

Mapping Food Policies Methodology

FIT4FOOD2030 has mapped more than 400 food policies adopted by European governments and at the Union level. The collected policies are classified according to policy goals, target (primary target & ultimate beneficiary), and instruments. The **policy goals** reflect the ultimate objective of the interventions and are classified as: Balanced and sufficient diets for EU citizens; Food safety; Reduced environmental impact; Viable and socially balanced EU agri-food business; Equitable outcomes and conditions. Furthermore, we include a cross-sectional R&I oriented goal, as several FNS R&I policies have more than one goal beyond the main purpose of increasing knowledge. These goals are also broken down into sub-goals for a more accurate classification of policy actions.

Each mapped policy is also classified in terms of the **target**, i.e. the societal groups that are affected by the policy. A distinction between the *primary target* (the group at which the policy is explicitly directed) and the *ultimate beneficiary* is also provided (e.g. a policy might act through the food industry with a view of benefitting consumers).

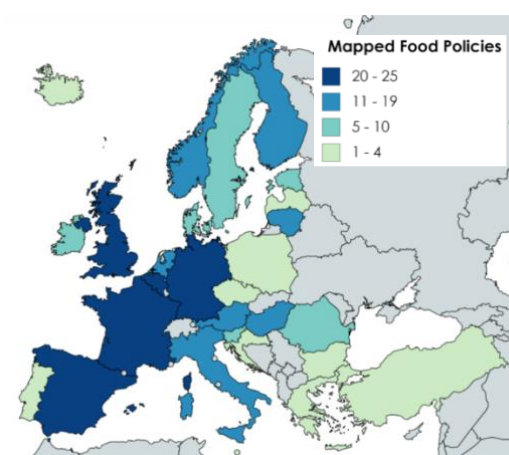
Finally, we consider **instruments**, that is the techniques or means through which policy makers pursue their goals (e.g. fiscal measures to promote private research, or food standards to regulate food production, etc.).

The sources for the policy mapping were: (a) already existing collections (NOURISHING database, SCAR qualitative mapping); (b) governmental web-sites of EU member states; (c) web-site of the European Commission; (d) academic databases (Web of Science, Scopus, Google Scholar).

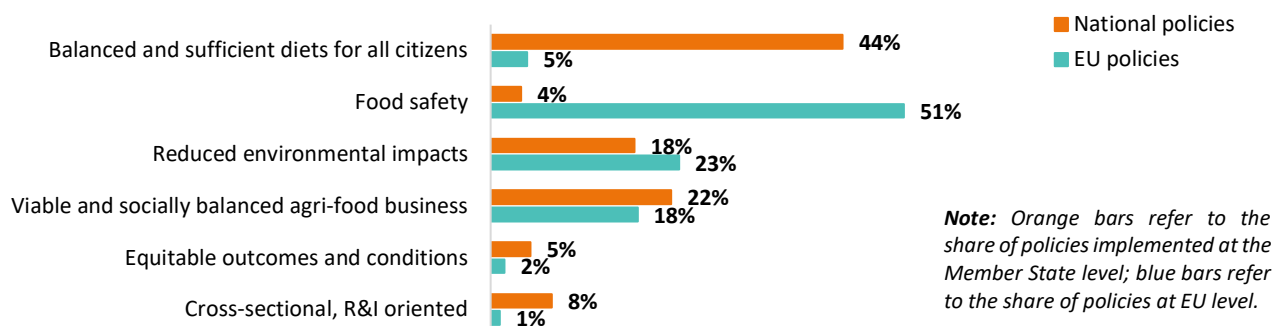
Results and their representitiveness

The dataset contains **460 policies** (as of 20th of March 2019), of which 281 have been implemented at the Member State level and 179 at the EU level.

Our policy mapping is comprehensive in scope (*i.e.* it includes examples for all policy goals, target and instruments), but not necessarily exhaustive, given the complexity and rapid evolution of the policy environment.



Proportion of mapped policies by GOAL



Would it be convenient to have a clearer **definition of roles** between the EU and member states (e.g. Balanced and sufficient diets vs. Food safety)? Does it help **coordination** across different goals?

Proportion of mapped policies by ULTIMATE BENEFICIARY

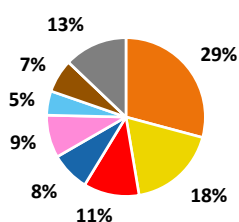


Note: *Consumers* are defined as citizen targeted in their act of consuming food (e.g. promoting a healthier diet), while the broader category defined as *society at large* includes benefits not necessarily associated with consumption (e.g. reducing greenhouse gas emissions). Other target beneficiaries should be self-explanatory.

