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Overcoming evidence gaps on food systems

Deep dive: Gender and food systems

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Note by the Secretariat

Over the course of the 2021-22 biennium, the Secretariat is developing work on addressing "evidence gaps" on food systems (TAD/CA/APM/WP(2021)2). As part of this project, the Secretariat is developing "deep dives", as discussed during the March 2021 meeting of the APM (TAD/CA/APM/WP/RD(2021)6) and during an in-depth meeting with Delegates on 9 September 2021.

This paper presents the final version of the deep dive on "Gender and food systems" as declassified by delegates in the Ad Hoc APM meeting of 27 June 2022 subject to minor edits which are incorporated in this version. This paper will be published in the OECD Food, Agriculture and Fisheries Papers series. It will also be a chapter of the final report on evidence gaps.

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1. Introduction

1. Food systems[1] are faced with the "triple challenge" of simultaneously ensuring food security and nutrition for a growing population, supporting the livelihoods of millions of people working in the food supply chain, and doing so in an environmentally sustainable way (OECD, 2021[1]). Following the publication of *Making Better Policies for Food Systems* (OECD, 2021[1]), OECD began an in-depth analysis on how to overcome evidence gaps in food systems (OECD, 2021[2]) by looking closely at three deep-dive topics, each addressing one dimension of the food systems' triple challenge.

2. The first United Nations Food Systems Summit in September 2021 (UNFSS) emphasized the importance of gender inclusive food systems that promote gender equality[2] and women's empowerment,[3] resulting in the launch of the Coalition 'Making Food Systems Work for Women and Girls'. This report discusses how the livelihoods of men and women differ in food-related activities, looking specifically at gender[4] aspects in food systems and policies addressing gender inequality in food systems across OECD countries. It adds to the substantial amount of OECD analysis related to gender issues.[5]

3. The following section discusses the roles of women in food systems as entrepreneurs, workers and consumers, and provides an assessment of evidence gaps. Section 3 explains why better evidence on the role of gender in food systems is needed for effective policy design; Section 4 describes policies addressing gender inequality in food systems and evidence gaps on assessing their effectiveness. Section 5 proposes a roadmap to respond to gender inequality in food systems; and Section 6 draws lessons related to the information collection process and the development of policies that support gender equality across food systems.

4. This report mostly treats gender aspects as binary, focusing on the roles of women and men across food systems and policies supporting gender equality. It does not cover evidence gaps related to the contribution and specific needs of sexual and gender minorities in food systems. Additional research is needed in this area to better inform policy makers, as highlighted recently by researchers (Hoffelmeyer, 2020[3]) (Wypler and Hoffelmeyer, 2020[4]) (Leslie, Wypler and Bell, 2019[5]) and the OECD (2020[6]) (2019[7]).

[1] "Food systems": See Glossary in Annex A

[2] "Gender equality": See Glossary in Annex A

[3] "Empowerment": See Glossary in Annex A

[4] "Gender": See Glossary in Annex A

[5] Previous OECD work has been published on gender and trade (Korinek, Jane; Moïsé, Evdokia; Tange, 2021[186]), women's entrepreneurship (OECD, 2021[191]) (OECD/European Union, 2019[196]), responsible agricultural supply chains (OECD/FAO, 2016[195]), the gender-environment nexus (OECD, 2021[167]), development and women empowerment (Cohen and Shinwell, 2020[172]) (OECD/ILO/CAWTAR, 2020[197]), health and nutrition (Pepper, 2019[187]), governance and gender equality (OECD, 2017[194]), rural development (OECD, 2020[192]), and wellbeing (OECD, 2020[193]). Data related to gender inequality is being collected and made publicly available in several OECD databases. These include the social institutions and gender index (https://www.genderindex.org/), the OECD Gender Data Portal (https://www.oecd.org/gender/data/), and the OECD Family database (https://www.oecd.org/social/family/database.html) .

2. The Role of Women in Food Systems

2.1. Understanding the extent of women participation and barriers to participation across food systems

5. This section explores the extent of women participation and barriers to participation across food systems using a framework developed in a recent OECD report on trade and gender (Korinek, Jane; Moïsé, Evdokia; Tange, 2021[8]) that considers their roles as entrepreneurs, workers and consumers.

2.1.1. Women entrepreneurs

6. Across the world, entrepreneurial activity is largely men-dominated; globally only one-third of businesses are women-owned or co-owned (Halim, 2020[9]). For instance, companies in the agri-food industry are less likely to have women co-owners (MWOMA, 2019[10]); in developed and developing countries alike, women-led businesses tend to be concentrated in the service, retail and hospitality sectors and are generally smaller in terms of sales, earnings, assets and number of employees (OECD Data, 2020[11]) (Goldstein, Gonzalez Martinez and Papineni, 2019[12]) (Carranza, Dhakal and Love, 2018[13]).

7. In addition, women-led businesses are often less profitable (OECD Data, 2020[11]) (Goldstein, Gonzalez Martinez and Papineni, 2019[12]). Goldstein et al. (2019[12]) found that the earnings gap between men- and women-led enterprises is correlated to the sector choice. Using the Future of Business Survey, a collaborative effort between Facebook, the World Bank and the OECD that covers 97 countries, they estimated that, on average, women who operate in men dominated sectors make 66% higher profits than women who remain in traditional women sectors[6]. Regardless of size and sector, women-led enterprises tend to participate less in international trade than do men-led enterprises (Korinek, Jane; Moïsé, Evdokia; Tange, 2021[8]). Box 2.1 provides information on the impact the COVID-19 pandemic had on women entrepreneurship.

8. Concerning the agricultural sector, women are less likely than men to own and manage a family business in OECD countries. On average, less than 30% of farms across the European Union are managed by a woman (European Commission, 2021[14]); in Switzerland, about 4% of farms are led by a woman; in the United States, 56% of farms had at least one female producer in 2017, whereas, in comparison, 91% of farms had one or more male producers (USDA, 2017[15]). According to the results of the National Agriculture Survey, less than 25% of all farms in Colombia were led by women in 2019.

9. Information collected across OECD countries shows this situation is likely to continue even if recent data points to an increasing share of women farm managers in the European Union and the United States (European Commission, 2021[14]) (Erasmus, 2018[16]). For instance, Danmarks Statistik (2020[17]) collected information in the Agricultural and Horticultural Census on women farmers in 2020. Danish women farmers own only 5% of the land and tend to manage smaller farms.[7] New data on farm succession planning in Canada indicates that on farms where one or more successors have been

[6] In Goldstein *et al.* (2019[12]), male-dominated sectors were defined based on the question "who owns most of the businesses in your sector? Men or women?" as reported by the subset of female respondents. If more than 70 percent of females reported that men owned most of the business within their sector, the sector was defined as male dominated. Of the 42 sectors covered in the study, 18 were classified as male-dominated by this definition.

[7] Women often contribute to the Danish agricultural workforce as informal part-time co-workers.

identified, in 75% of cases these are men (Agriculture and Agri-Food Canada, 2022, unpublished information). In Switzerland, due to the patrilineal tradition,[8] the vast majority of farms belong to men.

10. Carranza et al. (2018[13]) identify three distinct types of barriers to enhanced women's entrepreneurship. The first type of barriers corresponds to inequality of endowments. Unequal access to land and assets, education, entrepreneurial and digital skills, and professional networks constitute the major inequality of endowments for women entrepreneurs in agri-food systems (Njuki et al., 2021[18]) (Carranza, Dhakal and Love, 2018[13]) (Korinek, Jane; Moïsé, Evdokia; Tange, 2021[8]) and that limit their productivity (Care, 2020[19]). For instance, women have had less access to agricultural education. In Australia, women were not permitted to agricultural high schools and colleges until the 1970s. This exclusion had the added effect of drawing young women to the cities, which skewed population figures in rural communities, with many having a higher percentage of men than women (Azarias, Nettle and Williams, 2020[20]). In the United States, agricultural majors were traditionally dominated by men. In 1960, women accounted for just 1% of all bachelor's degrees earned in agriculture and natural resources. Today, however, they account for more than half of degrees awarded in the field (NCES, 2020[21]). In Switzerland, the occupational profile of the "Certified Farmer's Wife" course also reinforces a traditional role model of women in agriculture: the core competences acquired with this course primarily concern the farm household. In recent years, however, the proportion of women completing the "EFZ (apprenticeship) farmer" course has increased steadily and in 2020 stood at 19%. In Denmark, women account for one in four students involved in agriculture and horticulture vocational education.

11. The second type of barriers corresponds to external barriers. Formal and informal longstanding sociocultural and institutional gender norms result in less opportunities to engage in entrepreneurship and decision-making bodies (Ugwuegbu, 2009[22]), and to inherit agricultural assets (Kruijssen, McDougall and van Asseldonk, 2018[23]). In many countries, including OECD countries, land inheritance systems have traditionally favoured men (OECD, 2014[24]) (Murdock, 1969[25]). This legacy of property rights has implications for the scope of women's decision making in agriculture and food systems. For example, according to Vargas and Villareal (2014[26]), the lack of legal possession of land in Colombia[9] and women's historical exclusion from land ownership hampers women's decision-making power regarding agriculture production and management with women mostly undertaking non-remunerated tasks. Moreover, some sectors remain -dominated by men which is connected to a series of challenges for women entering the industries, such as the social expectations linked to their leadership skills and stereotypes.

12. The third type of barriers corresponds to internal barriers. Internalised discriminatory practices and gender norms apply to entrepreneurial activities throughout the food supply chain (Husseini, 2018[27]) (Tatum, 2018[28]) (Krivkovich et al., 2017[29]). This leads to reduced self-confidence and undervaluation of competencies and capabilities of women, which is exacerbated by the lack of role models ((Carranza, Dhakal and Love, 2018[13]); (Correll, 2016[30]) (Halabisky and Potter, 2016[31]) (Process Expo, 2017[32]). As a result, the tasks undertaken by female farm owners and managers tend to differ from the tasks undertaken by their male counterparts. The 2017 USDA Census (2017[15]) collected

[8] The patrilineal tradition implies the handover of the farm from father to son

[9] The Colombian Ministry of Agriculture estimates that about 53% of rural land was informally obtained (UPRA, 2020).

data on farm decision making and found that female producers were mostly involved in day-to-day decisions and record keeping, and not in land-use and livestock decisions.

Box 2.1. Gender-based impacts of COVID-19

Research (Global Entrepreneurship Monitor, 2021[33]) shows that women's entrepreneurship in food systems across the world has been less resilient to shocks linked to the COVID-19 pandemic than has been men's entrepreneurship. This is due to the fact that women entrepreneurs often operate in sectors highly impacted by this crisis, such as food services or retail. In these sectors, women entrepreneurs and workers were subject to lower pay and job loss (American Express, 2020[34]). Women-led businesses were also found to have received less public support, even though they were hit harder than men-led firms (The World Bank, 2020[35]).

Analysis undertaken on the Colombian rural labour market shows that lockdown measures deeply affected rural women's occupation rate.[1] In general, many women bore added burdens during the COVID-19 pandemic, including educating children at home, worrying about at-risk family members, or facing domestic violence. Emerging research in OECD countries highlights that women's mental health was more adversely affected than was the mental health of men (UK Office for Health Improvement & Disparities, 2021[36]) (Kearney, Hamel and Brodie, 2021[37]) (Park et al., 2020[38]), including that of women in rural areas (Glenister, Ervin and Podubinski, 2021[39]).

Few publicly available databases are available to measure the sex-disaggregated impacts of the pandemic on employment across food systems. In France, the APART information system developed by the Direction de l'Animation de la Recherche, des Etudes et des Statistiques (DARES) aggregates information on the evolution of employees who benefited from partial unemployment schemes (*dispositif d'activité partielle*) set up in response to the COVID-19 induced economic crisis.[2] This information can be disaggregated by sex (Dares, 2021[40]) and by sector (Dares, 2022[41]). Sex-disaggregated data on recipients of these schemes across food systems could be used to infer the pandemic's impacts on men and women workers along the food supply chain.

Unfortunately, the COVID-19 Food and Agriculture Vulnerability Index[3] compiled by Purdue University based on data from John Hopkins University that provides information on the population of workers (producers, hired, migrants, unpaid) affected by COVID-19 in the United states is not disaggregated by sex.

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1. Consultation with William Herrera, Rural Women Directorate, Ministry of Agriculture and Rural development, Colombia.
2. Partial unemployment schemes provided income compensations to workers who could not work because of lockdown periods induced by the pandemic.
3. See https://ag.purdue.edu/cfdas/resource-library/food-and-agriculture-vulnerability-index/.

2.1.2. Women workers

13. Women also contribute labour to the food system, although their contribution is often not acknowledged in national statistics and census data (FAO, 2018[42]). Women are involved in unpaid and informal activities on family farms and fishing enterprises,[10] and combine working hours with household responsibilities (The World Bank, 2020[35]) (FAO, 2015[43]).[11] This precarious situation across food systems makes women susceptible to acts of intimidation and violence. These acts may disincentive women from entering the workforce (Forbes, 2020[44]).

14. Globally, one-third of workers in agriculture are women (The World Bank and ILO, 2021[45]). The share of women's employment in agriculture ranges from 28% in the United States to over 70% in low- and middle-income countries (ILO, 2016[46]).[12] One in two seafood workers is a woman, and women constitute 70% of the workforce in aquaculture and 85% of employment in fish processing globally (FAO, 2015[43]).

