



UCD Institute of Food and Health



THE IRISH FRUIT AND VEGETABLE SYSTEM: A SUMMARY OF PRODUCTION, TRADE AND CONSUMPTION.

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SUMMARY

- Improving the fruit and vegetable system in Ireland could bring about multiple benefits for sustainable food and health.
- Fruit and vegetable consumption in Ireland needs to increase considerably to meet the WHO recommended intake of 400g/person/day (by approximately 40% in adults, 88% in adolescents and 80% in children).
- Estimated fruit and vegetable supply is insufficient to meet the WHO recommended intake.
- Policies addressing food waste, investment and research into domestic horticultural expansion and climate mitigation in countries supporting the supply chain could aid in future-proofing supply.
- To move towards a more sustainable and equitable fruit and vegetable system there is a need for harmonised data to provide a clear picture of the current system, to evaluate policies and to monitor policy-driven change.



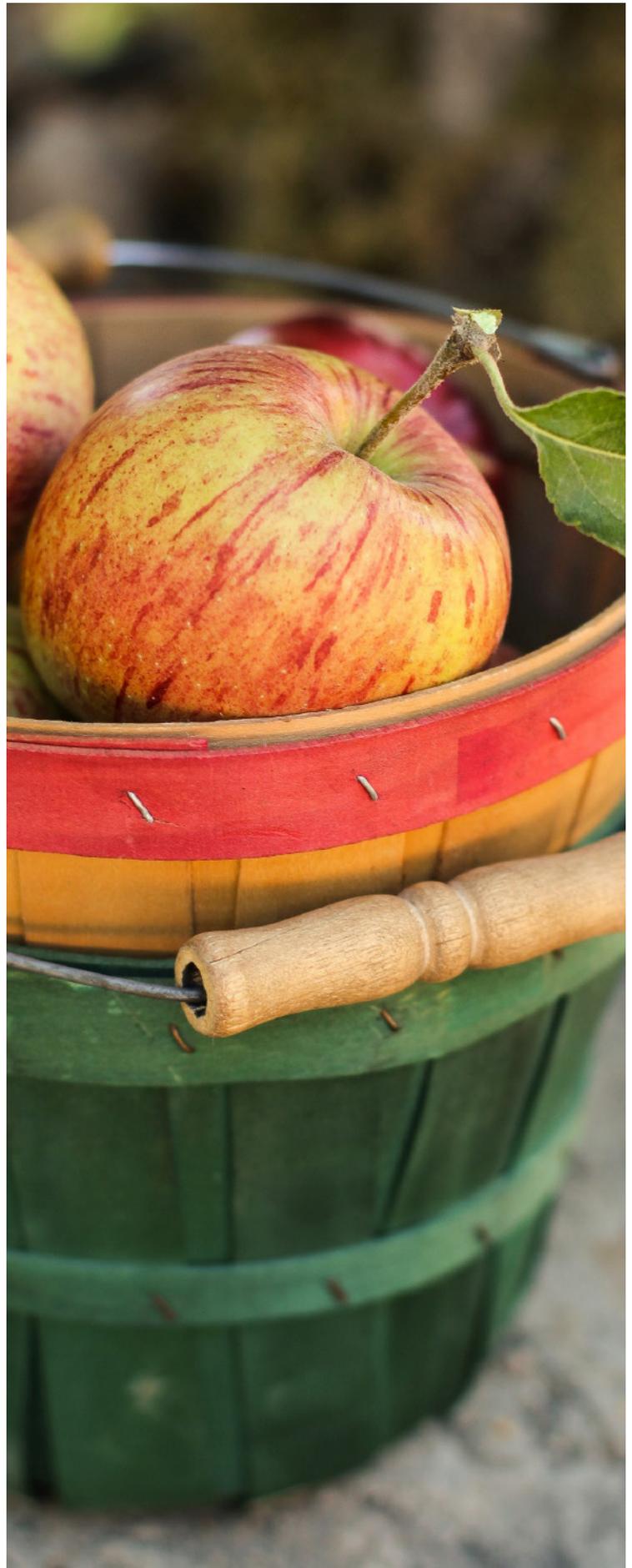
INTRODUCTION

Improving the fruit and vegetable system in Ireland could bring about multiple benefits for sustainable food and health.