Unsurprisingly, **consumers** and the **society at large** (total 74%) are the main beneficiaries of policies. *Is public intervention more likely to benefit the primary sector (farmers and fisheries, 17%) relative to the industry (7%)?*

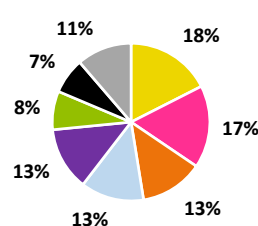
Proportion of mapped policies by PRIMARY TARGET

National policies



- Food industry
- Research sector
- Media
- Public authorities
- Others

EU policies

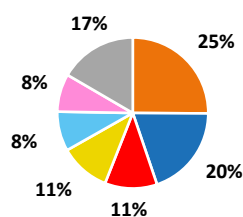


- Farmers
- Research sector for food industry
- Import/export companies
- Input suppliers
- School food services
- Consumers
- Fisheries
- Farmers & food industry

In general, most policies act through **farmers** and the **food industry**. National policies are mainly targeting the food industry. *Is it easier for national governments to act on the food industry?*

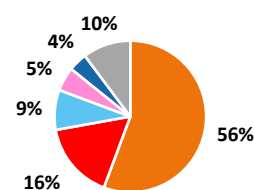
Proportion of mapped policies by INSTRUMENT

National policies



- Regulation
- R&I
- Border measure
- Information measure
- Food and agricultural standards
- Labelling measure
- Others

EU policies



Policy goal: Balanced and sufficient diets for all EU citizens

Food systems may shape health impacts through changing diets. Balanced and sufficient diets are determined by their contribution of energy, macronutrients and micronutrients to total daily body needs. Diet composition is a major determinant of not only the **increasing burdens of overweight and obesity** – which affect about 50% and 20%, respectively, of the EU adult population (WHO, 2018) – but also a number of **nutrient deficiencies, chronic diseases** and **non-communicable diseases** (NCDs), all considered significant causes of mortality and premature death in the EU. Eating habits have an important role to play in preventing these diseases and, accordingly, a number of strategic policies and actions have been adopted in the EU to improve health for all citizens and reduce health inequalities. Access to healthy diets has been undermined by economic hardship and, in this regard, the definition of **food and nutrition security** at the EU level is taken to address the heterogeneous socio-economic and demographic realities within the Union and the consequently diversified conditions of food utilisation and access.

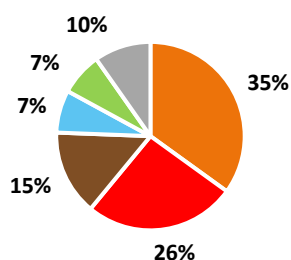
Subgoals

- ❖ **Reduced economic and social burden of diet related diseases**
- ❖ **Food security in EU**

99% of mapped policies aimed at promoting balanced and sufficient diets benefits **consumers**. ‘Consumers’ are defined as citizens targeted in their act of consuming food (e.g. promoting a healthier diet), which differ from the broader category defined as ‘society at large’ as it includes benefits not necessarily associated with consumption (e.g. reducing greenhouse gas emissions).

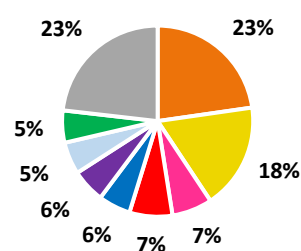
Proportion of mapped nutrition policies by PRIMARY TARGET

'Balanced and sufficient diets' goal



- Food industry
- School food services
- Media
- Consumers
- Education sector
- Others

All goals



- Food industry
- Import/export companies
- Research sector
- Fisheries
- Others
- Farmers
- School food services
- Public authorities
- Industry-based research

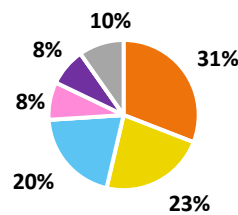
Policies targeting this goal privilege the **private sector** (food industry, school food services and the media) as their primary target.

*Could the **education sector** and **farmers** be more addressed as primary targets for policies aimed at reaching balanced and sufficient diets for all EU citizens?*

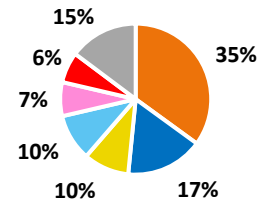
Proportion of mapped nutrition policies by INSTRUMENT

- Regulation
- Information measure
- Food and agricultural standards
- R&I
- Labelling measure
- Fiscal policy
- Border measure
- Others

'Balanced and sufficient diets for all' goal



All goals



Relative to other food policies, those aimed at improving diets seem to use **information measures** and **food and agricultural standards** more consistently than, for example, R&I instruments.

*Could the **R&I measures** be effective also in promoting a balanced and sufficient diet?
Is there room to target the R&I sector and/or use R&I instruments?*

*Are information measures effective in accompanying **fiscal policies** with clear messages to spark a sustained behavioural change and avoid 'substitution' (i.e. unspent money on subsidised health foods are used to buy unhealthy products)?*

Example of policy addressing the «Food security in EU» sub-goal: [Healthy Start scheme \(UK\)](#)

Policy	If you are pregnant or have a child under 4, the Healthy Start scheme can help you buy basic foods by providing vouchers to be spent on milk, fresh and frozen fruit and vegetables, infant formula milk, but also vitamins to support pregnancy and breastfeeding and vitamins for 6-months to 5-year-old children.
Primary target	Consumer
Instrument	Income support
FOOD 2030 priority & challenge	NUTRITION for sustainable and healthy diets – Tackling malnutrition and obesity