15. In developed countries, women are overrepresented in the food services industry. In these sectors, women usually have lower-paid and lower-skilled jobs than men (Mojtehedzadeh and Vendeville, 2016[47]) (Chang and Travaglione, 2011[48]) (UK National Statistics, 2020[49]) (Rewards Network, 2017[50]). The 2021 Annual Survey of Hours and Earnings (UK Office for National Statistics, 2022[51]) in the United Kingdom provides estimates for the gender wage gap across all activities, including food systems activities for employees. In 2021, the wage gap ranged between 6.4% for agriculture, forestry and fishing, and 10.3% for the retail sale of food and beverages. An analysis by Coulter et al. (2016[52]) of the gender wage gap in Ontario's food and non-food retail sector found that for every dollar a worker who is a man earns, a woman worker earns 74 cents for the same tasks.

16. Yet, the food services sector might provide more opportunities for women than other sectors. In the United States, for example, the share of women in managerial positions is amongst the highest of any sector (Rewards Network, 2017[50]). However, the COVID-19 pandemic has affected women workers in food-related activities more negatively than their male counterparts (Box 2.1).

17. Finally, women inventors are underrepresented in agricultural and food-related innovation. According to OECD data[13], the share of women inventors of agriculture-related patents[14] is lower than 40% in most OECD countries and below the share of women

[10] The Food and Agriculture Organization (FAO), defines family farming as "a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production, which is managed and operated by a family and predominantly reliant on family labour, that of both women and men" (FAO, 2013[190]).

[11] In Colombia, it was estimated that the total average of working hours for rural women is 14 hours and 22 minutes per day and that they receive remuneration for 38.1% of the daily time worked. Rural men work on average 2 hours and 27 minutes less than rural women, and receive remuneration for 72.7% of the daily time worked. The difference in daily work time between men and women is concentrated in the time dedicated to unpaid work.

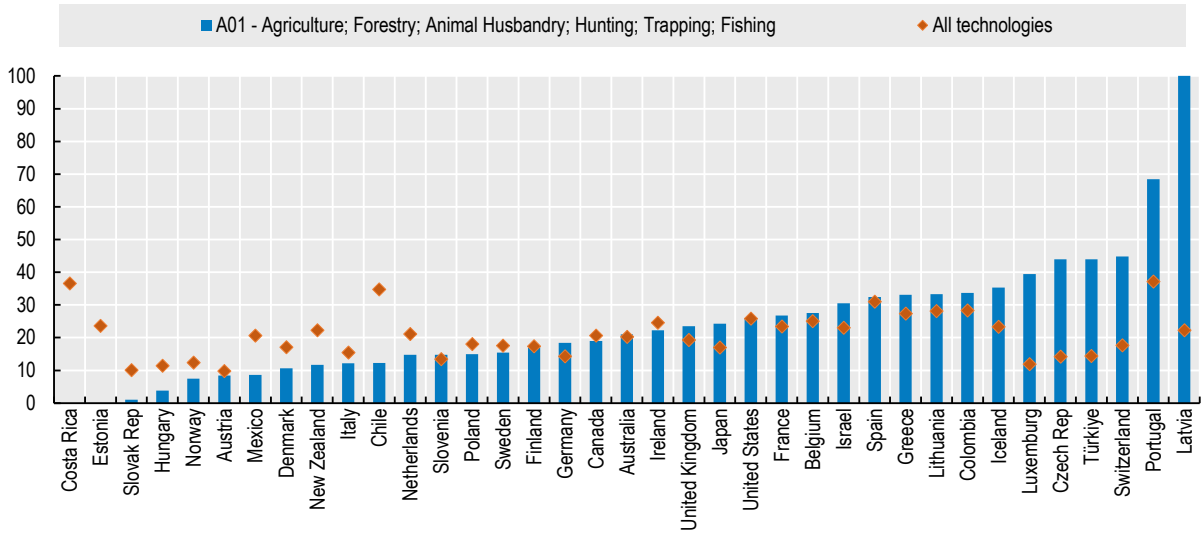
[12] The Sahel and West Africa Club (OECD/SWAC, 2019[200])has conducted specific research on the role of women in West African food systems and policy implications.

[13] Information is available at: Intellectual property (IP) statistics and analysis - OECD.

[14] Patents classified under 'A01 - Agriculture; Forestry; Animal Husbandry; Hunting; Trapping; Fishing' under the International Patent Classification (IPC). Available at: https://www.wipo.int/classifications/ipc/en/.

inventors for all technologies in about half of the countries (Figure 2.1).[15] This relatively low patenting activity by women inventors could be a food systems illustration of the so-called science, technology, engineering, and mathematics (STEM) paradox whereby women tend to be underrepresented in STEM fields in more gender-equal countries (OECD, 2019[53]) (Stoet and Geary, 2018[54]).

Figure 2.1. Patenting activity by women inventors in primary industries, 2016-18.



Note: Patenting activity by women is expressed as a percentage of all A01 IPC class patents that relate to primary industries (Agriculture; Forestry; Animal Husbandry; Hunting; Trapping; Fishing) in IP5 patent families. It is compared to patenting activity by women for all technologies. This information is shown by inventors' country. More methodological information on how patenting activity by women is evaluated is provided in Annex C.
Source: OECD, STI Micro-data Lab: Intellectual Property Database, http://oe.cd/ipstats, December 2021

2.1.3. Women consumers

18. Women are more likely to be poorer than men (National Women's Law Center (NWLC), 2016[55]) (United Nations, 2015[56]). Given their overrepresentation among low-income and single parent households, they tend to spend a larger share of their disposable income on consumer goods, including food (Korinek, Jane; Moïsé, Evdokia; Tange, 2021[8]). This implies they may sometimes compromise on food quality or quantity (Placzek, 2021[57]) and be at risk of facing food insecurity (TAD/CA/APM/WP(2022)15) (Gallegos et al., 2022[58]).

19. Research undertaken on obesity and overweight in 11 OECD countries, based on national health surveys (Devaux and Sassi, 2013[59]), highlights large social inequalities in obesity and overweight. Women in disadvantaged socio-economic groups are more likely to be obese or overweight than more educated and affluent women. Women are often the main household food providers (OECD, 2021[60]) (Placzek, 2021[57]) (Khan and Trivedi, 2015[61]) (Brennan, 2015[62]). Research shows that the nutritional quality of a household's

[15] Annex C. provides additional information on IP5 patent families and the identification of inventor's gender.

diet is somehow correlated to a woman's educational and financial status (Galiè et al., 2019[63]) (OECD, 2020[64]).

20. The last survey on women decision-making power undertaken by Colombia shows that women with no or very low salaries compared to their partners are more likely to have less decision-making power on food choices.[16] Research that looks at consumers' food behaviour according to gender finds that women on average make healthier food choices than do men (Snyder and Sapra, 2015[65]) (Janssen et al., 2021[66]) (Colapinto, Graham and St-Pierre, 2018[67]) (Gorvett, 2020[68]). Women are, for instance, the main consumers of recent healthy-diet consumption trends centred on natural and low sugar foods (Snyder and Sapra, 2015[65]) (Janssen et al., 2021[66]); this could be related to the influence of social norms on eating behaviour (Higgs, 2015[69]). In the United States, women tend to cook more than men do (Taillie, 2018[70]). Less educated men seem to rely more on ready meals or away-from-home foods (Taillie, 2018[70]), which are likely to be energy-dense and nutrient-poor with potential consequences to their health status (OECD, 2021[1]) (Placzek, 2021[57]). A special analysis of the Swiss national health survey on farmers also found evidence of these gender differences in consumption, showing that in 2017 fewer farmers (just under 50%) and fewer women farmers (about 60%) paid attention to nutrition compared to the rest of the population (OFAG, 2019[71]).

2.2. Assessment of evidence gaps on women's participation to food systems

2.2.1. Women entrepreneurs

21. Table 2.1 synthesises data availability of sex-disaggregated information on entrepreneurship at the different stages of the food supply chain at the global level, in the United States and the European Union[17]. Data on women's entrepreneurship across food systems is largely incomplete, and sex-disaggregated data on land ownership is not collected by international organizations for high-income countries. Sex-disaggregated data on access to finance, credit, trainings and working conditions is not often collected.[18]

22. Detailed data on the decision-making role of women within farm businesses and on off-farm employment is often missing, which means that the contributions of women to the performance of farm businesses remains invisible. Further data is needed to quantify the role of women in farm diversification across countries, and further evidence is also needed to better understand the influence of women's involvement in agri-environmental practices, farm survival and local economies beyond farm gate (Shortall, 2022[72]).

[16] Consultation with William Herrera, Rural Women Directorate, Colombian Ministry of Agriculture and Rural development

[17] A review of country level data sources from OECD countries indicate that only the United States and European Union publish gender-specific information.

[18] The annual monitoring of the situation in Swiss agriculture collects sex-disaggregated information on working conditions and health status of farmers: Rapport agricole 2021 - Qualité de vie (agrarbericht.ch)

Table 2.1. Sex-disaggregated data availability on entrepreneurship in the different stages of the food supply chain

Dataset	Organization	Geographic coverage	Sub-topic	Stage of food system	Link
World Bank Entreprise Survey	World Bank	All countries, including high-income OECD countries	Labour Market, Ownership, Managerial Positions	Food Manufacturing, Services (not specific to food)	https://www.enterprisesurveys.org/en/custom-query
The Women's Empowerment in Agriculture Index (WEAI)	IFPRI	Bangladesh, Benin, Malawi, Philippines	Women's empowerment and inclusion in the agricultural sector	Farming	https://www.ifpri.org/project/weai
FAO Gender and Land Rights Database	FAO	Low and middle income countries	Land ownership	Farming	http://www.fao.org/gender/landrights/home/en/
Food and Agriculture Microdata (FAM)	FAO	Low and middle income countries	Agricultural census	Farming	http://www.fao.org/gender/landrights/home/en/
Census of Agriculture	USDA	United States	Female producers characteristics, Farm operations, decision-making	Farming	https://www.nass.usda.gov/AgCensus/ https://www.nass.usda.gov/Publications/Highlights/2019/2017Census_Female_Producers.pdf
Agricultural Resource Management Survey	USDA	United States	Production practices, resource use, economic well-being	Farming	https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Ag_Resource_Management/
Agriculture, forestry and fishery statistics	Eurostat	European Union	Female producers characteristics	Farming	https://ec.europa.eu/eurostat/en/web/products-statistical-books/-/KS-FK-18-001

Note: Additional information on these databases is provided in Annex B. USDA compiles information on women and minorities on farms and in rural areas in the Alternative Farming Systems Information Center. More information is available at US Statistics on Women and Minorities on Farms and in Rural Areas | Alternative Farming Systems Information Center| NAL | USDA

2.2.2. Women workers

23. Systematic reviews on evidence gaps related to the participation of women as workers across food systems[19] generally have a geographic focus limited to low- and middle-income countries (LMICs) and rural agricultural areas. They do not consider all roles women take throughout the food value chain, and often focus on academic research needs rather than data needed to directly inform policies (Njuki et al., 2021[18])) (LEAD, 2021[73]).

24. Information on women's participation along the food supply chain in OECD countries is not detailed enough beyond the farm gate to allow analysis of gender differences along supply chains. Data on women's employment in food manufacturing and services is incomplete. Moreover, sex-disaggregated data is especially scarce within selected subsectors, such as aquaculture and fishing value chains and agricultural inputs (Kruijssen, McDougall and van Asseldonk, 2018[23]) (Puskur et al., 2021[74]) (WorldFish, 2020[75]) (Polar et al., 2021[76])).

[19] The Leveraging Evidence for Access and Development (LEAD) produced in 2021 an evidence gap map (EGM) on gender in agriculture and food systems. The analysis (https://cgspace.cgiar.org/handle/10568/114123) is based on a systematic review of 752 studies using qualitative, quantitative and mixed method designs with a geographic scope of low- and middle-income countries.

