues | 0 | 0% | 2 | 13% | 10 | 5% | 0 | 0% | 0 | 0% | 12 | **2%** |
| Veterinary drugs residues | 0 | 0% | 0 | 0% | 6 | 3% | 0 | 0% | 0 | 0% | 6 | **1%** |
| Total | **7** | 100% | **16** | 100% | **213** | 100% | **11** | 100% | **268** | 100% | **515** | **100%** |

**TABLE 10:** FREQUENCY OF REASONS FOR REJECTION (NUMBER & %) OF GEORGIAN FOOD & FEED HS 1-23 EXPORTS TO THE 5 MARKETS DURING 2010 - 2022

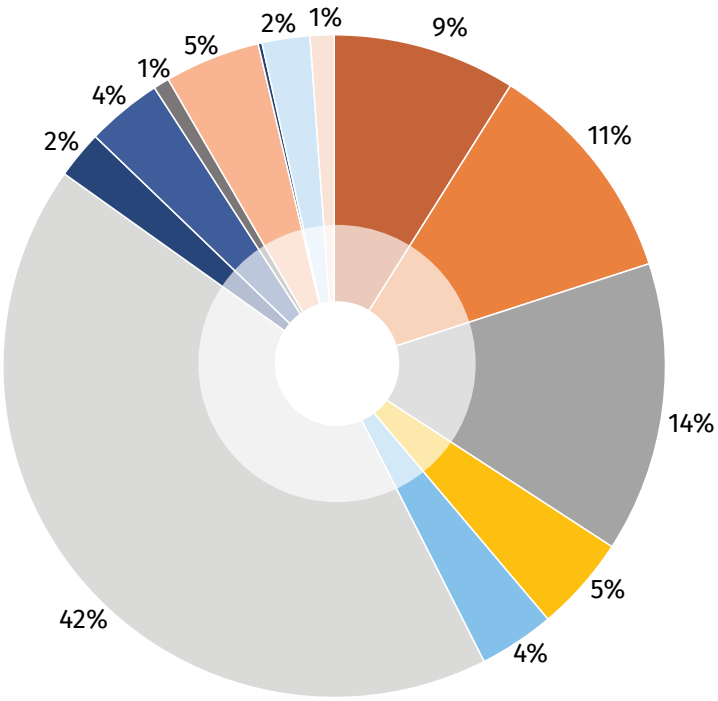
| Georgia | Australia | | China | | EU | | Japan | | US | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Numbers | % | Numbers | % | Numbers | % | Numbers | % | Numbers | % | Numbers | % |
| Additive | 0 | 0% | 11 | 21% | 18 | 13% | 0 | 0% | 15 | 11% | 44 | **14%** |
| Adulteration / missing document | 0 | 0% | 1 | 2% | 1 | 1% | 0 | 0% | 32 | 25% | 34 | **10%** |
| Bacterial contamination | 0 | 0% | 0 | 0% | 2 | 1% | 0 | 0% | 2 | 2% | 4 | **1%** |
| Heavy metal | 0 | 0% | 2 | 4% | 1 | 1% | 0 | 0% | 0 | 0% | 3 | **1%** |
| Hygienic condition / controls | 0 | 0% | 1 | 2% | 2 | 1% | 0 | 0% | 39 | 30% | 42 | **13%** |
| Labeling | 5 | 100% | 0 | 0% | 0 | 0% | 0 | 0% | 36 | 28% | 41 | **13%** |
| Mycotoxin | 0 | 0% | 0 | 0% | 100 | 72% | 0 | 0% | 0 | 0% | 100 | **31%** |
| Other contaminants | 0 | 0% | 1 | 2% | 3 | 2% | 1 | 100% | 1 | 1% | 6 | **2%** |
| Other microbiological contaminants | 0 | 0% | 0 | 0% | 6 | 4% | 0 | 0% | 0 | 0% | 6 | **2%** |
| Others | 0 | 0% | 2 | 4% | 5 | 4% | 0 | 0% | 3 | 2% | 10 | **3%** |
| Packaging | 0 | 0% | 33 | 65% | 0 | 0% | 0 | 0% | 1 | 1% | 34 | **10%** |
| Pesticide residues | 0 | 0% | 0 | 0% | 1 | 1% | 0 | 0% | 0 | 0% | 1 | **0%** |
| Veterinary drugs residues | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | **0%** |
| Total | **5** | 100% | **51** | 100% | **139** | 100% | **1** | 100% | **129** | 100% | **325** | **100%** |