Relevant related trends in the food system



Policy goal: Food safety

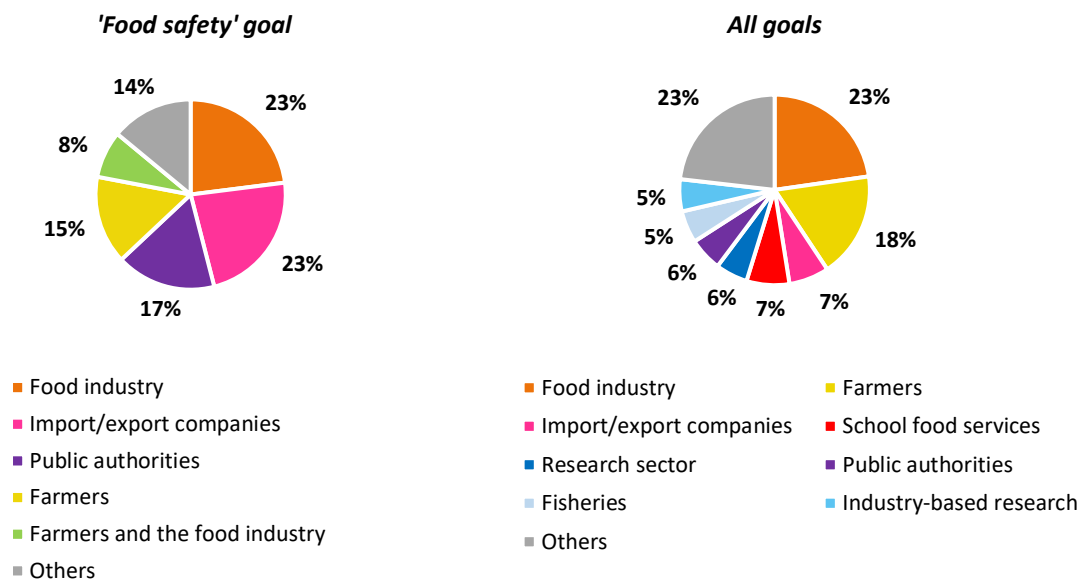
Food safety describes the impact of food on human health, and refers to “*all those hazards, whether chronic or acute, that may make food injurious to the health of consumer*” (FAO/WHO, 2003).

The European Commission’s guiding principle is to apply an integrated approach **from farm to fork** able to cover all sectors of the food chain and different types of actors. Accordingly, food safety policies aim at protecting consumers from **foodborne diseases** that can arise from food contamination during its production, processing, storage, transport, distribution and consumption, by setting appropriate standards and controls. Nevertheless, it is worth remembering that food safety policies not only focus on the protection of **human health**, but also on the health status and intra-Community trade of **animals** and animal products, as well as on **plants’** phytosanitary and quality standards.

All mapped food safety policies recognise the final players of the food chain, **consumers**, as their ultimate beneficiaries. Not only do consumers play the passive role of benefitting from the consumption of safe food, but they are also urged to effectively **protect** themselves against foodborne diseases in both food choice, storage and preparation in **their domestic environment**.

A food safety incident affects all firms (or farms) within the concerned sector, including those employing good safety practices. Is there a need for policies aimed at safeguarding/rewarding virtuous industries in a sector against moral hazard from less virtuous competitors?

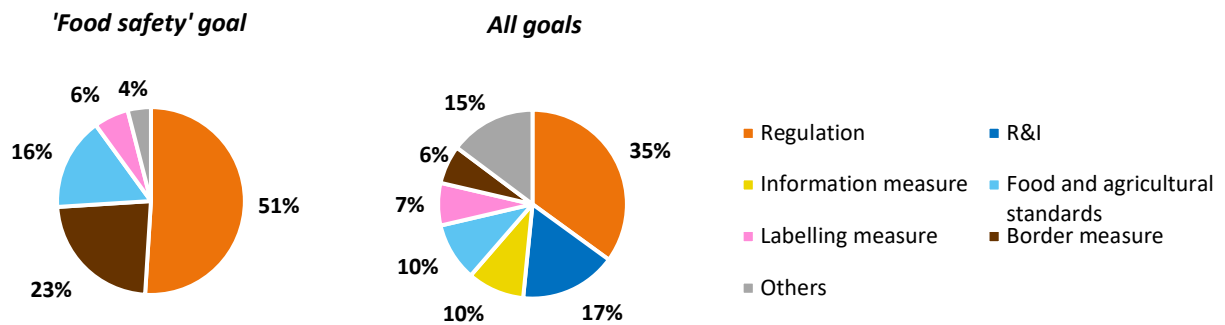
Proportion of mapped food safety policies by PRIMARY TARGET



The pie chart shows that good part of the food chain’s actors is covered by food safety policies, from the food industry and import/export companies to public authorities and farmers. However, from planting to consumption, there are many opportunities for food contamination.

*Should more emphasis be placed on **consumer** roles in ensuring food safety in the final stages of the food chain (home storage, home cooking, school consumption)?*

Proportion of mapped food safety policies by INSTRUMENT



Regulations, border measures and food standards are the main policy instruments used to help food businesses to produce safe food (90%).

*Being consumers the ultimate beneficiaries, should investments in **education and information measures** be fostered to ensure consumers' food-handling behavioural change towards the prevention of foodborne illness?*

Can labelling measures be improved as a mean to inform consumers?