25. Table 2.2 presents the availability of sex-disaggregated data on employment at different stages of the food supply chain.[20]

Table 2.2. Sex-disaggregated data availability on employment at different stages of the food supply chain

Dataset	Organization	Geographic coverage	Activity type	Stage of food system	Link
Gender Disaggregated Labor Database	World Bank	All countries, except for USA, Canada, some European Countries, New Zealand, some countries in each region	Animal Products nec; bovine cattle, sheep, goat, horses; cereal grain nec; crops nec; fishing; forestry; oil seeds; paddy rice; plant-based fibers; raw milk; sugar cane, sugar beet; vegetables, fruits, nuts; wheat; wool, silk-worn cocoon	Farming	https://datatopics.worldbank.org/gdld/
Gender Disaggregated Labor Database	World Bank	All countries, except for USA, Canada, some European Countries, New Zealand, some countries in each region	Beverages and tobacco products; bovine meat products; dairy products; food products nec; meat products nec	Manufacturing	https://datatopics.worldbank.org/gdld/
Gender Disaggregated Labor Database	World Bank	All countries, except for USA, Canada, some European Countries, New Zealand, some countries in each region	Accommodation, food and service activities	Services	https://datatopics.worldbank.org/gdld/
Annual Labour Force Statistics	OECD.Stat	OECD countries	:	Farming, manufacturing, wholesale and retail, services	https://stats.oecd.org/Index.aspx?DataSetCode=ALFS_EMP
ILO Labor Force	ILO	136 countries across the world	:	Farming, Manufacturing, Services	https://ilostat.ilo.org/data/data-catalogue/#
Women in the labor force: a databook	Bureau of Labor Statistics	United States	Information on total employed and percentage of women of several detailed occupations, many of which relate to food systems such as “Food preparation and serving related occupations” and “Natural resources, construction, and maintenance occupations”	Farming, Manufacturing, Services	https://www.bls.gov/opub/reports/womens-databook/2020/home.htm
EU Labour Force Survey	Eurostat	European Union Member Countries	Crop and animal production, hunting and related service activities; Fishing and aquaculture ; Manufacture of food products; Manufacture of	Farming, Manufacturing, Wholesale and retail	https://ec.europa.eu/eurostat/fr/web/products-eurostat-news/-/DDN-20200522-2

[20] See Annex B for further analytical information

Dataset	Organization	Geographic coverage	Activity type	Stage of food system	Link
			beverages; Wholesale of food, beverages and tobacco; Retail sale of food, beverages and tobacco in specialised stores		
Annual Survey of Hours and Earnings	Office for National Statistics	United Kingdom	Gender wage gap for all activities including food systems activities for employees from primary sector to retail and services	Farming, Manufacturing, Wholesale, retail and services	https://www.ons.gov.uk/surveys/informationforbusinesses/businesssurveys/annualsurveyofhoursandearningsashe
Swiss Labour Force Survey	Federal statistical office	Switzerland	Information on total employed and percent women of several detailed occupations, many of which relate to food systems such as agriculture, forestry and fishing; manufacturing; trade and retail; food services activities	Farming, Manufacturing, Wholesale, retail and services	https://www.bfs.admin.ch/bfs/en/home/statistics/work-income/surveys/slfs.html

Note: Additional information on these databases is provided in Annex B.

26. Data on conditions under which women's employment takes place is limited and fragmented. At the company-level, civil society organisations collect data on gender inclusion across food systems in order to track progress on gender equality goals (Table 2.3). This data is crucial to monitor and evaluate the effectiveness and impacts of programmes and to compare progress towards gender equality goals across countries.

Table 2.3. Data on gender inclusion in agri-food companies

Organization	Database	Indicators	Link
World Benchmarking Alliance (WBA)	Food and Agriculture Benchmark	The Food and Agriculture Benchmark assesses and ranks 350 of the world's most influential food and agriculture companies across the full value chain on their contribution to the Sustainable Development Goals. The Social Inclusion Score include core indicators on decent work and workforce diversity disclosure (proportion of total direct operations workforce for each employee category by gender, race, ethnicity, age, disability, sexual identity and marital and family status) and gender equality and women's empowerment (public commitment, time-bound targets, at least 30% women on the highest governance body, discloses the ratio of the basic salary and remuneration of women to men).	https://www.worldbenchmarkingalliance.org/publication/food-agriculture/
Oxfam	Behind the Brands	Behind the Brands evaluates the performance of the ten largest food and beverage companies regarding gender equality, discrimination and women empowerment. The ranking is focused on women farm workers and small-scale producers in the supply chain.	https://www.behindthebrands.org/issues/women/
Oxfam UK	Behind the Barcodes	Behind the Barcodes evaluates and ranks the six leading food retailers in the United Kingdom regarding women empowerment and gender equality.	https://oxfamapps.org/behindthebarcodes/

Source: (WBA, 2021[77]) (Oxfam, 2021[78]) (Oxfam UK, 2021[79])

2.2.3. Women consumers

27. In OECD countries, national surveys on food intake are largely disaggregated by sex (Giner and Brooks, 2019[80]). The Food Systems Dashboard (Fanzo et al., 2020[81]) provides detailed data on nutritional status and dietary intake by sex across the world. However, sex-disaggregated information on consumer behaviour related to food acquisition, food preparation, meal practices, and food storage is not available in the Dashboard as it is is largely fragmented across research institutions, national statistics agencies, private stakeholders, and civil society (Giner and Brooks, 2019[80]).

28. Amongst OECD countries, the United States, the United Kingdom and Switzerland collect gender-specific evidence on food demand and behaviour which can be used to effectively inform demand-side policy instruments incentivizing more sustainable and nutritious diets. In the United States, USDA has developed the Consumer Food Data System (CFDS) (USDA, 2022[82]). USDA surveys such as the National Household Food Acquisition and Purchase Survey (FoodAPS)[21] and proprietary data sources including Information Resources, Inc. (IRI) Scanner Data[22] are included in CFDS. FoodAPS uses digital technologies and in particular mobile phones app to ease the burden of data collection (Baragwanath, 2021[83]). Access to CFDS is restricted, but can be requested by researchers. The American Time Use Survey (ATUS) contains an Eating & Health (EH) Module (U.S. Bureau of Labor Statistics, 2022[84]) that includes information on eating, meal preparation, and health by gender. The National Health and Nutrition Examination Survey

[21] More information on FoodAPS is available at (USDA, 2022[199]) (Giner and Brooks, 2019[80]).

[22] More information on the USDA food-related data sources can be found in (USDA, 2022[85]).

(NHANES) includes a series of questions on diet and health knowledge and opinions in the Consumer Behaviour modules (USDA, 2022[85]).

29. In the United Kingdom, the Food Standards Agency (FSA) conducts the Food and You 2 survey biannually to measure self-reported consumer knowledge, attitudes, and behaviour related to food issues amongst adults. This data is sex-disaggregated. The FSA also carried out a consumer poll to understand consumer behaviours and attitudes in relation to healthy and sustainable diets with data sex-disaggregated (FSA, 2021[86]). The Swiss federal office of statistics collects sex-disaggregated information on the drivers of fruits and vegetables purchasing [23] as part of the Omnibus survey on environment quality and environmental behaviour.

30. Individual-level data on food insecurity of women is missing, especially in high-income countries (TAD/CA/APM/WP(2022)15) (Placzek, 2021[57]) (Broussard, 2019[87]). Recent OECD analysis (TAD/CA/APM/WP(2022)15) highlights the priority to develop routine measurement processes concerning food insecurity prevalence across OECD countries, which should be standardised across countries to allow for comparability. Two main scales are available: the FAO Food Insecurity Experience Scale (FIES) (FAO, 2021[88]) and the USDA Household Food Security Survey Module (USDA, 2021[89]). USDA collects detailed information on food (in)security by gender as part of the Current Population Survey Food Security Supplement. This information is reported on an annual basis (Coleman-Jensen et al., 2021[90]). As highlighted by the US experience of monitoring real-time food insecurity prevalence during the COVID-19 crisis with the US Census Bureau's Household Pulse Survey,[24] developing a measurement process that can be implemented rapidly in periods of crisis can help to better target policies addressing food insecurity. Given the large social inequalities in overweight and obesity prevalence observed among women (Devaux and Sassi, 2013[59]), this measurement process needs to be sex-disaggregated.

3. Better evidence on the role of gender in food systems is needed for effective policy design

31. This section focuses on the need to collect baseline evidence of the role of gender in food systems for better policy information. It explains why and how gender aspects can be highlighted in food systems policies and then reviews how to address gender evidence gaps for better policy design.

3.1. Highlighting gender in food systems policies

3.1.1. Gender mainstreaming

32. Gender equality has been recognised as a universal human right since 1948. As part of the Beijing Platform for Action adopted at the Fourth United Nations World Conference on Women in 1995, gender mainstreaming[25] was established as a strategy to reach gender equality. This approach to policymaking takes into account gender equality and both women's and men's interests and concerns at all stages of policy processes.

[23] See Critères lors de l'achat de fruits et légumes - 2011, 2015, 2019 | Tableau | Office fédéral de la statistique (admin.ch).

[24] See https://www.census.gov/programs-surveys/household-pulse-survey/data.html.

[25] See Glossary in Annex A.

33. The 2021 United Nations Food Systems Summit emphasized the importance of gender inclusive food systems. The Coalition on making food systems work for women and girls[26] stresses the need to improve gender equality and women's empowerment as key levers for progress across the triple challenge faced by food systems.

34. Decision-making bodies supporting enhanced gender equality and diversity across food systems also need to be committed to gender equality in their own operations. The OECD (2018[91]) has developed a self-assessment toolkit to help national governments mainstream and implement gender equality. This toolkit aims to make governments and public entities more aware of and responsive to the perspectives, interests and needs of both women and men. Similarly, the recently launched Global Food 50/50 Initiative (Global Health 50/50 & IFPRI, 2021[92]) will monitor progress and hold global food systems organisations accountable on the achievement of gender equality in leadership and on the adoption of gender equitable internal workplace policies.

35. The OECD well-being lens and gender budgeting[27] are practical tools for governments to prioritize gender equality in the general policy-making process. The OECD well-being lens (OECD, 2019[93]) seeks to help governments achieve transformational change with regards to climate action while simultaneously improving well-being outcomes. Adopting a well-being lens when approaching the triple challenge of food systems allows to take into consideration the particular needs of women and men.

36. Seventeen OECD countries[28] have adopted gender budgeting as a tool to mainstream gender equality considerations in various policy domains (Downes and Nicol, 2020[94]). Gender budgeting involves using the tools, techniques and procedures of the budget cycle in a systematic way to promote gender-responsive policies and gender equality. Gender budgeting can generate the reprioritisation of public spending to close gender gaps. Overall, gender budgeting is most effective when it encompasses a whole-of-government approach guided by a national gender equality strategy, along with a gender perspective at all stages of the budget process A supportive enabling environment includes, among other aspects, systematic collection of gender disaggregated data (Downes and Nicol, 2020[94]). The FAO sees gender budgeting as an essential tool to mainstream gender equality in agriculture and rural development policies (2018[95]).

37. In Spain, gender budgeting has been mandatory since 2003 (BOE, 2003[96]). Since 2009, *ex ante* gender impact assessment[29] and gender mainstreaming is required for each ministry (BOE, 2009[97]). In 2017, gender mainstreaming of the national budget was undertaken for each ministry including the Ministry of Agriculture and Fisheries (MAPA) (FAO, 2018[95]). Consequently, 20 gender-specific activities focusing on the empowerment of rural women and women in fisheries, and on strengthening gender equality within MAPA have been implemented. A set of indicators has been defined to measure the impact of each activity (Spanish ministry of health, 2017[98]).

[26] https://foodsystems.community/commitment-registry/making-food-systems-work-for-women-and-girls/.

[27] See Glossary in Annex A.

[28] Austria, Belgium, Canada, Chile, Finland, Germany, Iceland, Ireland, Israel, Italy, Japan, Korea, Mexico, Norway, Portugal, Spain and Sweden. France and Turkey have plans to introduce it. Further information is provided in Section 2.

[29] See Glossary in Annex A.

38. Canada also has a "mainstreamed"[30] gender budgeting practice in place (Downes and Nicol, 2020[94]). Since 1995, the Government of Canada uses Gender-Based Analysis Plus (GBA+), an analytical tool, to assess expected impacts of policies on specific subgroups, including women, before making a decision (Downes and Nicol, 2020[94]) (OECD, 2018[99]). Since 2017, GBA+ assessments are mandatory in new budget proposals, and has been applied to evaluate, anticipate and prevent potential adverse effects on women when developing the Food Policy for Canada (The Government of Canada, 2021[100]).

39. The Federal Council of Switzerland adopted the 2030 Gender Equality Strategy in April 2021. This is the Swiss government's first national strategy specifically aimed at promoting gender equality. It focuses on four central themes: promoting equality in the workplace, improving work-life balance, preventing violence, and fighting discrimination. As part of this strategy, a large national study on the economic and social situation of women in agriculture (OFAG, 2022[101]) is being carried out in 2022 by the Office Fédéral de l'Agriculture (OFAG); it covers the roles, tasks and legal status of women farm managers.

40. The FAO, IFAD and WFP have jointly developed a methodology to treat the underlying causes of gender disparities in food systems beyond visible gender gaps, known as Gender-Transformative[31] Approaches (GTA) (FAO/IFAD/WFP, 2020[102]). The methodology is relevant for all stakeholders involved in transforming gender norms for long-term change. GTA involve both men and women to overcome and redefine informal gender norms. Education on the benefits of greater gender equality and the development of social space for dialogue to foster acceptance are integral parts of GTA (WFP, 2021[103]). To date, GTA have been applied to international development programmes that focus on food security (Cole et al., 2020[104]), but could also be applied to policies designed to improve gender equality in OECD countries.

3.1.2. Gender and the food systems triple challenge

41. When addressing gender aspects across food systems, governments can seek to apply a food-systems approach and develop policies that create synergies with other food systems' objectives (OECD, 2021[1]). Some synergies are highlighted in this section. Addressing gender aspects and fostering gender inclusion can have positive impacts on the triple challenge faced by food systems to ensure food security and nutrition for a growing population, support the livelihoods of millions of people working in the food supply chain, and to do so in an environmentally sustainable way.

42. First, concerning the livelihood challenge, using the full potential of women would benefit countries' and companies' economic efficiency and wellbeing. For instance, the European Institute for Gender Equality (2017[105]) states that gender equality could increase GDP per capita by up to 9.6% by 2050 and create 10.5 million jobs in the European Union. In Colombia, gender equality could boost the country's total domestic output by 35% (Presidencia Colombia, 2019). Lowering barriers faced by women to access productive agricultural resources could steadily increase their farms' yields and economic viability (FAO, 2011[106]).