**FIGURE 16**: FREQUENCY OF REASONS FOR REJECTION OF FOOD & FEED HS 1-23 EXPORTS FOR MOLDOVA, ROMANIA, AND GEORGIA DURING 2010 - 2022

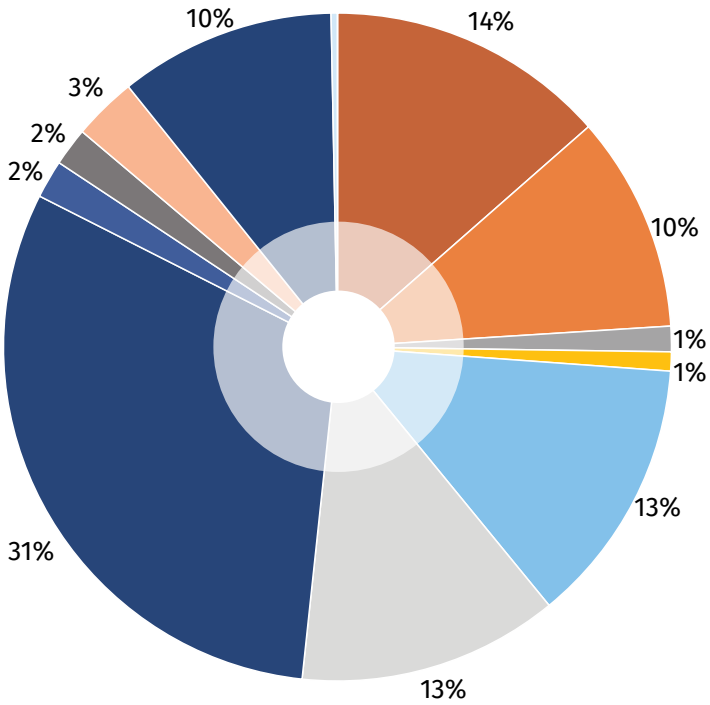
MOLDOVA




ROMANIA



GEORGIA




Reasons for Rejections

- Additive
- Adulteration/missing document
- Bacterial contamination
- Heavy metal
- Hygienic condition/controls
- Labeling
- Mycotoxins
- Other contaminants
- Others
- Others microbiological contaminants
- Packaging
- Pesticide residues
- Veterinary drugs residues

According to **Tables 8 - 10** and **Figure 16**, in the Chinese market, the percentage of rejections due to **packaging** is very high for Moldova and Georgia, at 67% and 65% respectively. In the European market, the reasons for rejection for the three countries were quite diverse with Moldova struggling with rejections due to **other contaminants** (49%), Romania due to **bacterial contamination** (34%), and Georgia due to **mycotoxins** (72%). In the American market, all three countries have a high rate of rejections due to **labeling** (between 20 and 77%). Romania has the highest rate at 77% compared to the other two countries. This should encourage Romania and the rest of the countries to make explicit and concerted efforts to reduce their border rejections which are due to labelling, especially in the American market.

# RECOMMENDATIONS

In the light of the global pandemic and the severe effects of climate change on agricultural value chains that have been observed in the last few years, the relevance of quality and safety standards has become increasingly evident, highlighting the need for adequate infrastructure and internationally recognized conformity assessment services. It has become imperative for Moldova to continue to improve its quality infrastructure at a national level in order to ensure that European and international market requirements are met and that producers can prove that their products comply with international standards and technical regulations through the entire value chain from production to packaging, conservation, transport, export procedures, etc. Based on the analysis of the border rejection data for Moldovan food and feed exports as well as consultation with national stakeholders, public and private institutions, and development agencies, several recommendations can be made:

## Strengthen the Quality Infrastructure System:

» **Assessing standards harmonization:** Using the SCA tool to ascertain the main export product groups in Moldova that have encountered a high rate of rejection can prove beneficial. This analysis aims to evaluate the degree of harmonization between the current national standards with the corresponding international standards for those product groups.