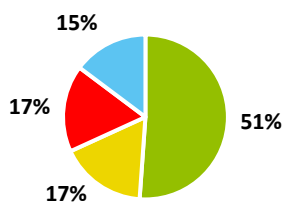
Outside EU research frameworks, **national R&I** interventions aimed at promoting food safety do not seem widely employed. *Is there a need to promote them?*

Policy goal: Reduced environmental impact

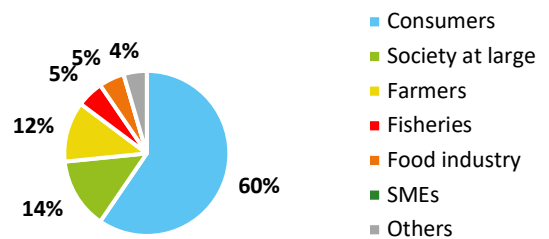
Many of today's environmental challenges are systemic and complex, as they have multiple and interdependent causes and impacts. The **agricultural sector** is one of the main land users in Europe and therefore has direct and indirect impacts on the environment, both contributing to and being affected by **climate change**. Faced with growing global demand and competition for resources, European food production and consumption patterns need to be seen from a **systemic perspective** that links agriculture, energy and food security and embraces all food system stakeholders. Indeed, a holistic approach and a reconnection of the various policies affecting these resources are essential for realising the SDGs and meeting the Paris Agreement on climate change.

Proportion of mapped environmental policies by ULTIMATE BENEFICIARY

'Reduced environmental impact' goal

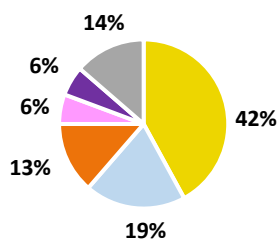


All goals

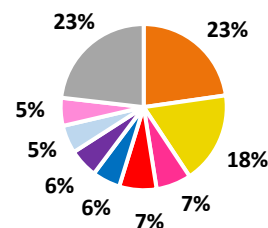


Proportion of mapped environmental policies by PRIMARY TARGET

'Reduced environmental impact' goal



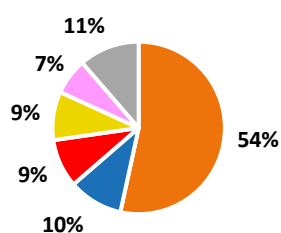
All goals



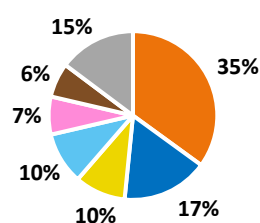
- | | | |
|----------------------|-------------------------|-------------------------|
| Food industry | Farmers | Import/export companies |
| School food services | Research sector | Public authorities |
| Fisheries | Industry-based research | Others |

Proportion of mapped environmental policies by INSTRUMENT

'Reduced environmental impact' goal



All goals



- Regulation
- R&I
- Information measure
- Food and agricultural standards
- Labelling measure
- Border measure
- Others

Subgoals

Plant health policies aim to protect plants from harmful pests and diseases by preventing their introduction into the EU or spread within the EU and imposing eradication and containment measures in case of outbreaks.

Climate policies aim to limit greenhouse gas emissions, support organic production methods and regulate pesticides use through regulations, advice and grants.

Resource efficiency and waste management policies aim, on the one hand, to improve energy efficiency and promote the use of renewable energy and, on the other hand, to reduce waste and losses along the entire food chain.

Multiple subgoals policies address all sub-areas covered by the 'Reduced environmental impact' goal (e.g. by allocating funds for environmental programmes).

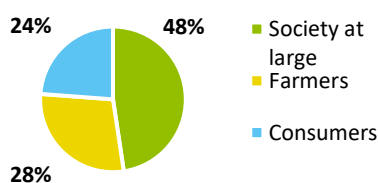
Water and soil management policies aim, on the one hand, to protect water quality, prevent and reduce its pollution and promote its sustainable use and, on the other hand, to preserve soil functions, prevent its degradation and restore it if degraded.

Animal welfare policies aim to raise animals' health status and ensure that they do not endure avoidable pain or suffering by obliging their owner or keeper to respect minimum welfare requirements.

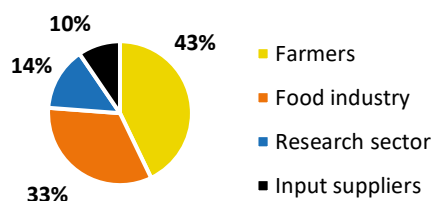
Biodiversity policies aim to conserve and sustainably use the biological diversity relevant for food and agriculture (e.g. by regulating the plant breeding sector, setting catch limits for fishing gears, protecting animal species at risk of extinction).