[30] The OECD categorises gender budgeting efforts as "threshold", "introductory", "mainstreamed" or "advanced". As of 2020, almost half of the OECD countries having implemented gender budgeting have an "introductory" practice, and the remaining have a "mainstreamed" practice. No country has an "advanced" practice (Downes and Nicol, 2020[94]).

[31] See Glossary in Annex A.

43. In addition, improving gender diversity in management across food systems could enhance business performance and efficiency by exploiting valuable assets. Indeed, Fortune 500 companies with more women board directors tend to perform better financially (OECD, 2008[107]) (McKinsey Global Institute, 2015[108]). Hernandez-Nicolas et al. (2019[109]) have found that agricultural cooperatives with greater representation of women on their boards have higher returns and lower levels of debt. Analysis conducted by the International Labour Organisation (ILO, 2015[110]) shows, however, that cultural norms tend to hinder women's participation in the decision-making bodies of cooperatives. Responding to civil society's expectations may directly benefit companies that promote gender diversity in terms of marketing and sales (McKinsey & Company, 2017[111]).

44. Better gender diversity can also contribute to innovation and diversification for the agricultural sector (European Institute for Gender Equality, 2017[105]) (Riley, 2009[112]) (Mc Fadden and Gorman, 2016[113]). Audette et al. (2019[114]) found that promoting gender equality and improving women's representation in public and private organizations can significantly improve well-being and the quality of life for everyone. For instance, the empowerment[32] of rural women could improve livelihoods of rural communities (IFAD, 2020[115]) (European Parliament, 2019[116]) and contribute to the revitalization of rural areas (ILO, 2019[117]).

45. Second, considering gender aspects in policy design may yield positive outcomes for the food security and nutrition challenge. Research shows, for example, that improving nutritional knowledge may improve the healthfulness of men's diets and their food security status (Gallegos et al., 2022[58]). IFPRI analysis (Ragasa, Aberman and Alvarez Mingote, 2019[118]) undertaken in Malawi find agricultural and nutrition educational programmes to be more effective in overcoming food insecurity when they engage both women and men in households. Recent research (Weltzien et al., 2019[119]) highlights gender preferences for crop varieties, with women more frequently valuing food security traits.

46. Finally, concerning the environmental sustainability challenge, research points to the benefits of greater gender diversity in companies' decision-making roles; this can translate into more environmentally-conscious policies and decisions (University of Colorado, 2019[120]) (Nadeem et al., 2020[121]) (Kassinis et al., 2016[122]) (Cook, Grillos and Andersson, 2019[123]) (Krivkovich et al., 2017[29]) (Leisher et al., 2016[124]). Achieving greater gender diversity in the agricultural sector could enable the use of more environmentally-friendly techniques when it comes to the management of rural areas and their natural resources (IFAD, 2020[115]) (European Parliament, 2019[116]). In addition, as consumers, women regardless of socioeconomic determinants tend to have, on average, more environmentally sustainable consumption habits (OECD, 2017[125]) (Snyder and Sapra, 2015[65]) (University of Colorado, 2019[120]).

3.2. Addressing gender evidence gaps for better policy design

47. Table 3.1 provides an overview of evidence gaps related to gender and food systems and how such information could inform policy design. The availability of reliable, sex-disaggregated data appears as necessary to ensure decisions taken by policy makers reduce, rather than widen, existing gender inequalities (Larsen, 2021[126]). Given the fragmentation of sex-disaggregated information sources related to food systems, countries' efforts to gather evidence on gender in food systems could be usefully harmonized.

48. Collecting comparable sex-disaggregated labour statistics along the food value chain would enable the identification of job and business opportunities for women beyond

[32] See Glossary in Annex A.

the farm gate, and the development of measures that foster employment and leadership in segments of the food systems where women are underrepresented.

49. Similarly, gathering comparable evidence on the contribution of women managers in family farms could help identifying barriers to their further contribution. Moreover, collecting detailed sex-disaggregated data on skills and wages for workers in the food supply chain would allow to track progress on national and international gender equality goals, including the Sustainable Development Goals. Finally, gathering evidence on sex-disaggregated demand for food products can inform on the type of interventions that would shift consumer behaviour towards healthy and environmentally sustainable diets.

Table 3.1. Policy implications of closing evidence gaps on women's participation to food systems

	Evidence gaps	Implications for policy design
Entrepreneurs	Primary sector: Sex-disaggregated data on land and asset ownership, decision-making, specific gender needs is scarce Data on the contribution of women in farm businesses as decision-makers, entrepreneurs and in business diversification is missing Food systems in general: Sex-disaggregated data on ownership or co-ownership, access to finance, profitability and trade is scarce	Design relevant policies to overcome the barriers to women farm management and women's entrepreneurship
Workers	Sex-disaggregated data on participation throughout the food supply chain is fragmented across various databases in individual segments of the food supply chain Data on the participation of women across food systems in research and development, manufacturing and food services is not detailed enough and fragmented Data on gender diversity and equality (wages, management positions, representation, contracts) in the agri-food industry is incomplete and not comparable Sex-disaggregated data on unpaid activities (including care work)	Design measures to foster women's employment and leadership Design relevant and effective policies tailored to women's needs Track progress on gender equality goals
Consumers	Knowledge and sex-disaggregated data on food purchasing and intake, consumer behaviour, nutrition and health is accessible to policy makers in only few countries (United States, United Kingdom) Sex-disaggregated food insecurity measurements are missing except in few countries.	Measure the impacts and effectiveness by sex of demand-side interventions on food choices Design relevant and effective interventions to enhance food security

50. Some OECD countries already collect evidence or fund research to develop a better understanding of gender aspects across food systems. Such activities are crucial instruments to inform gender-responsive policy (Downes, von Trapp and Nicol, 2017[127]). The experience of Israel shows that the systematic and routine collection of sex-disaggregated data (since 2008) coupled with gender budgeting (since 2014) can lead to the reallocation of budget resources *ex post* to foster gender equality (Downes and Nicol, 2020[94]).

51. An important lesson from the experience of Colombia in mainstreaming gender policy that is presented in section 5 is that policy makers and civil servants need to be trained to understand why and how sex-disaggregated information must be collected. This collection effort is more efficient if it is not restricted to a single sector, which is why

Colombia is developing an intersectional information platform on gender (DANE, 2020[128]).

52. This section presents the experiences of Germany and the United Kingdom with funding academic research on the role and contribution of women in the agricultural sector. The experiences of New Zealand and Canada highlight how granular sex-disaggregated data can be collected along the food supply chain.

53. While detailed sex-disaggregated data on farm employment has been collected at the national and federal levels in Germany via the annual Agricultural Structure Survey,[33] the contribution of women to agriculture and social cohesion in rural areas and their living conditions was poorly understood. To overcome this information gap, the Federal Ministry of Food and Agriculture (BMEL) funds a national research project carried out by the Federal Research Institute for Rural Areas, Forestry and Fisheries (Thünen, 2022[129]) and the University of Göttingen. The rural women's organization (*Deutscher Landfrauen Verband*) was instrumental in advocating for a new nationwide study. In the study report that will be completed in 2022, several fields of action will be considered, including:[34] the legal status of women, pension schemes, the review and expansion of advisory services for women in agriculture, improving public infrastructure in rural areas, access to land, and support schemes. First preliminary results show that women farmers often do not receive an adequate pension. Since 1994, farmers' spouses have to contribute to the agricultural pension scheme in order to secure at least a certain level of pension. They can be exempted only if they work off the farm for a revenue exceeding defined thresholds. It is observed that families occasionally use this exemption; which can be considered to contribute to the overall situation of inadequate pension of many women farmers in Germany.

54. To design more inclusive policies for a resilient and sustainable farming sector[35] and in the context of the Future Farming & Countryside Programme, in 2021 the Department for Environment, Food and Rural Affairs (DEFRA) of the British Government explored the role and needs of women entrepreneurs in agriculture (CCRI, 2021[130]). They conducted a literature review, developed focus groups, and undertook interviews and an inventory of women farming networks. This research builds on previous evidence collected to inform the Women in Agriculture (WIA) programme in Scotland.[36]

55. Micro-Data Linking[37] practices can be used to better understand the extent and characteristics of the participation of women along the food value chain. For instance, the Canadian Employer-Employee Dynamics Database (CEEDD) looks at women's business

[33] Ergänzungsprogramm der Agrarstrukturerhebung.

[34] Consultation with Zazie von Davier and Susanne Padel, Thünen Institute of Farm Economics.

[35] Consultation with Hannah Baker, Social Researcher, Future Farming Analysis and Evidence, DEFRA.

[36] The Scottish Government first commissioned research in 2017; which highlighted issues impacting women and resulted in the establishment of the Women in Agriculture Taskforce. In 2019, the Taskforce published a final report with recommendations (Scottish Government, 2019[188]). Consequently, additional research explored the challenges of rural childcare, unconscious biases, and the training needs of women in agriculture in more depth (Scottish Government, 2021[166]). WIA-funded training pilots for leadership and entrepreneurship have been launched and will be evaluated (Scottish Government, 2021[166]).

[37] Micro-data linking (MDL) is an important cornerstone in the development of statistical insights, including the characteristics of female employment and entrepreneurship in food systems. It is particularly useful in limiting additional respondent burden (Luppes and Nielsen, 2020[189]).

ownership and the performance of women-owned enterprises (Grekou, Li and Liu, 2018[131]). Thanks to this database, the Government of Canada is able to produce comprehensive and detailed evidence on the contribution of women working in the food supply chain. Agriculture and Agri-Food Canada and Statistics Canada joined forces to collect data on the distribution of the total number of women working in the food and beverage (F&B) value chain at different stages of the food supply chain.[38] In 2016, most women in the F&B value chain were employed in the food services and drinking places sub-sector (Figure 3.1), and were more likely to be employed than self-employed (Statistics Canada, 2016[132]).

Figure 3.1. Women working in the food and beverage value chain in Canada are concentrated in services and in wholesale and retail

Distribution of men and women working in the food and beverage value chain, by stage in Canada

Source: (Statistics Canada, 2016[132])

56. In New Zealand, the Integrated Data Infrastructure (IDI) allows for a precise measure of the size of the women labor force in food systems. IDI is a large research database providing detailed industry and occupation microdata on business owners, people and households, through tax data (StatsNZ, 2020[133]). The Ministry of Primary Industries and the Ministry for Women used IDI and Linked Employer-Employee Data (LEED) to understand gendered labour dynamics in primary industries and business ownership by subgroups. The primary industries make up one in every seven jobs in New Zealand (Ministry of Primary Industries, 2021[134]) and will need to attract a diversity of people to the workforce in the future.

57. The report "Human capabilities in the primary industries" (Ministry of Primary Industries, 2021[134]) provides a breakdown by sex, age and education across the value chain (production, processing and commercialisation and total) of several sub-sectors of New Zealand's primary industries (red meat and wool, dairy, horticulture, seafood, support service) over the period 2004 – 2019. The findings of the analysis indicate that in 2019 the

[38] Consultation with Maricela Segura, Research & Analysis Directorate, Agriculture and Agri-Food Canada.

share of the female workforce was highest in the arable sector (47%), primary industries focused on the domestic market (44%) and the horticulture industry (42%). Moreover, the Ministry for Women has analysed top-level industry data from the IDI to understand business ownership by gender among Pacific (Ministry for Women, 2021[135])and Māori peoples (Ministry for Women, 2019[136]). These data insights are used to avoid future labor shortages or breakdown, especially in the agri-food sector.[39]

4. Policies addressing gender inequality and evidence gaps on assessing effectiveness

58. The aim of this section is to present the non-exhaustive experiences of several OECD countries in the process of implementing specific policy programmes to address gender aspects across food systems. National experts in Australia, Canada, Chile, Colombia, Germany, Japan, New Zealand, Spain, Switzerland and the United Kingdom collaborated with the OECD.[40] They provided information on the situation of women workers and entrepreneurs in food systems and associated policy programmes. Gender aspects related to food systems demand-side policies are briefly covered in Box 4.1.

59. Section 4.1 discusses the specific policy tools of food systems that support women entrepreneurs in the primary sector. Section 4.2 presents economy-wide policy tools that can be applied to food systems to support women entrepreneurs and workers. Several countries implement a policy mix that combines different policy instruments to recognize and support women across food systems. The experience of Japan is presented in Box 4.2. Section 4.3 looks at how to measure the effectiveness of policies related to women in food systems.

Box 4.1. Gender and food systems demand-side policies

Demand-side policies to shift diets towards sustainable and healthy diets can be classified according to the OECD "four-track" policy approach, developed by Giner and Brooks (2019[80]):demand-side public interventions (e.g. education programs); voluntary collaborations with the food industry (e.g. food labelling); government regulation (e.g. restrictions on food marketing strategies); and fiscal measures (e.g. food taxes).

Food preferences and consumer behaviour tend to differ according to gender. Women are often the main food shoppers in households and are disproportionately represented among low-income households. Men tend to cook less and have less nutrition education skills.