» **Online trade help desks:** Help desk services, that support SMEs attempting to export specific products to global markets, would be highly beneficial. This initiative would assist SMEs in complying with continuously evolving regulations. For Moldova and other Eastern European countries, an online data repository which contains current regulations, import conditions, microbiological indictors and any other pertinent information necessary for food exporters of the main markets to which the Eastern European countries export their food and feed products already exists. Indeed, through the new platform, Eastern Partnership (EaP) Trade Helpdesk[32], exporters, importers, producers are able to check information on market access, trade procedures and contacts of potential partners in EaP, as well as the EU. Information is available in several languages, including English, Romanian, Georgian, Russian, Ukrainian, and Azerbaijani. Support could be provided to ensure that the information available on the platform is complete, accurate and up-to-date and contains current regulations, import conditions, microbiological indictors and any other pertinent information necessary for

[32] Eastern Partnership Trade Helpdesk. https://eap.tradehelpdesk.org/ro

food exporters. A similar online platform could be developed in the Plant Protection field to detail the ecosystem for enterprises and agencies to access and check information about the latest regulations, processes, especially the guidelines for compliance to award PUC, PHC, etc. Finally, it is worth noting that the Ministries of Agriculture, Regional Development and Environment could benefit from establishing close collaborations with quarantine agencies in the EU, the US, and other key markets to ensure that the agricultural product regulations are effectively communicated to producers.

» **Plant protection and quarantine law:** There is a need to verify that good agricultural practices are being observed and to detect fraudulent practices, such as the use of unauthorized veterinary drugs and prohibited pesticides. It'd be important to check how well Moldovan Law on Plant Protection and Phytosanitary Quarantine Law Number 228[33] is currently being implemented and to support the government in addressing any gaps found.

» **Pesticide residue monitoring plan:** The Ministry of Agriculture, Regional Development and Environment could be supported to regularly monitor and publish the actual maximum residue limits of targeted countries for pesticides and food contaminants in order to ameliorate pesticide management. This information would need to be circulated to farmers in a timely fashion through various channels (workshops, digital platform, etc.). The Ministries and other agencies could provide assistance in developing and applying effective plant protection technologies and control measures to ensure that high and constant quality of pesticides are available for effective plant protection. They could also introduce and maintain a risk-based pesticide residue monitoring plan, which covers all residues which are not authorized in the export markets and annually publish the monitoring results together with the supporting internal quality control data. UNIDO could also support the review of control measures according to the EU requirements.

» **Addressing regulatory changes and future standards:** Apart from hygiene factors, a significant number of rejections came from regulatory changes. This does not indicate a lack of compliance as an issue but rather serves as evidence of the ever-evolving nature of trade relations. To better equip exporting countries in complying with potential new standards and regulations, UNIDO could incorporate a projection of forthcoming standard changes by harnessing the power and knowledge found using innovative digital solutions and gathering insights stemming from mining large trade data sets. For Moldova, UNIDO could facilitate the implementation of GRP to support government institutions often overwhelmed by ongoing changes to food safety regulations. Consequently, as these institutions are responsible for issuing the regulations that agri-SMEs must comply with, this would result in better coordination between the central government and local authorities regarding food safety and quality regulations. It is important to note that the current analysis of the SCA tool does not encompass voluntary standards, such as sustainability and traceability standards. However, it is essential to recognize that these standards, particularly in terms of traceability and sustainability, have the potential to evolve into future regulations. For instance, lawmakers in the European Parliament and the European Council reached an agreement on regulations supporting deforestation-free supply chains. The objective is to ensure that products imported to or exported from EU markets no longer contribute to global deforestation and forest degradation. The European Union Deforestation-Free Regulation (EUDR) took effect on 29 June 2023, after formal adoption by the EU Council, granting operators and traders an 18-month period to implement the new rules, with smaller enterprises receiving a longer implementation period.[34] The regulation sets mandatory due diligence rules for all traders exporting commodities, such as palm oil, cattle, wood, coffee, cocoa, rubber, soy and certain derived products like chocolate and specific palm oil based derivatives, from the EU market.[35] As multiple countries including EU member states and non-EU countries, operators, and traders have expressed concerns that they would not be able to comply with the rules by the end of 2024, the European Parliament has agreed on 14 November 2024 to postpone the application date of the deforestation regulation by one year. This means that large trades would need to comply with the regulation by 30 December 2025, whereas micro and small enterprises would have until 30 June 2026[36]. Additionally, on 31 July 2023, the European Commission adopted the European Sustainability Reporting Standards (ESRS) for use by all companies subject to the Corporate Sustainability Reporting Directive (CSRD). As the ESRS consist of mandatory requirements and principles for companies to comply with and report on sustainability matters, covering a wide range of environmental, social, and governance