Improving the fruit and vegetable system in Ireland could bring about multiple benefits for sustainable food and health. In the International Year of Fruit and Vegetables 2021, the Food and Agriculture Organisation of the United Nations (FAO) advocated a holistic and comprehensive approach to transforming the fruit and vegetable sector¹, linking supply, demand, trade, food prices and socio-economic development and promoting strong linkages between system actors.

Understanding the current fruit and vegetable system is essential in monitoring the transformation to a more sustainable and equitable one.

This brief aims to provide a summary of the current fruit and vegetable system in the Republic of Ireland (ROI) from production to consumption.



WHAT ARE FRUIT AND VEGETABLES?

Definitions used for fruits and vegetables can vary depending on the context. Broadly, they are defined as edible parts of plants (e.g., seed-bearing structures, flowers, buds, leaves, stems, shoots and roots), either cultivated or harvested wild, in their raw state or in a minimally processed form¹. When fruits and vegetables are considered in relation to healthy eating, potatoes, sweet potatoes, cassava and other starchy roots, dry grain legumes, nuts and seeds, medicinal herbs and plants, stimulants (tea, coffee), cereals and processed and ultra-processed derivatives are not classified as fruit or vegetables by the World Health Organisation and the FAO. In this brief the full definition (including potatoes, starchy roots, legumes, nuts and seeds) is used in the trade and production analyses. When addressing consumption and supply the narrower WHO/FAO definition is applied.

WHY ARE FRUIT AND VEGETABLES IMPORTANT FOR HEALTH?

Fruit and vegetables are an essential part of a healthy diet. An important source

of vitamins, minerals and fibre, they provide multiple benefits and protect against non-communicable diseases including cardiovascular disease and certain cancers². In 2017, 3.9 million deaths globally were attributable to insufficient fruit and vegetable intake³. Fruit and vegetable consumption also plays an important role in environmental health, as diets that are higher in fruit and vegetables are widely associated with increased sustainability⁴. Furthermore, the production of fruit and vegetables plays a role in land use, water pollution and biodiversity. Yet, Ireland is falling behind on all of these environmental progress indicators, according to the Environmental Protection Agency's (EPA) 2020 report⁵.

HOW MUCH FRUIT AND VEGETABLES DO WE CONSUME?

Fruit and vegetable consumption in the Irish population is far below the recommended intake of 400g per day (WHO). Average intake is estimated to be 285g/day in adults, 213g/day in adolescents and 222g/day in children, according to Irish University Nutrition Alliance National Nutrition Survey data^{6,7}.

Data on the most frequently consumed types of fruit and vegetables in Ireland is limited. However, data from the Household Budget Surveys allow for insight into the most frequently purchased fruits and vegetables. In 2016, Irish households spent an average of €15 a week on fruit and vegetables. On average, 11% of this was spent on carrots, 7% on bananas, 7% on soft fruits (berries and currants) and 6% on apples.

WHAT CHANGES ARE NEEDED TO MEET RECOMMENDED INTAKES?

To meet healthy dietary recommendations, fruit and vegetable consumption in Ireland needs to increase considerably (by approximately 40% in adults, 88% in adolescents and 80% in children). Policy actions promoting fruit and vegetable consumption should target population groups with lower consumption rates and should specifically address barriers to consumption including access, availability and affordability.

Fruit and vegetable consumption in the Irish population is far below the recommended intake of 400g per day (WHO).



IRISH FRUIT & VEGETABLE SUPPLY

As a small, open economy with a mild climate, Ireland is heavily reliant on imports for fruit and vegetable supply.

IMPORTS*

How much do we import?