Research looks at the gendered impact of food consumption policy instruments in high-income countries. It is found that educational interventions may have a higher impact when targeting separately men with lower incomes and poor health conditions and women with lower education (Stran and Knol, 2013[137]) (Su et al., 2015[138]). Grocery vouchers for healthy foods are especially effective in improving the nutritional value of low-income women (Hardin-Fanning and Gokun, 2014[139]). Nudges, food taxes and restrictions on food marketing strategies appear to have similar results on men and women (Dolgopolova, Toscano and Roosen, 2021[140]) (Evers et al., 2018[141]) (Arad and Rubinstein, 2018[142]) (Blakely et al., 2020[143]). Governments could further explore

[39] Consultation with Chris Gilman and Deb Potter, New Zealand Ministry for Women.

[40] Experts were asked to provide answers to questions formulated in a questionnaire (Annex C.).

whether certain policy instruments could be tailored to specific target groups to improve the cost-effectiveness of public investments.

Many evidence gaps remain on gender-based impacts of food systems demand-side policies. Additional research in real-world settings and the collection of detailed, updated and sex-disaggregated data on food preferences and consumer behaviour is necessary to differentiate incentives for men and women, and to inform the design of national food consumption policies.

4.1. Food systems policy tools supporting women entrepreneurs

60. Some countries have developed policies that directly target women entrepreneurs in the primary sector. These policies aim to recognise the rights and needs of women farmers, and to support access to land, finance and markets.

4.1.1. Recognising the rights and needs of women in family farms

61. Extending social welfare and subsidies to spouses in family farms can overcome their lack of legal status as they often work informally. For instance, as a result of its gender budgeting policy, Iceland's Ministry of Finance reformed the Agricultural Products Act in 2012 to extend social welfare and farm subsidies to spouses in family farms (Government of Iceland, 2015[144]). This experience could be scaled up to protect them from unemployment, illness, or work accidents. In Switzerland, various measures were proposed to better recognize the needs of women in farming, including compulsory social protection, as part of the development of Agricultural Policy After 2022 (AP22+)[41].

62. In the United Kingdom, the Big Farming Survey demonstrates the vulnerability of women farmers to mental health issues (RABI, 2021[145]). Research commissioned by DEFRA looked at women farmers' specific health and safety needs, which resulted in the implementation of an awareness campaign and online training, and to the introduction of grants for the purchase of adequate health and safety equipment.[42]

4.1.2. Supporting access to land and equipment

63. Spain introduced in 2012 a shared ownership policy to overcome limited access to land ownership by women as compared to men.[43] This policy aims to incentivise the new registration of shared ownership of agricultural holdings and allows the affiliation of spouses or partners of holders to the social security system. It complements the existing social security contribution cut for spouses or partners of the owner of holdings. The shared ownership of farms formalises equal profit sharing and the consideration of both owners as direct beneficiaries of payments that the holding receives.

64. To increase women's entrepreneurial activities in farming, governments could also simplify the administrative barriers and funding criteria that hamper business creation (excessive red tape, time constraints, legal requirements, labor market regulations and

[41] AP22+ is currently suspended.

[42] Consultation with Hannah Baker, Social Researcher, Future Farming Analysis and Evidence, DEFRA.

[43] Law 35/2011is available at https://www.mapa.gob.es/en/desarrollo-rural/temas/igualdad_genero_y_des_sostenible/Ley%20de%20Titularidad%20Compartida_tcm38-87397.pdf.

requirement of high project volume) (OECD, 2008[107]). In the farming sector, the Scottish Land Matching Service, administered by the National Farm Union Scotland (NFU), is an innovative policy tool that facilitates access to land.[44] Initially designed to respond to the lack of opportunities for young farmers to enter the sector, it is equally beneficial to women. The service is based on a register of landowners with farms that are available for rent. It then matches available land with people interested in entering the sector, thereby easing the process of starting or joining a joint farming venture.

65. In addition to land renting linkages, Scottish farmers have formed farm machinery rings that benefit 7 000 members. [45] Buying farm machinery is often a hurdle, especially for new entrants. These rings allow farmers to share farm machinery and may help reduce the barriers for women farmers, although no detailed analysis is available on this. The report commissioned by the Scottish Government on the role of women in the agriculture sector underlined the significant underrepresentation of Scottish women in farming organisations (Scottish Government, 2017[146]).

4.1.3. Supporting access to finance and markets

66. Limited access to financial resources is a major factor that reduces women's access to land, technology and productive assets, especially in the capital-intensive agricultural sector. Canada and Chile have implemented credit programmes for women in agricultural and rural economies. In 2019, Farm Credit Canada (FCC), a federal commercial Crown corporation under the Ministry of Agriculture and Agri-Food, launched the Women Entrepreneur Program to support lending and create resources specifically for women entrepreneurs. Over a three-year programme, almost CAD 1 billion was invested to respond to the specific needs identified by women, including increased access to capital, to start or grow their business. Similarly, the Chilean Institute for Agricultural Development (INDAP) under the Ministry of Agriculture developed the credit-financing programme for rural women *Adelante Mujer Rural*. This programme aims to support rural women to invest and acquire capital to develop their economic activity by offering long- and short-term credits at preferential interest rates.

67. Given the barriers faced by women entrepreneurs across food systems, several governments support women entrepreneurs in food systems by providing specific payments and granting access to markets. Spain's Rural Women Programme offers payments targeted at rural women.[46] Over the 2014-2020 period, the Autonomous Development Programme (PDR) and the National Rural Development Programme (PNDR) included positive discrimination measures in favour of women. In this context, grants for investments in the processing, commercialisation, and development of agricultural products were offered in priority to women. The 2019-2023 National Support Program for vineyard restructuring and reconversion prioritises farms under shared ownership and women farm holders in certain autonomous communities.[47] In the new Spanish Strategic Plan under the Common Agricultural Policy (CAP), gender equality is formulated as a specific objective (N°8) and will likely receive additional funding.

[44] More information is available at https://slms.scot/.

[45] Information is available at https://scottishmachineryrings.co.uk/.

[46] More information is available at https://www.mapa.gob.es/es/desarrollo-rural/temas/igualdad_genero_y_des_sostenible/subvenciones-ambito-estatal-pac/default.aspx.

[47] More information is available at https://www.boe.es/eli/es/rd/2018/11/02/1363.

Public food procurement programmes targeted at women have been introduced in several countries. The Food Acquisition Programme (*Programa de Aquisição de Alimentos*, PAA) and the National School Meal Programme (*Programa Nacional para Alimentacão Escolar*, PNAE) have been implemented in Brazil primarily to reduce the high rural poverty rates of women smallholders by opening up channels for the commercialization of their products (Moraes and and Rocha C., 2020[147]). The experimental study by Valencia et al. (2021[148]) indicates that women in households participating in the PNAE were more empowered. This empowerment was correlated to more diversified farming systems, greater levels of agrobiodiversity, and the use of agroecological practices.

4.2. Economy-wide policy tools supporting women workers and entrepreneurs

68. Policy tools that are not specific to food systems are implemented across OECD countries to enhance the contributions of women workers and entrepreneurs across food systems. They deal with time spent on providing unpaid care work, gender equality in businesses, enhanced visibility of women, specific training needs, and improving the attractiveness of rural areas.

Box 4.2. Japan's Future Agriculture Changed by Women policy programme (2021-2025)

The Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) is currently implementing the Future Agriculture Changed by Women policy programme over the period 2021-2025. This programme has been developed in response to the declining share and aging of women in the Japanese agricultural workforce (MAFF, 2020[149]) (MAFF, 2020[150]). It is a comprehensive policy package that includes a mix of policy measures to attract women to the agricultural sector, to develop women's activities in rural areas, and to promote women's leadership. It encompasses managerial and leadership training for women, childcare facilities, peer support groups, and improvement of working conditions. The programme has set the following targets for 2025: the share of certified farmers who are women should increase by 5.5%, the share of agricultural committee members who are women should reach 30%, and the share of women leaders in agricultural cooperatives should reach 15%.

Source: Consultation with Mr. Hiroshi Zaitsu, Deputy Director in charge of women's empowerment issues in the Ministry of Agriculture, Forestry and Fisheries

4.2.1. Providing paid parental leave and childcare options to ensure equality

69. Developing childcare facilities can provide more opportunities for women to participate to the workforce (Gromada and Richardson, 2021[151]). Japan, for example, is in the process of supporting the development of a childcare system in rural communities as part of the 2020 – 2025 policy project For the Promotion of Future Agriculture Changed by Women (Box 4.2).

70. When mothers have to take time off work to take care of their newborn, they can be disadvantaged in the labour market (Thévenon and Solaz, 2013[152]). To foster gender equality, parents working in food systems should also be entitled and encouraged to take parental leave; a job-protected leave for employed women and men, which begins before childbirth which then extends for several months afterwards (Gromada and Richardson, 2021[151]). In 1974, Sweden was the first country to replace gender-specific maternity leave

with parental leave. This parental leave concerns all persons socially insured, even those who are self-employed (Marynissen et al., 2019[153]). However, men farmers in Sweden tend to make less use of this right because of the difficulties in finding a competent replacement (Eriksson and Hajdu, 2021[154]).

71. Governments can promote the equal distribution of unpaid domestic work within family farms. For instance, the Swiss association for agricultural and rural development (AGRIDEA[48]) receives support from the Swiss government to provide educational material, publications, and training courses to teach small family holdings on the tools to integrate household and family tasks into its overall planning. In this context, Agroscope, the Swiss centre of excellence for agricultural research, disseminates LabourScope. This is a free web application[49] that facilitates the task of calculating the working hours involved in the production process on family farms. The aim is to enable a new distribution of tasks between men and women. Governments could also provide increased funding to social assistance organisations; which would allow women to reduce care work within the household and allow them to undertake paid activities.

4.2.2. Improving women's representation in leadership positions and fostering equal pay

72. Canada has developed a policy package that aims to enhance the representation of women in leadership positions in the agriculture sector. The AgriDiversity programme (2018-2023) launched under the federal Canadian Agricultural Partnership (CAP), Agriculture and Agrifood Canada aims to help diverse groups, including women, to take on a greater leadership role.

73. Gender quotas and mandatory gender gap reporting can lead to improved representation of women in private and public leadership positions and equal pay. In the United Kingdom, since 2015 all companies with more than 250 employees are legally required to publish annually their data on the gender pay gap (Husseini, 2018[27]) (Tatum, 2018[28]). This measure does not automatically eliminate the gender pay gap (Gulyas, Seitz and Sinha, 2021[155]), but it does allow consumers and governments to hold companies accountable for unequal pay. Experimental studies found that pay transparency increased the likelihood that women are hired in occupations with above median wage compared to the mean before the introduction of the policy (Duchini, Simion and Turrell, 2020[156]) (Bennedsen et al., 2019[157]).

74. There are examples of voluntary self-reporting targets by industry stakeholders. In the food industry, for example, several multinational companies have introduced voluntary targets for gender parity in management. For instance, 51% of Danone's managers and directors were women in 2019; this followed the implementation of the "gender in leadership" strategy that aimed that 50% of Executive Directors would be women (Southey, 2020[158]).

4.2.3. Enhancing visibility of women across food systems

75. Challenging gender-based discriminatory social norms can be achieved by improving visibility of women across food systems and by involving them in the policy process (IFPRI, 2021[159]). Governments can support the development and enhanced participation of women's networks. For example, the Ministry for Primary Industries in

[48] Association suisse pour le développement de l'agriculture et de l'espace rural.

[49] Available at https://www.agroscope.admin.ch/agroscope/fr/home/themes/economie-technique/sciences-du-travail/labourscope.html

New Zealand supports Rural Woman New Zealand.[50] This network has 4 000 members across 300 branches. It grants annual Business Awards[51] that highlight innovation, creativity, and entrepreneurial excellence in rural communities. Community funds are also available to members for assistance during crisis, and for training and educational purposes.

76. The New Zealand Government and Regional Councils seek involvement and input from Rural Women New Zealand membership when developing their policies.[52] Similarly, the Australian Government funds the National Rural Women's Coalition[53] under the Women's Leadership and Development Program to ensure that the voices of Australian rural women are heard in the policy making process (Australian Government, 2022[160]). Many national organisations that represent rural women take part in the Associated Country Women of the Word (ACWW) to amplify the voices of rural women at the international level (ACWW, 2022[161]). ACWW has a consultative status with the UN Economic and Social Council and the FAO. Enhancing further international collaboration across women networks has the potential to highlight the need to meet the challenges that rural women face.

77. Advertising positive women role models can contribute to shifting traditional narratives on women's role and contribution across food systems. Research undertaken on the Australian farming sector (Sasse, 2017[162]) highlights how the promotion of role models can help parents running family farms give their daughters an equal chance and mentorship for farm succession.

78. The International Day of Rural Women was established in 2007 by Resolution 62/136 of the UN General Assembly to recognize "the critical role and contribution of rural women, including indigenous women, in enhancing agricultural and rural development, improving food security and eradicating rural poverty" (United Nations Assembly General, 2007[163]). This International Day takes place annually on 15 October, one day prior to World Food Day.

79. Several countries have introduced Rural Women Awards to recognize the contribution of women to rural development. Since 2010, the Spanish Excellence Rural Women Awards (*Premios de excelencia a la innovacion para mujeres rurales*) recognises the work of rural women.[54] Similarly, the AgriFutures Rural Women's Award run by AgriFutures Australia, an organisation funded by the Australian Government to support rural industries, recognizes inclusive leadership of women involved in Australia's rural industries.[55] Brazil launched the annual *#Mulheres Rurais* (Rural Women Workers) campaign in 2015 to improve the visibility of rural women's work, improve the rights of rural women, and support gender equality. Moreover, the National Family Farming Seal is a tool to communicate the origin and characteristics of products to consumers. It was

[50] More information available at https://ruralwomennz.nz/.