[33] Food and Agriculture Organization of the United Nations. Law No. 228 "On plant protection and phytosanitary quarantine". Republic of Moldova (National level). FAO. https://www.fao.org/faolex/results/details/es/c/LEX-FAOC179371/

[34] European Parliament. (2022). *Deal on new law to ensure products causing deforestation are not sold in the EU*. https://www.consilium.europa.eu/en/press/press-releases/2023/05/16/council-adopts-new-rules-to-cut-deforestation-worldwide/

[35] European Council. (2023). *Council adopts new rules to cut deforestation worldwide.* https://www.consilium.europa.eu/en/press/press-releases/2023/05/16/council-adopts-new-rules-to-cut-deforestation-worldwide/

[36] European Parliament. (2024). EU deforestation law: Parliament wants to give companies one more year to comply. https://www.europarl.europa.eu/news/en/press-room/20241111IPR25340/eu-deforestation-law-parliament-wants-to-give-companies-one-more-year-to-comply

(ESG) issues, it is vital for countries to start aligning their processes with these sustainability regulations. Even though the ESRS currently primarily apply to large EU-based companies, this may change in the future and directly impact agri-SMEs in Moldova seeking to export their products to the EU market.

## Enhance industry compliance, competitiveness and sustainability:

» **Reasons for rejection:** As reasons for the rejection of Moldovan food and feed exports are diverse, Moldova should first focus on eliminating the prevailing causes of rejection at the border of the European market over the period of 2010 to 2022, which were contaminants (49%), others (16%), and hygienic condition/controls (10%). Over the same period, the most common reasons for the rejections of Moldovan food and feed exports in the American market were additives (47%), labeling (20%), and veterinary drugs residues (20%).

» **Compliance with labeling requirements:** Labeling represents 10% of the causes of rejection of exports of Moldovan food and feed products and a fifth of the reasons (20%) for rejection in the US market. Labeling is the most important way to present information about a product to a consumer. Labels can be mandated from governments and will include basic information about a product, such as the list of ingredients, net quantity, country of origin, name of manufacturer/importer, expiry date, etc. Labels may also include health and safety information, such as instructions for safe handling, storage conditions, nutritional value, etc.[37] For the nutritional value, it is recommended to use the nutritional labeling system with a colored logo which allows consumers to know at a glance the nutritional value of food. This is done in order to align with other European countries' requirements[38]. The European Action Plan for Food and Nutrition Policy has invited countries to develop and implement front-of-package labelling systems which are easy to understand and provide consumers with a complementary interpretation of nutritional information. Some labeling issues are directly related to food safety and food that will have incomplete or incorrect labels will be rejected at the border. An additional issue with labeling is that importing countries don't always have clearly prescribed labeling requirements in their legislations so products that don't have an expiry date/best before date can end up entering their markets. The additional challenge is that if such requirements were to be specified, from the exporting country's perspective having to comply with labeling standards that differ across national markets means that suppliers will have to produce and pay for the costs of having different labels. These increased costs would prevent some foreign producers from competing in certain markets.

» **Improved access of smallholders to financial support and services:** The availability of finance for agricultural producers, including smallholders and family farms, has seen slight improvement in recent years as a result of various initiatives implemented by the government with support from international organizations and donors. However, the majority of farms still face challenges in accessing adequate financing. These challenges primarily stem from limited collateral options, a lack of long-term loans, a scarcity of credit access facilitation instruments, such as loan-guarantee funds, and high interest rates averaging 15 to 20% annually, despite a low annual inflation rate of below 5% in recent years. It is imperative to enhance the accessibility of viable financial services for smallholders. The agricultural sector, specifically small-scale farmers, currently faces significant limitations in terms of credit accessibility and affordability. Additionally, the high interest rates deter farmers from seeking loans from banks. One potential solution to address the lack of finance for smallholders is the provision of subsidies to cover interest rates. Although these subsidies already exist, they are currently inaccessible to smallholders[39].