As a small, open economy with a mild climate, Ireland is heavily reliant on imports for fruit and vegetable supply. Imports for fruit and vegetable supply have steadily increased over the last 60 years as domestic production has decreased (Figure 1). In 2020, 890 thousand tonnes of fruit and vegetables were imported. This represented a 42% increase in total fruit

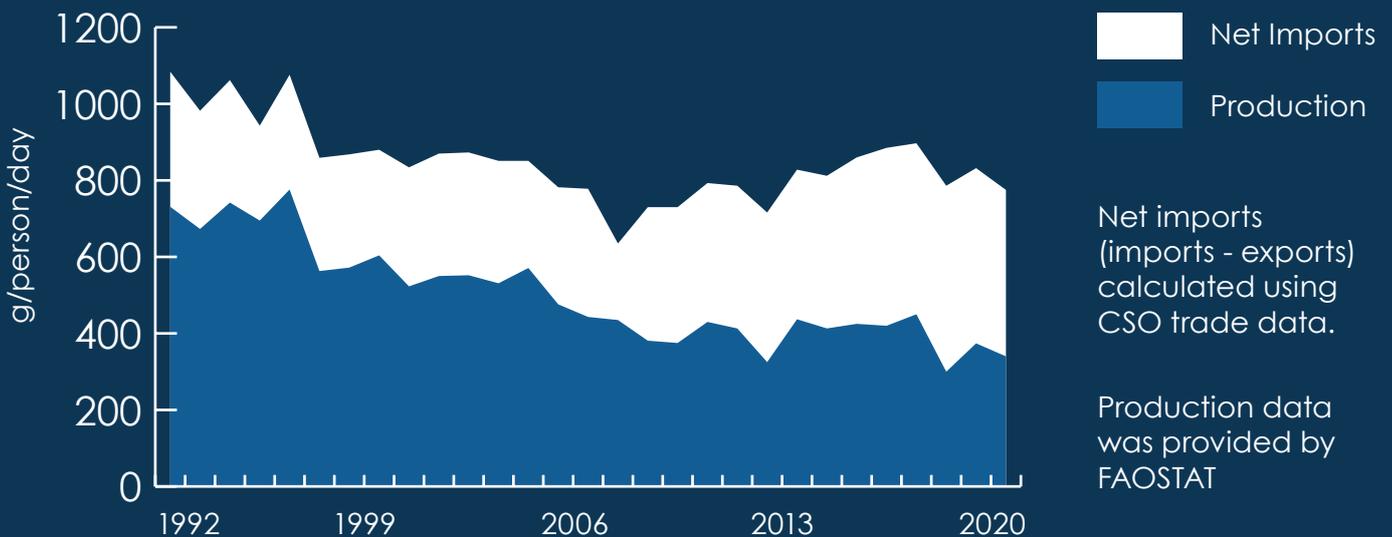
and vegetable imports compared to 1992. The largest proportion of imports comes from European countries, in particular: Spain (an average of 10% of total imports, 2017-2021), The Netherlands (13%, 2017-2021) and Great Britain (24%, 2017-2021).

Though previously Great Britain was the primary trade partner, imports of

fruit and vegetables have reduced post-Brexit: Great Britain accounted for 14% of total fruit and vegetable imports in 2021. There has been little change in imports from Northern Ireland in the last 5 years (an average of 5% of total imports, 2017-2021).

Fruit and vegetables are also imported from outside Europe from a total of 205 territories across the world.

FIGURE 1. CHANGES IN DOMESTIC PRODUCTION AND NET IMPORTS



What do we import?

Fruit and vegetable imports are made up of a mixture of tropical fruits, field vegetables, apples

and soft fruits. In 2020, 11% of total imports were bananas§ and 6% oranges and mandarins. Seasonal imports of fruit and vegetables that can be

grown domestically make up 29% of total imports: potatoes (18%), apples (5%) and soft fruits (6%).

*Data for this analysis was provided by the Central Statistics Office (CSO), Ireland.

§Bananas for ripening and subsequent re-export are included in this figure.

EXPORTS*

What do we export ?

Domestic fruit and vegetables are produced largely for consumption in Ireland- exports of domestically produced fruit and vegetables are low in comparison to imports and production. In 2020, exports amounted to just over 100 thousand tonnes. Mushrooms account for 45% of total exports, 11% of total exports are fresh or prepared potatoes and apples account for 5% of total exports.