[51] Available at: https://ruralwomennz.nz/home/nzi-rural-women-new-zealand-business-awards/.

[52] Consultation with Angela McLeod, Manager, Policy and Leadership and Development, Rural Women New Zealand.

[53] More information is available at: https://www.nrwc.com.au/.

[54] The awards distinguish women in five categories: agricultural innovation, innovation in fishing and aquaculture, innovation in economic diversification, communication and the trajectory of support to rural women. More information is available at: https://www.mapa.gob.es/es/desarrollo-rural/temas/igualdad_genero_y_des_sostenible/premios-excelencia/default.aspx

[55] Available at: https://agrifutures.com.au/people-leadership/rural-womens-award/

reinforced in 2019 by the Ministerial Ordinance No. 161 and includes information on women-led family farming (OECD (forthcoming)[164]).

80. At the industry level, food systems stakeholders have developed their own women's networks to expand the presence of women, as well as to attract them. The International Dairy Foods Association launched the Women in Dairy network in 2020 to create a forum to foster mentoring, build networking opportunities, and encourage leadership.[56] In New Zealand, the Dairy Women's Network[57] was created in 1998 as a sister not-for-profit organisation of DairyNZ, the industry organisation for New Zealand's dairy farmers. The Dairy Women's Network aims to develop and educate women to add value to their dairy business. It is funded by partnerships with major stakeholders of the dairy sector in New Zealand including Balance Agri-Nutrients and Fonterra. The Meat Business Women[58] network was created in 2015 to help promote the meat sector as a positive career choice for women. It now operates a supportive networking community in the United Kingdom, Ireland, Australia, and New Zealand.

4.2.4. Providing education and training tailored to women's needs

81. Education is a tool to enhance gender diversity and participation of women in food systems. For instance, Chile, Switzerland and Scotland provide specific training programmes for women in agriculture. The Chilean Rural Women Programme aims to support rural women to raise their incomes and develop production activities over a three-year period. It consists of training in four areas: personal empowerment, organizational development, and entrepreneurial and technical skills.[59]

82. In Switzerland, there are special empowerment courses for women in agriculture to take on leadership. These courses are offered by the Swiss Farmers' and Rural Women's Association (SBLV) (2022[165]). A training programme for women migrant workers in the agri-food industry[60] was introduced in 2009 with the aim to improve both the professional situation and incomes of low-skilled women in the production and processing of food. The programme is delivered through continuous training and provides a qualification certificate.[61]

83. The 'Be Your Best Self' training programme for women in agriculture was introduced in Scotland as part of the WiADP (Scottish Government, 2021[166]). This programme was evaluated via interviews and questionnaires, with researchers finding that it had positive impacts on women in agriculture. Participants felt more optimistic about their future in the industry and acquired knowledge on the benefits of diversity. (Scottish Government, 2021[166])

[56] More information is available at: Women in Dairy - IDFA

[57] More information is available at : Home - Dairy Women's Network (dwn.co.nz)

[58] More information is available at : Our Story - Meat Business Women

[59] Consultation with Mariana Espinoza Altamirano, National Institute for Agricultural Development of Chile.

[60] Available at https://www.projektsammlung.ch/topbox/detail/584967a0cb646b0d40001238?lang=fr&.

[61] Consultation with Kate Dassesse, Federal Office for Agriculture, Switzerland.

Improving the attractiveness of rural areas

84. OECD work on gender and the environment (2021[167]) highlights that improving public infrastructure in rural areas is of paramount importance in making the rural economy more attractive. Research undertaken on low and middle income countries (Berg et al., 2017[168]) shows that investment in transportation networks not only foster the economic potential and attractiveness of rural areas, but enhance the welfare of households. In addition, improving access to communication networks and services in rural areas can contribute substantially to greater gender equality (OECD, 2021[167]).

85. The use of the internet, digital platforms, mobile phones and digital financial services, for example, can help women earn additional income, increase employment opportunities, and access knowledge and digital government services. OECD work on the digital gender divide (2018[169]) has pointed to a range of factors that underpin lower use of digital technologies by women, including barriers to access, affordability, lack of education, and sociocultural norms. It has also provided insights on the positive social and economic impacts of greater gender inclusion considerations when enhancing the development of digital technologies. Changing sociocultural norms can be achieved through training programmes. The Alliance for Affordable Internet has joined the Rural Women's Alliance to develop training programmes to help rural women in Latin America actually adopt and use digital technologies and foster entrepreneurship (A4AI, 2018[170]). In the United States, the DreamBuilder[62] programme developed by the Freeport-McMoRan foundation proposes to empower women through free online entrepreneurial training.

86. All projects that aim to make rural areas for women more attractive need to be tailored to fit the needs of their target population and to take into account the diversity of population groups living in rural areas, including culture, ethnicity, and climatic conditions.

4.3. Evidence gaps on addressing policy effectiveness

87. This section presents different tools that can be used by national governments to measure the effectiveness of their programmes that intend to advance gender equality.

4.3.1. Applying the OECD methodology of measuring "Distance to SDG Targets for Women and Girls" to food systems

88. The United Nations' 2030 Agenda for Sustainable Development constitutes an overarching framework of 231 indicators to monitor progress on fundamental well-being. Of the 231 indicators, the FAO (2021[171]) has identified 23 as linked to food and agriculture. Of these 23 indicators, 14 can be disaggregated by sex. They relate to SDG 1. Poverty Eradication, SDG 2. Food security and nutrition, SDG 5. Gender equality and employment, and SDG 8. Inclusive and sustainable economic growth.

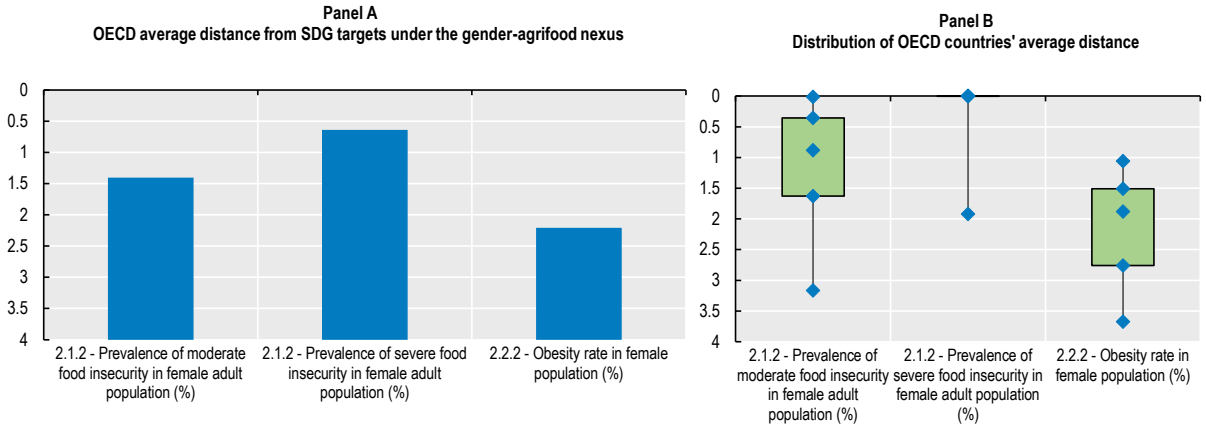
89. Comparable information across all OECD countries is only collected for three of these indicators: the prevalence of moderate food insecurity (Target 2.1.2), the prevalence of severe food insecurity (Target 2.1.2) and the prevalence of obesity (Target 2.2.2). The standardised methodology developed by Cohen & Shinwell (2020[172]) to measure the distance between where OECD countries currently stand and where they should be in 2030 in order to meet their commitment was applied to this limited set of indicators to measure

[62] See https://dreambuilder.org/.

the performance of OECD countries on achieving Targets 2.1.2 and 2.2.2 under the gender-food systems nexus[63].

90. Figure 4.1 shows that on average OECD countries are still far from achieving SDG targets on malnutrition and moderate food insecurity among women. Panel A shows that on average OECD countries are furthest from achieving the target on women's obesity rates. While OECD countries are close to the target on the prevalence of severe food insecurity in adult population of women, OECD countries are further away from targets on moderate food insecurity among adult women. Panel B highlights large differences among countries. It indicates that while some countries have reached the targets, others are still far away. It appears from Panel B that no OECD country has reached the target on women's obesity rate (Indicator 2.2.2), in contrast to the target for severe food insecurity for women (Sub-indicators 2.1.2).

Figure 4.1. OECD countries are still far from achieving SDG targets on malnutrition and moderate food insecurity for women



Note: Panel A shows the average distance that OECD countries need to travel to reach each target. Distances are measured in standardised units, from 0 (indicating that the 2030 target is reached) to 4, which is the distance most OECD countries have already surpassed on most targets. Bars show OECD countries' average performance against targets. Panel B shows the distribution of OECD countries' distances to targets; distances are expressed in standardised units, while dots refer to the OECD median distance. Box boundaries indicate the first and third quartiles of the country distribution, while whiskers indicate the 10th and 90th percentiles. Detailed information is available in Annex C.
Source: Authors computations based on United Nations Global SDG Database, https://unstats.un.org/sdgs/indicators/database/ and OECD Statistics, https://data.oecd.org/healthrisk/overweight-or-obese-population.htm

91. The SDG data analysis above shows that sex-disaggregated data on the gender-agrifood nexus is scant. Sex-disaggregated data must be collected more systematically across SDG indicators in order to better track progress towards gender equality and women empowerment, including in food systems.

4.3.2. Evidence gaps on the effectiveness and impacts of policy instruments

92. Strong *ex ante* and *ex post* gender evaluative frameworks are necessary to effectively drive change towards gender equality (Downes, von Trapp and Nicol, 2017[127]). Governments can use *ex post* gender impact assessments to measure the impact and

[63] Methodological information is provided in Annex C.

effectiveness of policies introduced to advance gender equality. The results of these assessments can be used to evaluate the cost-effectiveness of measures introduced and revaluating resource allocations. Some mechanisms to conduct *ex ante* gender impact assessment were presented in Section 2.1.1. *Ex post* gender impact assessments are, however, not yet available for recently implemented food systems-related policies.

93. Table 4.1 summarises the policy tools presented in Sections 4.1 and 4.2 and describes evidence needs to inform or to monitor the impacts of policies supporting women entrepreneurs and workers across food systems. These evidence needs and the construction of related comparable specific indicators should be prioritised when countries invest in closing evidence gaps on gendered aspects related to food systems.

Table 4.1. Policy instruments to support women workers and entrepreneurs in food systems and evidence needs

Sections	Target	Policy type	Policy objective	Policy tool	Evidence needs	Examples provided in the report
Section 4.1	Women entrepreneurs	Food systems tools	Recognising the rights and needs of women in family farms	Extending social welfare to spouses in family farms	Identify spouses in family farms	Iceland and the reform of the Agricultural Products Act
				Raising awareness on risks specific to women in food systems	Identifying these risks	DEFRA research and the Big Farming Survey in the United Kingdom
			Supporting access to land	Introducing shared ownership policies and facilitating information sharing about land ownership	Develop databases that match people willing to get out of the farming sector with people willing to get in	Spain and the shared ownership policy ; Scotland and the Land Matching Service
			Promoting access to finance and markets	Offering payments targeted at women or designed with a gender lens	Identifying areas where women entrepreneurs lack access to finance and/or where the contribution of women could be beneficial	Women Entrepreneur Program in Canada ; Credit financing programmes for rural women in Chile; Spain and the Rural Women Programme ; Brazil and the Food Acquisition and National School Meal Programmes
Section 4.2	Women entrepreneurs and workers	Economy-wide tools	Reducing the time spent on unpaid care work	Provide childcare facilities	Evaluation of needs for childcare	Japan and the 2020 – 2025 policy project "for the promotion of future agriculture changed by women"
				Financial suport / App to promote the equal distribution of unpaid domestic work	Evaluation of paid/unpaid working time	Training provided by the association for agricultural and rural development and the LabourScope app in Switzerland
			Improving the representation of women in leadership positions and fostering equal pay	Gender quotas	Share of women in leadership positions	Voluntary self-reporting targets by industry stakeholders
				Mandatory gender gap reporting	Information on gender pay gap across firms in the sector	United Kingdom and mandatory gender pay gap reporting ;
				Promoting leadership programmes for women	Overview of the target population	AgriDiversity Programme in Canada
			Improving women visibility	Encouraging women networks	Identifying areas where the visibility of women should be improved	Rural Woman New Zealand; Australia and the National Rural Women's Coalition;
				Promoting acampaigns that highlight the contribution of women in food systems	Identifying areas where the visibility of women should be improved	International Day of Rural Women; Spanish Excellence Rural Women Awards ; Australian AgriFutures Rural Women's award; Brazilian Rural Women Workers campaign; industry inistiatives such as the Dairy Women's Network in New Zealand

			Providing tailored education and training	Encouraging the participation of women in training programmes	Identify areas and methods of training that fit women needs and aspirations	Chilean Rural Women Programme; Swiss training programme for women migrant workers ; Scottish "Be Your Best self" training programme
			Making rural areas more attractive	Provision of essential services such as health services, education, mobility and digital connectivity in addition to childcare	Evaluation of pre-existing facilities/services	Training programmes provided by the Alliance for Affordable Internet and the Rural Women's Alliance in Latin America ; DreamBuilder programme in the United States
				Investments in infrastructures		

94. The International Initiative for Impact Evaluation[64] (3ie) also points to numerous evidence gaps on methodologies to measure the effectiveness of policy instruments that are designed to advance gender equality in food systems. For example, the effects of food systems interventions on food security and nutrition outcomes in low- and middle-income countries constitute an evidence gap. Few studies exist on the effectiveness of interventions aimed at improving women's decision-making power (Moore et al., 2021[173]). Moreover, there is limited understanding of policies that result in gendered inclusion or exclusion in aquaculture value chains (Kruijssen, McDougall and van Asseldonk, 2018[23]).