Climate

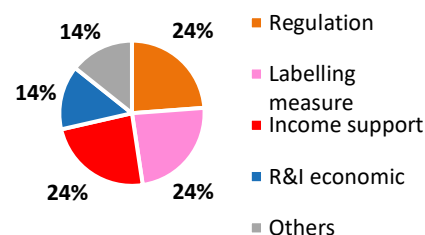
by ultimate beneficiary



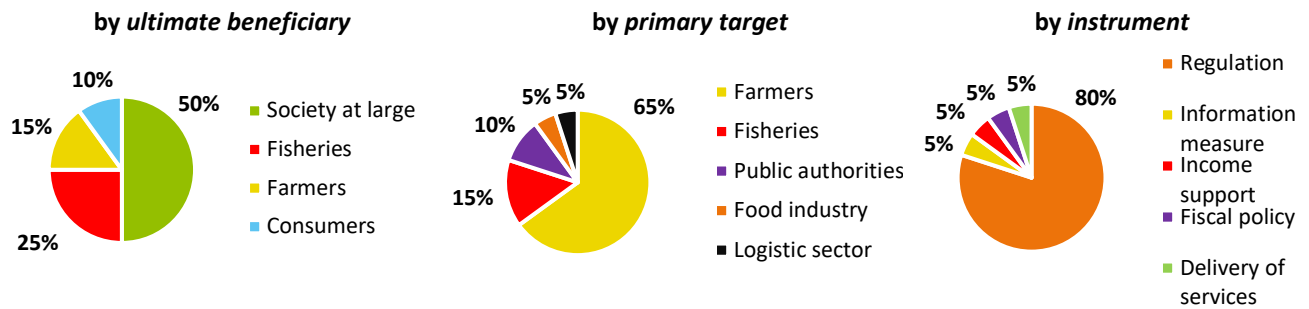
by primary target



by instrument



🐄 Animal welfare



Currently, the only EU system of compulsory labelling on animal welfare is the one for table eggs.

*May the **extension of compulsory labelling** to other types of animal production be effective in **orienting consumers' behaviour** towards welfare-friendly choices?*

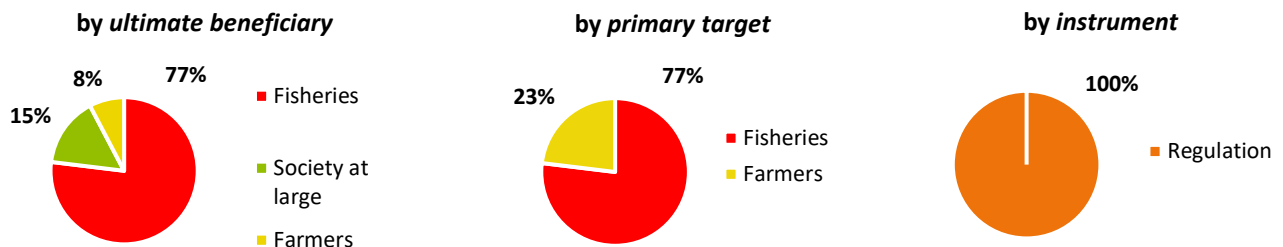
*Other than regulations, could **economic incentives to producers** be an effective instrument to improve animal welfare standards?*

*The **food industry** is a potential channel currently underexploited (5%), could it become a key primary target for animal welfare policies?*

*Beyond labels, can **consumer-oriented information measures** be improved to raise their awareness?*

Few policies seem to act through **food import-export companies** using border measures or education measures. *Could **bilateral technical cooperation** on animal welfare practices with non-EU trading partners be strengthened through **trainings** and **technical assistance**?*

🐟 Biodiversity



As far as plant varieties are concerned, the EU adopted the UPOV international model, according to which only new, distinct, uniform and stable crop varieties can be protected.

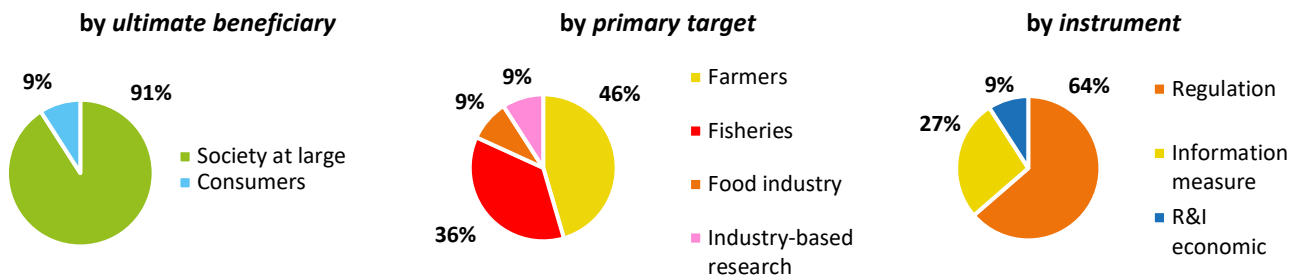
*How can **farmers' heterogeneous plant varieties** be protected at EU level?*

All mapped biodiversity policies are implemented through **regulations**.

*Could **information and education measures** better address, on the one hand, smaller farming realities by enhancing the creation of collaborative networks and, on the other hand, consumers and citizens by raising their awareness on the relevance of biodiversity at all stages of the food system?*

*Could **income support** be an effective instrument to reward those farmers and fishermen who comply with biodiversity-friendly principles?*

💧 Water and soil management

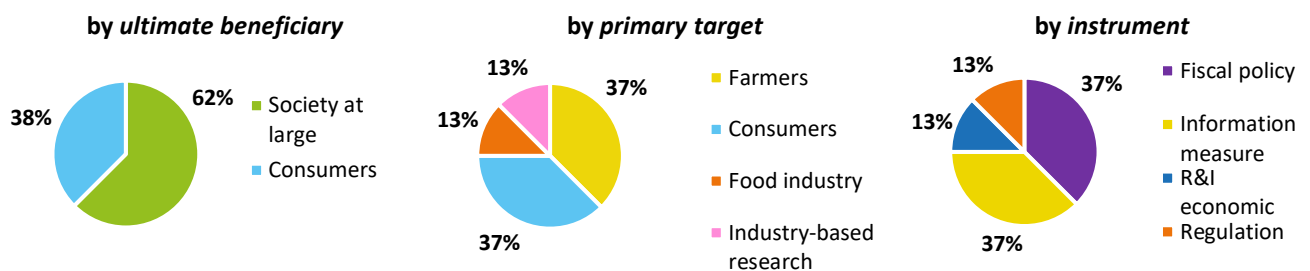


The **agriculture** (46%) and **aquaculture** (36%) sectors are the targets through which most of the mapped water and soil policies are carried out, as water and soil degradation can result from inappropriate farming and fishing practices. In turn, the decline of their ecological state inevitably reduces soil productive capacity and water quality and is therefore detrimental for both sectors.