Though bananas are not grown in Ireland, ripening facilities based here form part of the European distribution chain and, as such bananas are included in the Irish fruit and vegetable export data. Bananas accounted for 13% of total Irish exports in 2020.

Production‡

In 2020, domestic production amounted to 61.8 thousand tonnes, a 73% reduction since

1961 and a 14% reduction since 2010 (Figure 1).

Field vegetables, mushrooms and apples are the predominant fruit and vegetables produced in Ireland: potatoes (58% of total fruit and vegetable production 2020), mushrooms (13%), carrots and turnips (10%), cabbages and brassicas (5%), apples (3%). Soft fruits, primarily strawberries, represented 1% of total fruit and vegetable production in 2020.



Fruit and Vegetable Supply‡

FAO food balance sheets estimate the total amount of fruit and vegetables available as human food before food waste. This data includes fruits, vegetables and their derivatives after processing, for example juices and prepared vegetables. In 2019, estimated fruit and vegetable supply in

Ireland was 417g/person/day before food waste. In comparison, European fruit and vegetable supply before waste was estimated as 526g/person/day and global supply before waste was 607g/person/day.

Due to their perishability, waste and loss of fruit and vegetables throughout the food supply chain is generally high. Approximately 40-50% of fruit and vegetables are lost or wasted worldwide⁸. The EPA estimated that food waste in Ireland in

2019 amounted to 1 million tonnes, not including waste from primary production. This estimate suggests that after accounting for food waste, Irish fruit and vegetable supply per person would be below the recommended intake of 400g/person/day (WHO/FAO)².

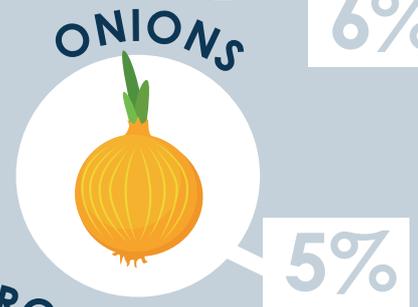
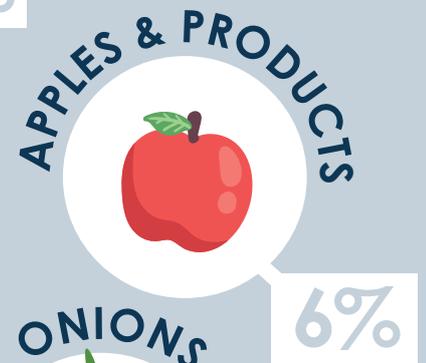
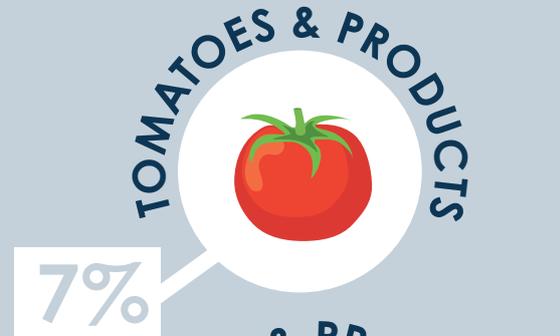
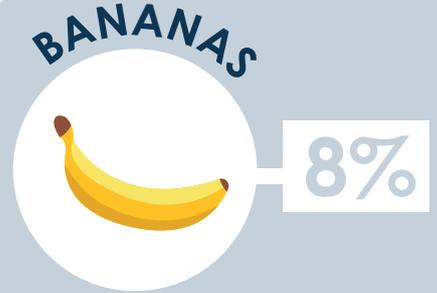
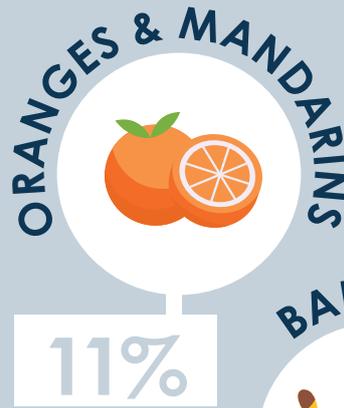
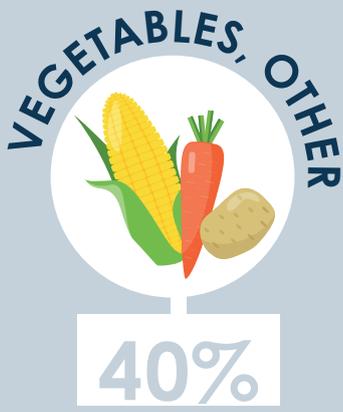
It is also important to consider the types of fruit and vegetables included in supply, as the type and quantity of nutrients they provide vary.