5. How to address gender aspects in food systems: A roadmap

95. This section provides a roadmap (Figure 5.1) to effectively address gender evidence gaps in food systems. These evidence gaps relate to both the general baseline of gender impacts in food systems and to the effectiveness of policy responses. This roadmap identifies different consecutive steps to be undertaken by policy makers.

96. Box 5.1 highlights the experience of Colombia in closing evidence gaps on gender and food systems. The country is in the process of implementing the different steps that are described in the roadmap.

97. As for any other types of policies, the first step is to apply a gender and well-being lens when developing policies related to food systems. Section 3.1 highlights some countries' experiences in mainstreaming gender-budgeting.

98. The second step is to identify and close evidence gaps on gender and food systems. With proper research funding, this can be done by collecting sex-disaggregated data to better understand women's contributions to food systems and potential synergies and trade-offs across the different dimensions of the food systems' triple challenge (Section 3.2).

99. The third step is to develop and implement a mix of policy instruments that address gender inequality and support women in food systems (Sections 4.1 and 4.2). These instruments will be selected according to their capacity to actually overcome identified barriers or to support identified benefits. Synergies and trade-offs with other policy areas need to be evaluated. Table 4.1 identifies evidence needs to inform these policy instruments.

100. The fourth step is to monitor and evaluate policy impacts and their effectiveness (Section 4.3). This must be done at the national and international levels to track progress

[64] Information is available at https://www.3ieimpact.org/.

on commitments and to compare the performance of countries. Analysis in Section 4.3 on measuring the remaining distance to SDGs shows that sex-disaggregated data on international targets under the food systems-gender nexus is limited. At the national-level, *ex ante* and *ex post* gender impact assessment are useful tools.

101. The final step is to adjust policy responses that deal with gender aspects related to food systems. Some countries concentrate on enhancing and recognising women's contributions to the agriculture sector. Other countries have developed a policy mixture to enhance gender equality across all sectors. In all cases, the adjustment of the set of policy instruments needs to take into account ethical considerations, organisational and budgetary aspects, as well as effectiveness.

Figure 5.1. Closing evidence across gaps on gender and food systems: a roadmap

Step 1: Highlighting gender issues in policies related to food systems	What are the needs, barriers and contribution of women working in food systems?
	Which costs and benefits are associated with considering their needs and supporting positive contributions?
	Which synergies and trade-offs exist between different policy areas and outcomes?
	=> Mainstreaming gender-budgeting
Step 2: Identifying and closing evidence gaps	Which evidence do I need to assess their needs, barriers and contributions?
	What data is available/ missing for the assessment? How can I best collect it?
	=> Collecting sex-disaggregated data and funding research
Step 3: Developing and impementing policy instruments that address gender inequality in food systems	What needs do women have to overcome barriers and contribute to food systems?
	What policy instruments are most relevant and effective to overcome identified barriers/ to support identified benefits?
	Which evidence do I need to assess costs, benefits, trade-offs and synergies of responding to women's needs?
	=> Selecting and implementing relevant policy instruments
Step 4: Monitoring and evaluating policy impacts and effectiveness	How does the policy impact women and men?
	How effective is the policy in achieving policy goals?
	What data do I need to measure impacts/ policy effectiveness?
	=> Collecting data on gendered impacts and policy effectiveness
Step 5: Adjusting policy responses in place and how they are managed	What goal needs to be addressed with the policy intrument?
	Which policy instruments are most relevant and fit for purpose?
	Which adjustments are needed?
	=> Assessing the options and selecting/adjusting relevant instruments

Box 5.1. Colombia's experience in overcoming evidence gaps on food systems

Step 1 – Creation of the Rural Women Directorate in 2010

In the context of a national plan to mainstream equal gender participation, led by the Vice-Presidency, Colombia created a Rural Women Directorate[1] in 2010 as part of the Colombian Ministry of Agriculture and Rural Development to coordinate, design, and evaluate all plans, projects and policies in agriculture, fishing and rural development with a gender equality focus.

With the creation of this Directorate, Colombia sought to diminish the poverty rate of rural women and to increase the number of women as beneficiaries of the programmes managed by the Ministry. The creation of this Directorate was strongly supported by the well-established organisation of rural women Asociación de Mujeres Productoras del Campo (ASOMUPROCA).

The first task of the Directorate was to make sure that gender issues were prioritised and taken into account in all activities of the Ministry. The Directorate aimed to develop a better understanding of women's contribution to the Colombian agro-food system and of the problems they faced, including the extent of non-remunerative labour, social issues, poverty, and violence.

Step 2 – Measurement of the contribution of rural women to Colombian food systems

This assessment was undertaken via a thorough measurement exercise (Colombian Ministry of Agriculture, 2018[174]). The Directorate liaised with all of the Ministry's entities that were in charge of collecting data and information related to agriculture and rural development. It raised awareness on why gender aspects should be better captured in statistics and accompanied the entities in the collection of sex-disaggregated information (Colombian Ministry of Agriculture, 2018[174]).

Some surveys and focus groups involving rural women were organised in different regions of the country to overcome some of the knowledge gaps. In particular, the Directorate is working on measuring and providing monetary value to non-remunerated care and household activities and including these into the National Accounts Systems through Care Economy Satellite Accounts. Based on this measurement effort, a review of the situation of rural women is published on an annual basis (DANE, 2021[175]).

Step 3 – Implementation of a policy mix to support rural women

The second task of the Directorate was to respond to the problems that were identified. Their response was organised around three pillars that aimed to improve:

- *Access to land*: Rural women in Colombia have little access to land property because they can neither buy land nor get access to credit as land is mostly owned informally. Different strategies were set up to overcome these problems. Women were able to request specific subsidised credits to buy land.[2] The land agency *Unidad de Planificación Rural Agropecuaria*[3] developed a gender strategy with a new line of benefits for rural women. Applications by women to the land agency benefitted from affirmative action.
- *Access to agricultural extension and education programmes*: Rural women in Colombia did not benefit in the past from the agricultural extension and education programmes provided by the Ministry. Over the last ten years,

however, programmes have been redesigned and re-oriented. At present, half of the overall programmes' recipients are rural women living at high poverty levels.

- *Entrepreneurship and finance skills*: The Directorate aims to accompany rural women in developing their entrepreneurship skills by providing easily accessible information on how to set up a company, how to use credit, and how to manage finances within the household.

The Directorate also works directly with the Colombian vice-presidency to tackle the problems of poverty and violence. The vice-presidency funds about 30% of the Directorate's budget.

Step 4 – Monitoring and evaluation of policies

The Directorate is now involved in the evaluation of the programmes that have been developed, with the work of *Unidad de Planificación Rural Agropecuaria* already evaluated.

The Directorate is currently developing an awareness-raising toolbox for policy makers and civil servants. This toolbox will address the situation of women and other population groups that are vulnerable, such as persons with disabilities and sexual minorities.

The Directorate also participates in the development of an intersectional information system on women in Colombia to inform policy makers in all fields (DANE, 2020[128]).

1. See https://www.minagricultura.gov.co/ministerio/direcciones/Paginas/Direccion-Mujer-Rural.aspx.
2. More information is available at: https://www.minagricultura.gov.co/noticias/Paginas/MinAgricultura-lanza-estrategia-%E2%80%98Mis-Finanzas-Cuentan%E2%80%99-en-apoyo-a-las-mujeres-rurales.aspx.
3. The agency is in charge of land and territorial management: http://www.upra.gov.co/.

Source: William Herrera, Rural Women Directorate, Colombian Ministry of Agriculture and Rural Development.

6. Main lessons

102. Many countries across the world are committed to achieving gender equality. The OECD Gender Data Portal provides an inventory of all the analyses related to gender issues undertaken at the OECD. The special focus of this report on gender and food systems aims to inform national policy makers and the international policy debate on how to overcome evidence gaps on gender and food systems in order to achieve gender inclusive food systems that promote gender equality and women's empowerment. Some OECD countries' experiences in developing a better understanding of women's contributions to food systems and responding to gender inequality have been highlighted. This final section summarises major take-home messages for policy makers.

6.1. Developing better evidence on gender and food systems is a necessary first step in reaching gender equality

103. Gender equality is recognised as a universal human right and gender mainstreaming was established as a strategy to reach gender equality. Addressing gender aspects and fostering gender inclusion can have positive impacts on the food systems' triple challenge of ensuring food security and nutrition for a growing population, supporting the livelihoods of millions of people working in the food supply chain, and doing so in an environmentally sustainable way. However, these positive synergies are often invisible because sex-

disaggregated data is not collected. Given the lack of such information, the contributions of women as entrepreneurs, workers and consumers across food systems are difficult to acknowledge and it is not possible to take into account both women's and men's interests and concerns at all stages of policy processes.

104. This report calls for the development of better evidence on gender and food systems as a necessary first step in the path towards gender equality. Sex-disaggregated information needs to be collected on all the roles that men and women play across food systems: as entrepreneurs, in particular in the primary sector, as workers, and as consumers.

105. The national experiences highlighted in this report show that the information collection effort cannot be undertaken in silos. New digital technologies can enhance the information collection process, limit respondent burden, and multiply the possibilities of data analysis by facilitating connections across databases. Publishing regular reports on the situation of women across food systems is a way to raise awareness on their roles, on the barriers they face, and on the lack of gender inclusion and gender equality.

6.2. Developing better evidence on gender and food systems allows to better target policies supporting women in food systems

106. This report has highlighted several policy instruments that aim to support women across food systems. These instruments are either food systems specific – in particular for those that focus on supporting women entrepreneurs in the primary sector – or are economy-wide tools that can be applied to food systems. OECD countries tend to use a combination of these policy instruments to enhance gender equality. Given the diversity of women's situations and political priorities, governments must decide on the best mix of policy instruments to reach their goals. Collecting detailed, comparable, sex-disaggregated information can enable a better targeting of policies that support women in food systems. The cost of developing such evidence is low compared to the costs of policy programmes.

6.3. Developing better evidence on gender and food systems is necessary to measure policy effectiveness

107. Gender mainstreaming and the development of better evidence on gender and food systems are strongly connected. The implementation of gender budgeting or of any policy that aims to address gender inequality in food systems calls for the undertaking of *ex ante* and *ex post* gender impact analyses. Such analyses necessitate the development and monitoring of policy-specific sex-disaggregated indicators.

6.4. Developing better evidence on gender and food systems requires coordinated action by countries

108. Governments and international organisations must work together to overcome evidence gaps on gender and food systems, and thus ensure that data is consistent and comparable. This report has highlighted the efforts undertaken by several countries to overcome evidence gaps. However, at the international level, this analysis shows that few measures of SDG indicators in the gender - food systems nexus are collected. Only two demand-side indicators presented in the Food Systems Dashboard are sex-disaggregated. Comparable information on the contribution of women and men as entrepreneurs and workers across food systems needs to be better captured at the international level. Future OECD work could be undertaken in this area.

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Annex A. Glossary

Empowerment: The expansion of assets and capabilities of individuals to participate in, negotiate with, influence, control, and hold accountable the institutions that affect their lives (OECD, 2018[91])

Ex ante gender analysis: A gender analysis is normally performed during the design stage of legislation/regulation/policy/programme. Its objective is to assess whether the planned legislation/regulation/policy/programme corresponds to the needs and expectations of women as men. It can also comprise the assessment of the context and the identification of potential difficulties of implementation. (OECD, 2018[91])

Ex post gender analysis: Gender analysis is conducted to evaluate the impact of a legislation/regulation/policy/programme after it has been introduced or completed. The ex-post gender analysis aims at examining whether the objectives of a legislation/regulation/policy/programme have been achieved. It also examines the long-lasting effects of a legislation/regulation/policy/programme on women and men. (OECD, 2018[91])

Food Systems: The food system includes all the elements, such as the environment, people, inputs, processes, infrastructures, institutions, markets, and activities, that are related to producing, processing, distributing, retailing, and consuming food, and to their effects, including socioeconomic, health-related and environmental outcomes (OECD, 2021[1]).