» **Agritourism marketing:** To improve the ability of the agricultural sector to enter the international market, it is advisable to strengthen the links between the various actors involved in the production, processing and distribution of agricultural products with the actors of other sectors, mainly the food industry and tourism sectors. For instance, the usual manner of marketing of agricultural products and partnerships of the farms was through roadside sales, selling to wholesalers, processors, retailers, or in some cases direct sales at the markets. However, by transforming farms into agritourism facilities, it allows agritourism farms to sell their products at the farms, through serving at the restaurants, the meals at the accommodation units, and direct sale of the fresh products to

[37] United Nations Economic and Social Commission for Asia and the Pacific. Facilitating Compliance to Food Safety and Quality for Cross-Border Trade. https://www.unescap.org/sites/default/files/Facilitating Compliance to Food safety and quality for cross-border trade guide.pdf

[38] World Health Organization. (2017). La France est l'un des premiers pays de la Région a recommander l'utilisation d'un système d'étiquetage nutritionnel dote d'un logo en couleur. https://sante.gouv.fr/prevention-en-sante/preserver-sa-sante/nutrition/nutri-score/article/nutri-score-un-etiquetage-nutritionnel-pour-favoriser-une-alimentation

[39] Food and Agriculture Organization of the United Nations (2019). Smallholders and family farms in the Republic of Moldova. Regional TCP on Empowering smallholders and family farms (TCP/RER/3601). Country study report. https://openknowledge.fao.org/server/api/core/bitstreams/c50d9142-2204-4d95-bf4c-d1c5c069fb2c/content

the visitors, etc. Agritourism represents a viable avenue for agricultural farms in Moldova to both diversify their operations and mitigate the risks they face by generating supplementary income. Furthermore, agritourism is crucial for fostering the multifunctional and sustainable growth of farmer households, as it not only helps preserve the rural landscape but also contributes to the conservation of agricultural ecosystems' biodiversity[40].

» **Support to Cooperatives:** Small-scale farming is a prevailing model in Moldova, and small farms, including family farms, have a critical role to play in the country's agriculture, rural development, and overall economy. These smallholders and family farms are responsible for generating more than 62% of the total volume of agricultural produce in the country, thereby making a fundamental contribution to both food production and food security in Moldova. Plant production holds the dominant position in the agricultural production structure of the country, accounting for 74% of the total agricultural production in 2017, with approximately 60% derived from smallholders and family farms. These small farms also hold the largest share in livestock production, contributing to 95% of total milk production, 62% of livestock and poultry production, and 56% of egg production[41].

Cooperation among smallholder farmers can lead to economies of scale, making it more appealing for buyers to engage with them and enhancing their bargaining power in contractual arrangements. This is particularly significant given the small size and fragmented nature of these farms. Encouraging farmers to collaborate and establish their own processing and marketing channels can further strengthen their bargaining positions and improve access to input and output markets, financing, and storage facilities, which have been identified as crucial for successful marketing. Cooperatives serve as a vital economic and social necessity, offering small-scale farmers a viable means to compete with larger entities and increase their bargaining power in relation to suppliers and agricultural markets and offering solutions to the challenges faced by small-scale farmers, such as low productivity, limited investment capacity, and inadequate market access. Currently, the main activities coordinated by the cooperatives are related to trainings, input purchasing, and marketing activities. However, surveys filled in by smallholders express interest in having support from the cooperatives for the following activities: lobbying, production, storage, transportation, financing, packing and processing.

Support could be given to cooperatives in establishing a permanent platform for communication and cooperation among agricultural producers, science and extension services, and political structures. In addition, it may be useful to set up a Cooperative Development Agency as has been successfully done in other countries. The government could also get involved by improving and adjusting the legal and regulatory framework to the real needs of smallholders. It could introduce a flat tax in agriculture, ensure a fairer distribution of subsidies, develop and enhance the advisory services, etc.[42]