A summary breakdown of the Irish fruit and vegetable supply by type is shown in Figure 2.

*Data for this analysis was provided by the Central Statistics Office (CSO), Ireland.

‡Bananas for ripening and subsequent re-export are included in this figure.

‡ Data for this analysis was obtained from FAO food balances (2010-)⁹



MAIN TYPES OF FRUIT AND VEGETABLES AVAILABLE IN IRELAND*

417G
PER PERSON
PER DAY

Figure 2. Shows a summary breakdown of the Irish fruit and vegetable supply by fruit and vegetable type.

*AS CATEGORISED BY THE FAO.
REF FIGURE.2



THREATS TO FRUIT & VEGETABLE SUPPLY AND CONSUMPTION

THREATS TO PRODUCTION

Sustainable production of fruit and vegetables requires a high level of knowledge, labour, technology and inputs (including high-quality seeds, energy, fertiliser, crop protection products and growing media). As a result of external macroeconomic factors, the cost of horticulture production inputs for fruit and vegetables in Ireland has increased by an average of 13% in 2021¹⁰.

The pandemic has highlighted the need for a more resilient system with measures in place to ensure food and nutrition security and safety. Restrictions put in place to reduce the spread of COVID-19 have impacted the provision of fruit and vegetables by causing disruptions throughout the supply chain¹¹. Reduced availability and delays in the delivery of agricultural inputs, seasonal labour

shortages, non-harvesting of crops and restricted transport for distribution led to retail shortages and consumer price increases¹². Furthermore, the sharp rise in costs of inputs has put severe pressure on growers' viability as it is difficult for them to pass on the increased costs through price increases.

IMPORTS FROM CLIMATE-VULNERABLE COUNTRIES

While the climate crisis is a threat to global human and environmental health, some countries are more vulnerable to the impacts of climate change than others. The Notre Dame Global Adaption Initiative¹³ uses vulnerability indicators to assign scores estimating a country's climate vulnerability. Ireland is classified as having 'low vulnerability' to climate change and 'a high level of readiness and well-positioned to adapt'. Irish

imports come from countries and territories with different levels of vulnerability (Figure 3). Seven of the twenty countries providing >1% of imports are classified as vulnerable (Figure 3).

In 2021, 22% of total fruit and vegetable imports came from countries classified as climate-vulnerable. After decreasing in the period between the mid-1990s and the early 2000s, imports from climate-vulnerable countries are continuing to trend upwards again (44% increase in total tonnes compared to 2001).

Countries with moderate/high levels of vulnerability supply a large proportion of popularly consumed fruit and vegetables in Ireland: bananas (98%), pineapples (95%), onions (83%), oranges (57%), garlic and leeks (44%) and apples (16%).