Gender: Socially constructed and socially learned behaviours and expectations associated with females and males. All cultures interpret and elaborate the biological differences between women and men into a set of social expectations about what behaviours and activities are appropriate and what rights, resources, and power women and men possess. Like race, ethnicity, and class, gender is a social category that largely establishes one's life chances and participation in society and in the economy. (OECD, 2018[91])

Gender Analysis / Impact Assessment: Assists policymakers to incorporate a gender perspective into policies through taking account of the different needs, characteristics and behaviours of the affected groups. Gender analysis can be applied to legislation, policy plans and programmes, budgets, reports, and existing policies and services. Ideally, it should be done at an early stage in the decision-making process so that policies can be changed or abandoned if necessary. Although there are some policies where it is clear that gender plays a central role, there are other policies where the relevance of gender is less obvious. These are as a result sometimes labelled gender-neutral, for example health and safety and regional or town planning. In these examples, it may be tempting to see such policies, goals and outcomes affecting people as a homogeneous group. If policies are mistakenly perceived as gender-neutral, opportunities will be missed to include the views of different groups of women and men in policy formation and delivery and, in turn, to misjudge the different effects on each group, and the systems and organisations that support them. (OECD, 2018[91])

Gender Budgeting: Integrating a clear gender perspective within the overall context of the budget process, through the use of special processes and analytical tools, with a view to promoting gender-responsive policies (Downes, von Trapp and Nicol, 2017[127]).

Gender Equality: Equality under the law, equality of opportunity, and equality of voice (the ability to influence and contribute to policy making). This encompasses the concept of

gender equity in terms of women's and men's fair and equal access to information, services, justice, resources, benefits and responsibilities (OECD, 2018[91])

Gender Mainstreaming: The process of assessing the implications for women and men of any planned action, including legislation, regulations, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality (OECD, 2018[91]).

Gender impact assessment: Gender impact assessment is defined as an ex-ante evaluation, analysis or assessment of a law, policy or programme that makes it possible to identify, in a preventative way, the likelihood of a given decision having negative consequences for the state of equality between women and men (European Institute for Gender Equality, 2022[176]).

Gender-transformative: Approaches that "go beyond the 'symptoms' of gender inequality to address the social norms, attitudes, behaviours, and social systems that underlie them" (Hillenbrand et al., 2015[177]).

Empowerment: The expansion of assets and capabilities of individuals to participate in, negotiate with, influence, control, and hold accountable the institutions that affect their lives (OECD, 2018[91])

Ex ante gender analysis: A gender analysis is normally performed during the design stage of legislation/regulation/policy/programme. Its objective is to assess whether the planned legislation/regulation/policy/programme corresponds to the needs and expectations of women as men. It can also comprise the assessment of the context and the identification of potential difficulties of implementation. (OECD, 2018[91])

Ex post gender analysis: Gender analysis is conducted to evaluate the impact of a legislation/regulation/policy/programme after it has been introduced or completed. The *ex post* gender analysis aims at examining whether the objectives of a legislation/regulation/policy/programme have been achieved. It also examines the long-lasting effects of a legislation/regulation/policy/programme on women and men. (OECD, 2018[91])

Annex B. Evidence gaps on the participation of women in food systems

Sex-disaggregated labour statistics in food-related activities appear as quite detailed for low- and middle income countries, where disaggregation is available by activity, by skill level and by sex. This level of disaggregation is not available for many high-income countries. For most countries, the data does not allow to distinguish women's employment in subsectors within food-related activities under agriculture and fishing, manufacturing and services.

In terms of women's entrepreneurship, detailed data is available for all high-, low- and middle-income countries on women's ownership and leadership by subsectors for manufacturing and services, although food-related activities cannot be disaggregated systematically. Detailed data on the extent of women entrepreneurship in individual segments of the food value chain may be available in national statistics.

Sex-disaggregated data is available for multiple farm indicators, such as education level and skills of farm manager, earnings and farm size in European Union Member States. Nonetheless, within family farms, detailed data on the decision-making role of women within farm businesses is often missing. For low and middle income countries publicly accessible sex-disaggregated data is generally available on land and labour indicators related to the agriculture sector (FAO Gender and Land Rights Database).[65]

In its Gender Disaggregated Labor Database[66], the World Bank is compiling data on the share of employment and wage by sector (agriculture, manufacturing, services) disaggregated at the level of economic activity, by skill level and by sex. The data is available for low- and middle-income countries, and excludes high-income countries such as the United States, Canada, some European Countries, or New Zealand.

The OECD Annual Labor Force Survey[67] contains sex-disaggregated data for high-income countries on employment by activities and status, including food wholesale and retail and food services. Overall, this disaggregation by activity is not available at the level of ISIC classes.

In terms of women's entrepreneurship, the World Bank Enterprise Survey contains data for all high-, low- and middle-income countries on the share of firms with women's participation in ownership and with majority women ownership, the share of firms with a woman as top manager and the proportion of women working as permanent full-time workers. The data is disaggregated by subsectors for manufacturing and services. The manufacturing sector includes the food manufacturing sector for some countries in the dataset. The service sector does not differentiate between retail activities. More detailed data on the extent of women entrepreneurship in individual segments of the food value chain may be available in national statistics or private industry.

At the level of the food supply chain, data on inclusion in managerial positions along the food supply chain is fragmented; it is available in farming and the restaurant industry, in the United States and the United Kingdom. Moreover, previously identified databases do not contain detailed evidence on women's leadership, ownership, skills level, pay and income. ILOSTAT (2022[178]) provides data on the average hourly earnings of employees

[65] Available at: https://www.fao.org/gender-landrights-database/en/

[66] Available at: https://datatopics.worldbank.org/gdld/

[67] Available at: https://stats.oecd.org/Index.aspx?DataSetCode=ALFS_POP_LABOUR

by sex (in local currency for LMICs and HICs) in order to track progress on SDG indicator 8.5.1. The data is broken down in broad categories of occupations. Managers and skilled agricultural, forestry and fishery workers are the only categories of occupation related to food systems. For the same categories, the gender wage gap by occupation is also available.

Annex C. Methodology

C.1 Identifying inventor's gender in IP5 Patent families

IP5 Patents

The data is based on a set of patents filed at the five largest IP offices (IP5) to better reflect the inventive activities worldwide. These cover the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (CNIPA) and the United States Patent and Trademark Office (USPTO). IP5 patent families are defined as sets of patent applications filed in several IP offices to protect the same invention, covering at least one of the IP5, provided that another family member has been filed in any other office worldwide (see (Dernis et al., n.d.[179]), and (Daiko Taro et al., 2017[180]), for further discussion on the use of IP5 families). Patent families are reported according to the earliest filing date. The International Patent Classification (IPC) is used to allocate patents to technological fields (see (Schmoch, 2008[181])).

Identifying the Gender of Inventors

Inventors' genders were identified using gender-name dictionaries based on the first names by country, following the methodology described in Lax Martínez et al. (2016[182]). The gender allocation builds on the latest dictionaries published by the Intellectual Property Office of the United Kingdom (Intellectual Property Office, 2019) and the 'World Gender Name Dictionary' (WGND) developed by the World Intellectual Property Organization (Raffo, 2021[183]). It was complemented by the recent work by the USPTO for US-based inventors (USPTO, 2020[184]), as well as that of the Instituto Nacional de Propiedad industrial of Chile (INAPI) for Spanish inventors (INAPI, 2020[185]). For most countries, the share of inventors for whom the gender is identified is above 80%. For countries where many first names can indistinctively relate to women or men (this is particularly the case in Asian countries such as Korea or China), the UK IPO dataset was used as a priority, even though the proportion of identified genders using that dictionary was lower. Therefore, the results for some countries (China, Korea) should be considered with caution. Work is underway to improve dictionaries and overcome this issue.

C.2 Questionnaire on Gender and Food Systems sent to OECD country experts and stakeholders

1. Data Collection efforts

- Has your country implemented specific efforts on collecting data on female entrepreneurship/workers in the food supply chain?
    - We would be interested in information on the number/share of women employed in the different stages of the food supply chains and number/share in leadership positions, business owners.
    - We are also interested in data related to income / wage gaps.
- How different are food systems from other sectors?
- In which sub-sector or stage of the food supply chain can we find the highest female employment rates? What is the distribution?
- Why do some sectors have a higher female participation rate?
- At which stages of the food supply chain can we find the highest female entrepreneurship rates?

- Which organization, company, government body or stakeholders invested in getting access to relevant data on female workers/ entrepreneurs in the food supply chain?
- What organizations could be involved in the efforts towards collecting more data on female entrepreneurship/employment in the food supply chain?
- Which would be the benefits of having access to this kind of data?

2. Characteristics of female employment/entrepreneurship in food systems

- Are there specificities of female entrepreneurship across the food supply chain compared to other sectors of the economy?
- Are there specific barriers to female entrepreneurship in food-related activities that are different from other sectors?
- Why would you want to promote female entrepreneurship/employment in food-related activities of your country? What are the benefits? Are there some specificities in the food supply chain that make this convenient?

3. Policies for female employment/ entrepreneurship in food systems

- Has your country implemented specific policies to increase female entrepreneurship in food-related activities?
- What are the main stakeholders who could be included in the efforts to increase female entrepreneurship/ employment in food-related activities?
- Which policies are most effective in increasing women's participation as workers across the food-supply chain?
- Which sectors of the food industry are more (or less) compatible with the policies presented?

4. Policies targeting women as consumers

- Have you collected any data on the different impact of certain food consumption policy instruments on men and women (in terms of nutrition or environmental sustainability)? Could you provide information on such studies?
- Are there any examples of food consumption policies that were directly targeting women?
- Do large databases with specific gender-disaggregated data on consumer behavior and food purchasing habits exist?
- Which stakeholders may have access to this kind of data (e.g. agrofood companies, consulting companies)?

C.3 Identifying gender-related indicators

The OECD working paper "How far are OECD countries from achieving SDG targets for women and girls? Applying a gender lens to measuring distance to SDG targets" (Cohen and Shinwell, 2020[172]) bases its analysis on a dual approach: (i) a textual analysis restricted to indicator labels; (ii) a classification of indicators under the Inter-Agency and Expert Group on the SDGs (IAEG-SDG) according to type of data (individual-level indicators, policy or system-level indicators relating to gender, other (non-gender related indicators). The Inter-Agency and Expert Group on the SDGs (IAEG-SDG) has developed a dedicated work stream striving for data disaggregation for all SDG indicators.

An indicator is deemed to be gender-related if the indicator's name includes gender-related terms (e.g. men, women, boy, girl, gender). In addition, as some gender-relevant indicators do not refer explicitly to gender, the indicators were also classified manually according to individual-level disaggregation and gender-relevance. It should, however, be noted that there are inconsistencies between the indicator text and the disaggregation, most notably on Health (SDG 3), where most indicators are measured at the individual-level and could thus be measured for women and men (or for women only), but are not identified as gender-relevant according to the text analysis, i.e. do not have gender relevant wording. It should also be clarified that, even if the relevant SDG target is gender-relevant but the indicators are not, then these indicators are excluded from the analysis. Cohen & Shinwell (2020[172]) found 102 gender-related indicators out of a total of 231.

C.4 Measuring distance to SDG targets under the gender-agrifood nexus

Cohen and Shinwell's (2020[172]) standardised methodology rests on three elements: (1) selecting indicators and data; (2) setting end-values for the indicators; and (3) normalising the values to a common unit. First, data on the performance of OECD countries for indicator 2.1.2 was retrieved from the United Nations SDG Global Database. Data on indicator 2.2.2 was retrieved from OECD Statistics. Data is reported separately for women and men for both sub-indicators under indicator 2.1.2 and for indicator 2.2.2. To assess the performance of OECD countries on indicators measuring progress towards better food systems with a gender lens, female-specific data was used. For indicator 2.1.2, progress was measured using the following sub-indicators: Prevalence of moderate/ severe food insecurity in female adult population (%) and Prevalence of severe food insecurity in female adult population (%). For indicator 2.2.2, progress was measured using the following sub-indicator: obesity rate in female population, measured or self-reported (%). For each OECD country, values for the last available year were used. Measured female obesity rate was selected over self-reported female obesity rate when both were available. For comparability purposes, because data was missing for Turkey and Colombia on both sub-indicators 2.1.2, data for both countries on female obesity rate (2.2.2) was removed.

Second, the end value of 3% was set for each indicator. For indicators 2.1.2 and 2.2.2, countries need to minimize reported indicator values to reach targets. Third, in order to compare performance across different targets, indicator values are normalised using a modified version of the z-score (i.e. distance is expressed as the number of standard deviations – computed across all OECD countries in the most recent year with available data – a country is from reaching the target level).[68] Table A.C.1. in the Annex provides the reference standard deviation used to calculate distances from target. The "standardised

[68] In a standard z-score normalisation, the distance is expressed as the number of standard deviations away from the mean score of the variable in the current period, rather than from the target level to be achieved in the future.

difference" refers to the difference between the country's current position and the target end-value. The higher the distance, the further the country needs to travel to achieve its target. A zero distance means the country has already achieved the 2030 target. Negative scores mean the country already exceeds the target; for the purpose of the study, these negative values are reported as 0 (i.e. a country is given no premium for going beyond the target). For countries who have achieved a value of 3% or below, there is no distance from the target (i.e. the distance is equal to 0).

Table A C.1. Reference Standard Deviation

Indicator	Indicator label	Reference standard deviation
2.2.2	Obesity rate (%)	7,69
2.1.2	Prevalence of severe food insecurity in the adult population (%)	0,94
2.1.2	Prevalence of moderate or severe food insecurity in the adult population (%)	4,49

Note: The reference standard deviation is calculated using a fixed year, closest to 2015 (when SDGs targets were determined), and for total population.