» **Digital Solutions:** Through the utilization of technology, production processes can be streamlined, leading to improved efficiency and automation. This, in turn, facilitates the effective utilization of resources and cost reduction. Technology plays a pivotal role in accelerating development and offering practical and feasible solutions. For farmers, the advent of new technology presents an invaluable opportunity to acquire information regarding prices, demand patterns, and consumer preferences across domestic and international markets. Websites and agricultural platforms enable farmers to make informed decisions regarding crop selection and market access, while also providing a means to receive customer feedback and enhance production capabilities. For instance, thanks to funding from the Swiss Agency for Development and Cooperation, Helvetas launched the OPTIM project in Moldova with the aim of supporting smallholder farmers and agricultural workers in adopting modern, efficient agricultural practices, and new production technologies. Helvetas supported Euroalun (alun means hazelnut in Romanian), a local agricultural company known for its experience in hazelnut orchard and seedling materials. With the assistance of Helvetas, Euroalun has successfully developed a comprehensive digital solution that serves multiple purposes, encompassing the enhancement of farm management and production, broader system integration, and data analysis. All of these features and more are encapsulated within the revolutionary iFarms application. Having been launched in 2021, this app signifies a profound shift in farm management practices, as it seamlessly integrates advanced technologies with conventional farming methods. The iFarms application boasts an extensive range of sophisticated tools, including precision

[40] Galina L, Maria C, Oxana C, J. *Agritourism in the Republic of Moldova and Tourism Product cost – A review.* Scientific papers series management, Economic Engineering in Agriculture and Rural Development. Vol. 23, Issue 2, 2023. https://managementjournal.usamv.ro/pdf/vol.23_2/Art47.pdf

[41] Food and Agriculture Organization of the United Nations (2019). *Smallholders and family farms in the Republic of Moldova.* Regional TCP on Empowering smallholders and family farms (TCP/RER/3601). Country study report. https://openknowledge.fao.org/server/api/core/bitstreams/c50d9142-2204-4d95-bf4c-d1c5c069fb2c/content

[42] Anatolie I, Alexandru S, Eugenia L (2017, November 16). *Development of coopeatives in the Republic of Moldova.* Munich Personal RePEc Archive. MPRA. https://mpra.ub.uni-muenchen.de/85100/1/MPRA_paper_85100.pdf

agriculture, remote sensing, data analytics, and advisory services. By capitalizing on the data obtained from a plethora of sources such as sensors, cameras affixed to automated weather stations, insect traps, ground control points, and other Internet of Things (IoT) devices, farmers can acquire immediate insights into the state of their soil, crop growth, disease prevalence, and weather patterns. Furthermore, this application offers invaluable advice on the appropriate courses of action, encompassing factors such as timing, quantities, and exact locations. All of this data is effortlessly accessible and reviewable through a user-friendly mobile and/or desktop application, empowering farmers to make well-informed decisions based on the monitoring of 35 key features in real-time[43].

## Promote a conducive policy environment and culture for quality:

- **Promotion of local agricultural products:** To promote rural income diversification in several areas, such as rural tourism or short value chains, by conducting tailor-made trainings and networking workshops which will teach farmers how to promote authentic products, specifically those produced by rural women and smallholders. These types of programs can support some of the smallholders and family farms while improving their knowledge of EU food safety standards, good agricultural practices, good hygiene practices, and the Hazard Analysis and Critical Control Point (HACCP) methodology.
- **Quality awareness campaigns:** Addressing the lack of awareness of the importance of quality and food safety among most fruit and vegetable producers by conducting awareness and informational campaigns on standards and national quality infrastructure. These awareness campaigns should target the general public as well as government institutions. Indeed, government institutions also need to be made aware of the benefits of developing a culture of quality and improving the national quality infrastructure in order to increase the competitiveness of Moldovan food and feed products.
- **Consumer awareness of food safety and brand protection:** Consumers' awareness of food safety is a strong driving force that pushes the advancement of safety standards. Consumers rightfully expect that every food item they purchase will adhere to stringent safety and quality measures. Their continued satisfaction and loyalty to a product is evident through repeat purchases. Consequently, food manufacturers and producers hold a vested interest in safeguarding their brand reputation by consistently delivering products that meet consumers' expectations of safety and quality. This necessitates the meticulous implementation of appropriate controls that oversee the entire spectrum of food manufacturing and processing encompassing raw ingredient utilization through to the production of finished goods[44].