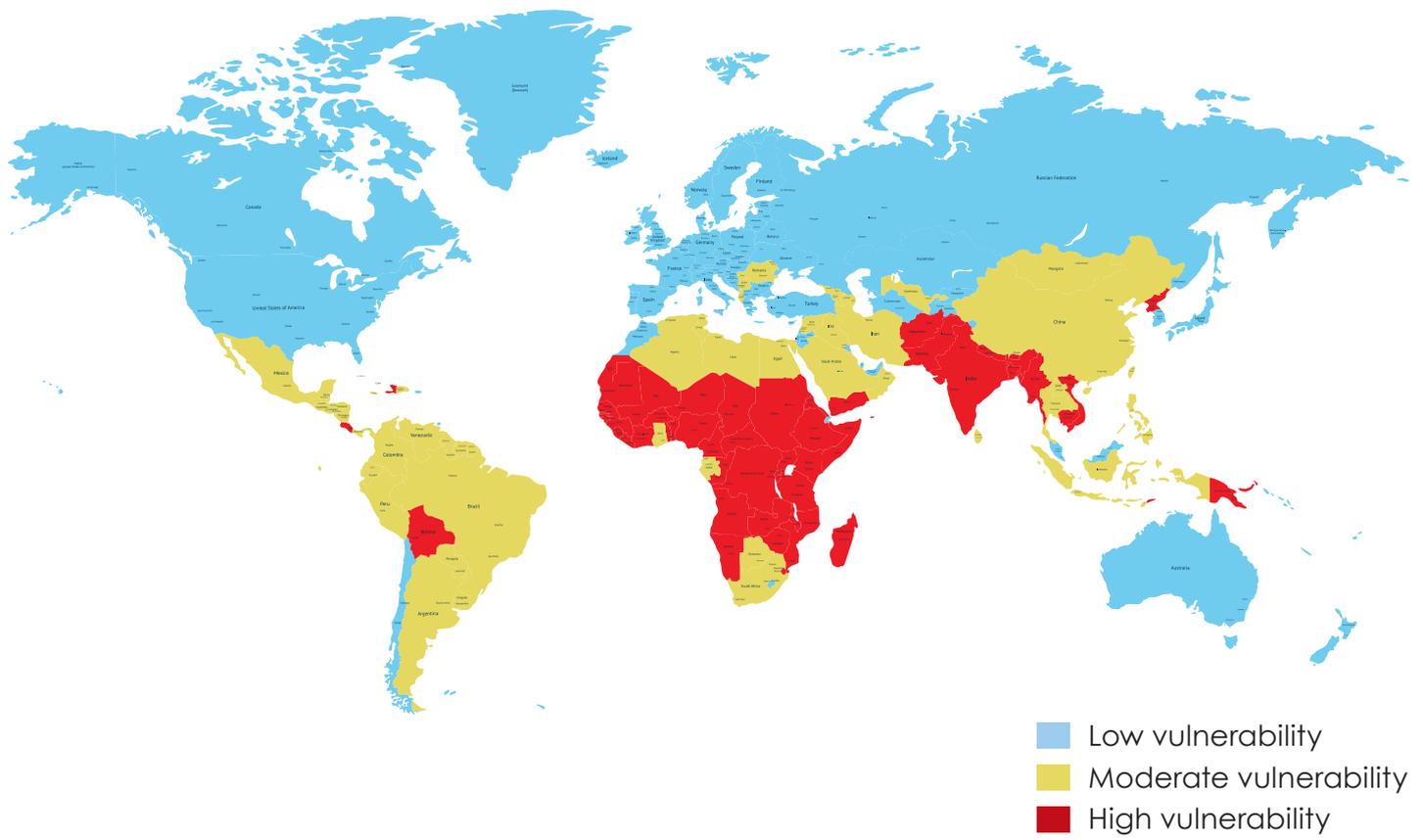
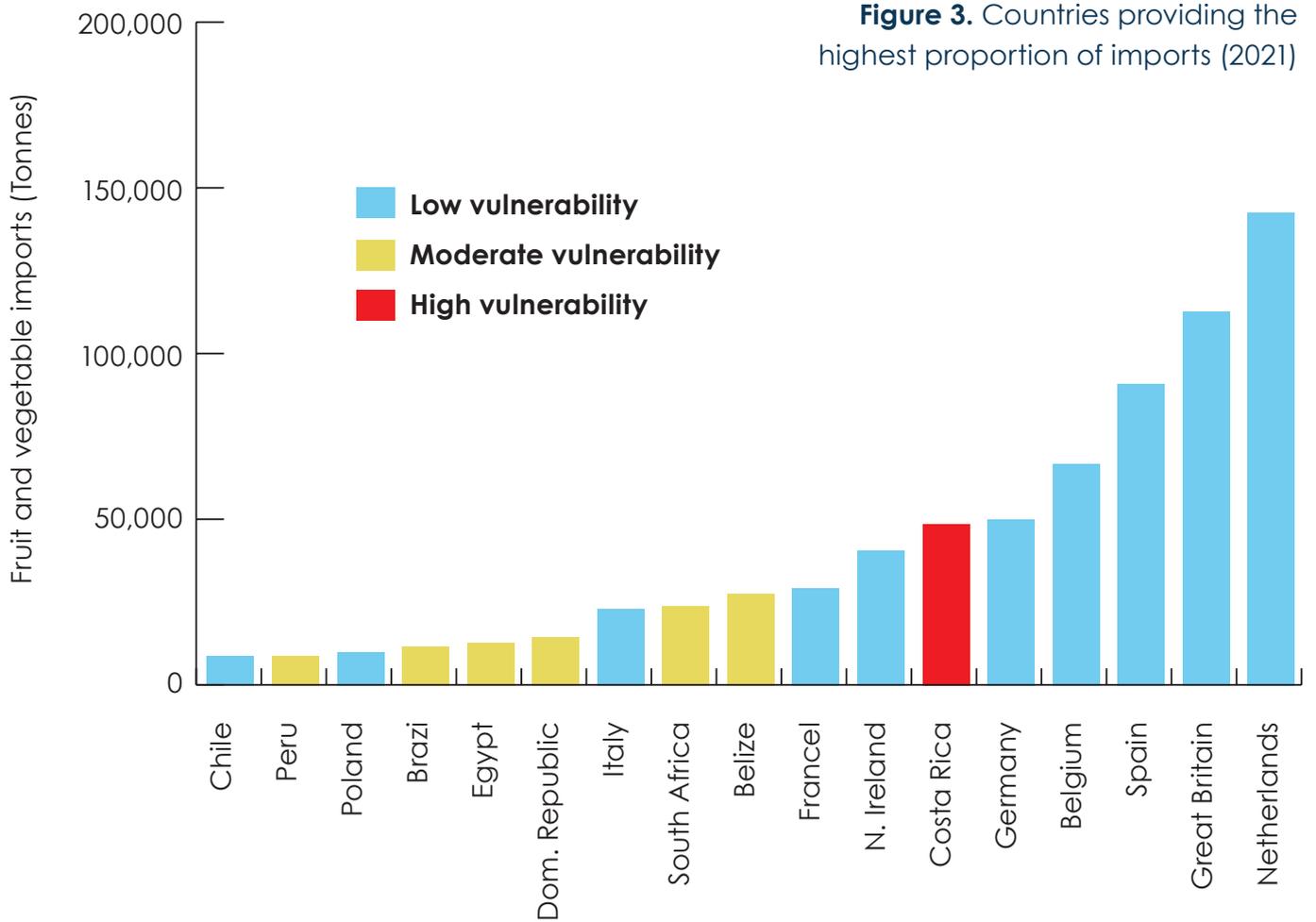


Figure 3. Countries providing the highest proportion of imports (2021)



CONCLUSION & POLICY RECOMMENDATIONS

Current fruit and vegetable supply in Ireland is below what is needed to meet healthy eating goals. When considering the future of fruit and vegetable supply, policies should consider and address the vulnerability of countries supporting the supply chain and the sustainability of increasing domestic production.

Strategies to address the vulnerability of Irish fruit and vegetable supply could include:

- Investment and research into horticultural expansion in Ireland.
- Collaboration and investment into the mitigation of climate change in agriculture in climate-vulnerable countries.

Policies targeting food loss and waste across the food system (primary production, distribution, processing, retail and household) could also alleviate this burden. Reducing waste can increase supply in a sustainable way by providing savings and allowing for the redistribution of food that would have been wasted.

To move towards more sustainable and equitable food systems there is a need for harmonised data to provide a clear picture of the current system and to monitor changes and evaluate policies. A linked trade, production and consumption database for Ireland would allow for a more accurate estimation of food supply. Further, the availability of regular consumption microdata would significantly help the development of targeted policies to increase consumption rates.



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