On this basis, should farmers and fishermen ultimately benefit from these policies, besides contributing to their proper implementation?

*How can **public research** become more involved in identifying viable paths towards a more sustainable management of water and soil? How to encourage its direct collaboration with farmers, fishermen and the food industry to meet their practical needs and **co-create** management strategies?*

🏠 Resource efficiency and waste management



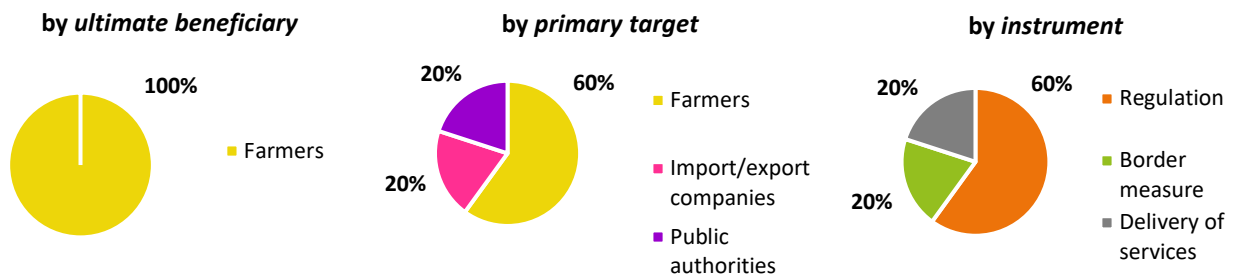
Better waste management can contribute to **creating jobs** in the food industry, including food SMEs, and **boosting competitiveness**. Should policy formulators consider **food industry** and **SMEs** as ultimate beneficiaries, rather than solely primary targets?

*Should **public authorities** play a more proactive role in enabling resource efficiency and waste management strategies at national and local level?*

*How can the **education sector** and **public research bodies** collaborate to meet this objective?*

*As for policy instruments, what is the role of **media** in raising awareness among citizens? Could media act in support of a more structured set of **education and information policies** regarding energy and waste? How should these urgent issues be treated in **schools**?*

Plant health



*How can plant health policies specifically benefit, on the one hand, the **society as a whole** and **consumers** and, on the other hand, the **food industry**?*

*What is the role of **public research bodies**?*

*Can **on-farm trainings** be an effective instrument to align best practices and transfer knowledge both vertically and horizontally?*

Policy goal: Viable and socially balanced EU agri-food business

The EU food system is built on a great number of highly diversified agri-food businesses of **different sizes** working **from local to regional to global scales**.

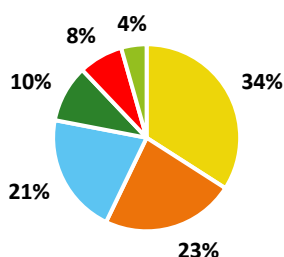
A viable agri-food business is a CAP objective as well, directly linked to the Commission general objective 1 “A new boost for jobs, growth and investment” as a large number of jobs in agriculture, food processing, food retail and food services depend on it. A key tool for reaching it is the fostering of a balanced territorial development that includes rural areas where most farmers live. From a social point of view, however, growth induced by increasing the long-term productivity can gradually lead to rural job losses in the agri-food sector, thus risking making it less socially balanced.

Subgoals

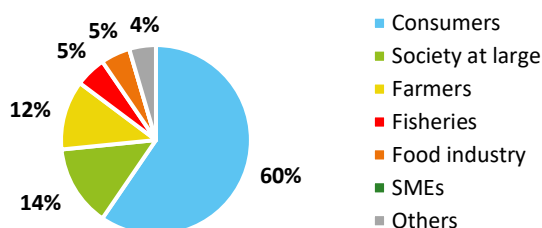
- ❖ **Competitiveness** (79%), defined as the ability of a firm, sector or nation to offer products and services that meet the quality standards of local and world markets, at prices that are competitive in relation to the offers of other firms or nations (EC, 2016).
- ❖ **Market regulation** (21%), in particular European directives regarding import/export arrangements, licenses, tariff quotas, specific market standards, common catalogues and related requirements for food products.

Proportion of mapped agri-food business policies by ULTIMATE BENEFICIARY

'Viable and socially balanced EU agri-food business' goal



All goals



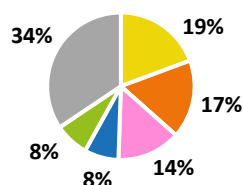
The majority of the mapped agri-food business policies addresses **farmers** (34%), followed by the **food industry** (23%).