[43] Laura A, Bojan K (2024, May 13). *Transforming Moldova's Agriculture by Leveraging Digital Solutions.* Helvetas. https://www.helvetas.org/en/switzerland/how-you-can-help/follow-us/blog/agriculture-and-nutrition/Transforming-Moldovas-Agriculture-by-Leveraging-Digital-Solutions

[44] The Food and Agriculture Organization (2020). *Consumers and food safety: A food industry perspective.* FAO. https://www.fao.org/3/v2890t/v2890t05.htm

# ANNEX:

## CONTEXTUALIZING TRADE-RELATED STANDARDS

Technical regulations and standards are increasingly prevalent and continuously evolving in the international trade of food and non-food (industrial) products. Moreover, there is evidence that many developing countries face challenges in complying with the safety and quality requirements that these regulations and standards lay down. Since 2008, UNIDO has regularly collected evidence about trade related challenges and their evolution over time, particularly in the area of compliance with requirements, such as quality, certification, and labelling, set by international markets.

In their efforts to improve compliance, the challenge for national governments and donors is to allocate scarce financial and technical resources amongst a plethora of capacity building needs. There is, therefore, a need to identify where the most acute compliance challenges are faced—in a trade context this means identifying the products and markets with the highest rates of non-compliance—thus recording rejections. In this context, the Standards Compliance Analytics (SCA) tool can be used to facilitate the use of rejection data to identify the key compliance challenges faced by exporting countries and thereby enhance targeting of investments in building relevant compliance capacities. The SCA tool supports the assessment of the overall impact of rejection on export performance of countries of origin and estimates their compliance capacity by interpreting rejection trends together with additional key development, production and trade-related indicators. Lastly, the SCA tool allows for the comparison of countries' trade compliance performances in different markets and related to specific product groups.

Finally, information on rejection can inform policy and technical assistance to navigate and focus efforts in addressing compliance issues in a more effective and targeted manner. Deeper understanding of trade compliance challenges contributes to better preparedness of exporting countries to comply with export market requirements and eventually less rejection in the long term. As a result, the economic losses due to rejection would be avoided while reputational risks due to large scale rejections can be averted.

The SCA tool compiles data from several data sources to cover five major markets including:

» **China**: The Chinese rejection data records for agri-food products are published by the General Administration of Customs (GAC). The data includes records of rejected consignments under HS codes 1 to 24 that do not meet Chinese regulatory requirements.

» **United States:** The US food and feed border rejection data is obtained from the US Food and Drug Administration's (USFDA) Operational and Administrative System for Import Support (OASIS), an automated system for processing and making admissibility determinations for shipments of imported products that come under the jurisdiction of the USFDA. The USFDA's website also contains a description of the variables in the rejection data (Import Refusal Report). The data initially contains both food, feed, and non-food rejections. However, the non-food rejections are excluded as the current focus is the analysis of food and feed rejections.

» **Australia:** The Australian food and feed border rejection data is obtained from the Australian Department of Agriculture, Water and the Environment. The data includes label and visual rejections, among other rejections. Imported food is inspected through a program known as the Imported Food Inspection Scheme (IFIS). The scheme inspects imported food to check if it meets Australian requirements for public health and safety and if it is compliant with Australia's food standards. A risk-based approach is taken when regulating imported food. Specifically, when a consignment of imported food has been referred for inspection, the inspection will involve a visual and label assessment and may also include sampling the food for the application of analytical tests. Under the IFIS, the Minister classifies food as either risk food or surveillance food. Risk food is food that has been assessed by the Food Standards Australia New Zealand (FSANZ) as posing a medium to high risk to public health, thereby requiring stricter border controls. Surveillance food is considered to pose a low risk to human health and safety.

» **Japan:** The Japanese food and feed border rejection data is obtained from the Japan's Ministry of Health, Labor and Welfare (MHLW). The MHLW tracks and controls import consignments that violate the Food Sanitation Law to secure the "safety of diet" of Japanese people.

» **European Union:** The food and feed border rejection data is obtained directly from the officials responsible for the EU's Rapid Alert System for Food and Feed (RASFF). RASFF provides a platform for the exchange of information between EU Member States on measures taken in response to food and feed products that pose an immediate risk to human health, both in the EU internal market and with respect to imports from Third Countries. The data initially contains both food, feed, and non-food (food contact material) rejections. However, the non-food rejections are excluded as the current focus is the analysis of food and feed rejections. It's important to note that after 2020, the United Kingdom's rejections are no longer included in the EU's rejection data set.

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