Half of the economic turnover and value added and $\frac{1}{3}$ of the employment opportunities in the agri-food sector are generated by **SMEs** (FoodDrinkEurope, 2018).

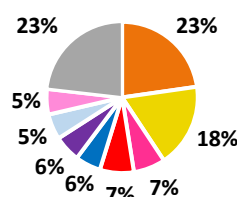
*Should they benefit more from agri-food policies to increase their **competitiveness**?*

Proportion of mapped agri-food business policies by PRIMARY TARGET

'Viable and socially balanced EU agri-food business' goal



All goals



- Food industry
- Farmers
- Import/export companies
- School food services
- Research sector
- Public authorities
- Fisheries
- Industry-based research
- Farmers & Food industry
- Others

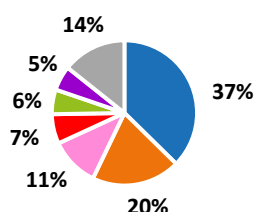
In comparison the all-goals level (6%), here the **research sector** plays a prominent role in enhancing the viability of the EU agri-food business (21%). However, the most relevant policy targets remain those who are simultaneously benefitting from the policies in question: **farmers** and the **food industry**.

From our mapping, some food policies incentivising the creation of **cooperative business models** have emerged with the aim to aggregate supply and reach additional markets, and the view of facing consumers' increased demands in terms of food quality, variety and traceability.

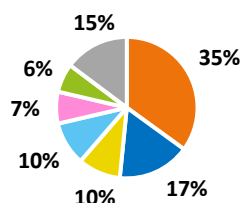
*Could the integration into cooperatives of differentiated sizes and activities provide agricultural producers with **better and more stable revenues**? Could they help smaller farm and food industry realities to achieve greater **competitiveness**?*

Proportion of mapped agri-food business policies by INSTRUMENT

'Viable and socially balanced EU agri-food business' goal



All goals



- Regulation
- Information measure
- Labelling measure
- Income support
- Others
- R&I
- Food and agricultural standards
- Border measure

In the context of this goal, policy makers are able to exploit the potential of **R&I** as a policy instrument (37%). The different specific tools into which the R&I instrument can be divided generally aim at identifying the beneficiary's research needs and, on this basis, providing support for investments, projects, trainings, transfers of knowledge, etc.

To reach this goal, the mapping highlights an underutilisation of **information measures** as a policy instrument. *Are they useful for SMEs, for example, to increase competitiveness?*

Policy goal: Equitable outcomes and conditions

Equity is an intrinsic element of food security as a basic human right, which, besides being a global challenge, has EU-specific features.

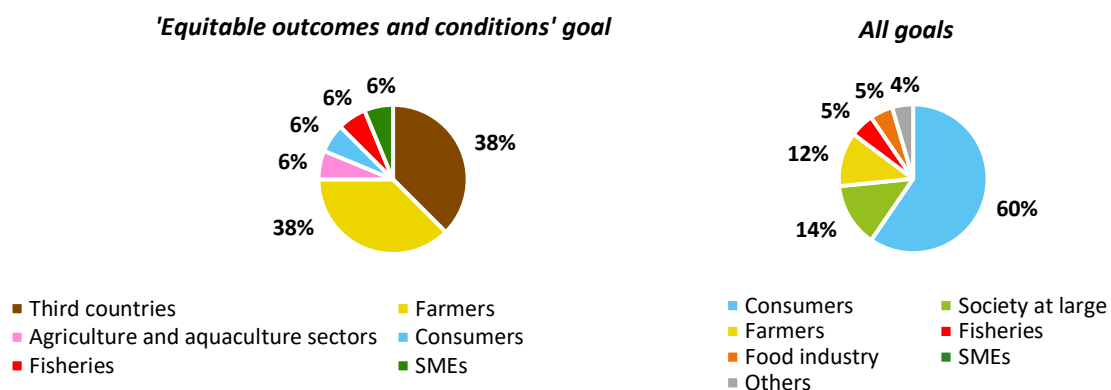
The mapped policies addressing this goal are relatively few compared to the general picture.

Given the emphasis on equity at European and global levels, is it reflected enough in terms of policies?

Subgoals

- ❖ **Aid and cooperation** – The EU provides substantial funding in support of both the improvement of food and nutrition security and the sustainable development of third countries' agriculture and rural areas.
- ❖ **Social cohesion in the EU** – Within the EU food system low-wage jobs, poor working conditions and the lack of opportunities to climb up the career ladder are still recurrent issues. An equitable food system would provide decent jobs to vulnerable societal groups and underinvested neighborhoods, boost incomes, attract additional businesses and contribute to economic and social cohesion within the Union.
- ❖ **Global food and nutrition security** – Quantitatively and qualitatively poor diets are always more responsible for the disease burden of the most vulnerable segments of the EU society. Indeed, in 2016 about 9% of the EU population was unable to afford a meal every second day (Eurostat, 2017) and poor food environments have been rapidly spreading, exacerbating diet-related health inequities.

Proportion of mapped equity policies by ULTIMATE BENEFICIARY



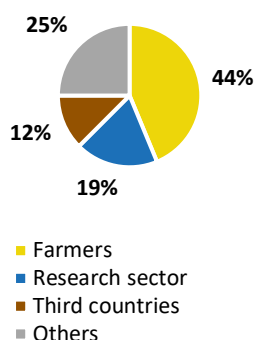
The majority of the mapped equity-related food policies benefits **third countries** (38%) and the **EU primary sector** (50% overall). Besides the improvement of farmers' and fishermen's **working conditions**, equity in the food system also regards the possibility for all citizens to have **access to healthy unprocessed food** at a decent price via expanded retail options.

*Should equity-related food policies address **consumers** and **society at large** to a greater extent?*

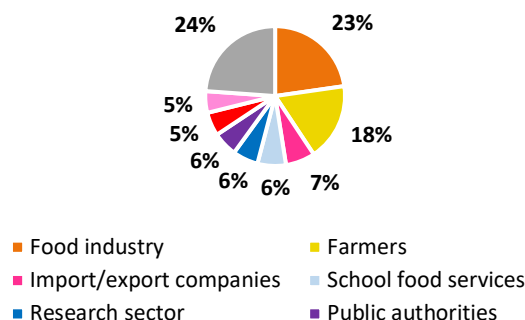
*Should they benefit individuals and social groups from the **urban environment** as well?*

Proportion of mapped equity policies by PRIMARY TARGET

'Equitable outcomes and conditions' goal



All goals

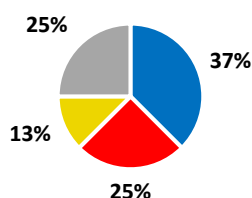


From our mapping, **farmers** represent those food system actors through which policy makers implement the greatest share of equity-related policies (44%). The mapped policies enforced through the **research sector** (19%) are formulated by the food and agriculture and the international development departments of Northern European countries' governments.

*Should more **bottom-up research activities and entities** be considered valuable means to reach this goal by policy formulators?*

Proportion of mapped equity policies by INSTRUMENT

'Equitable outcomes and conditions' goal



All goals



From the share of mapped policies carried out using **R&I instruments** (37%) – which are all of an economic nature –, the great majority are designed by governmental bodies to meet the '**Global food and nutrition security**' subgoal, thus mainly benefitting third countries.

Can R&I be effective in enhancing equity within European Member States as well?

*None of the mapped equity policies implies **border measures**. To what extent are they relevant cohesion between Member States?*

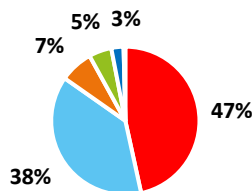
Farmers' income is vital for ensuring adequate supply of raw materials to the food industry and, ultimately, for enhancing food security. According to the Commission, about 27% of it is dependent on **public support**; likewise, our mapping points out that about a quarter of the mapped equity policies implies income support.

Are European food policies being effective in making farmers' profitability less dependent on public support?

Policy actor: Consumers

Across Member States, **household expenditure on food products** varies from 10% to 31%, with an average of 13,8% at EU level (FoodDrinkEurope, 2018). Consumers' behaviour reflects all their choices and decisions (at the household or individual level) on what food to acquire, store, prepare, eat and how to allocate it within the household, and is influenced not only by **personal preferences** (e.g. taste, convenience, values, traditions, culture and beliefs) but also by the **existing food environment** (e.g. food prices, income, knowledge and skills, time and equipment, social and cultural norms). Collective changes in consumer behaviour can open a pathway towards more sustainable food systems. From our mapping, it emerges that consumers act more as **ultimate beneficiaries** of food policies (262 policies) rather than their **primary targets** (16 policies).

On which GOAL do consumers-benefitting policies insist on?



- Balanced and sufficient diets for all EU citizens
- Food safety
- Viable and socially balanced agri-food business
- Reduced environmental impacts
- Cross-sectional, R&I oriented

The majority of food policies that benefit consumers focuses on **nutrition** (47%) and **food safety** (38%), as they represent the closest issues to the act of consuming food products.

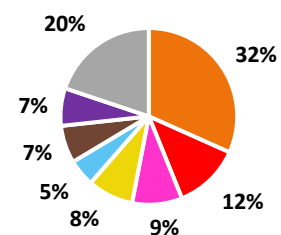
What can R&I-oriented policies do to benefit consumers?

Co-creation – a new people-engaging perspective where consumers are active participants of the development of new products – has rapidly taken hold, together with the spread of **smart domestic appliances** requiring consumers' acceptance.

*With this in mind, is there room to strengthen the role of R&I in designing **consumer-based policies**, rather than mostly focusing on industry-based ones?*

Through which TARGET do consumer-benefitting policies act?

As expected the **food industry**, **school food services** and **import/export companies** are the primary actors through which consumer-benefitting policies are implemented (53% overall), with the view of guaranteeing balanced and sufficient diets and food safety.



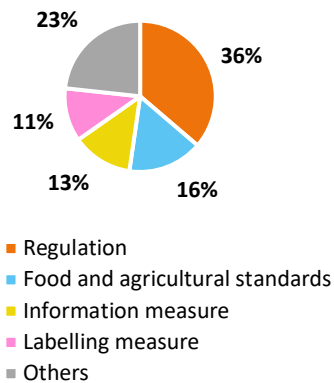
*Considering the rising burden posed on public funds and health care providers by obesity-related health problems, are enough policies acting through **public authorities**?*

*Should **media** play a less subordinate role? Are they key players in providing consumers with useful information to change their behaviours towards more sustainable choices?*

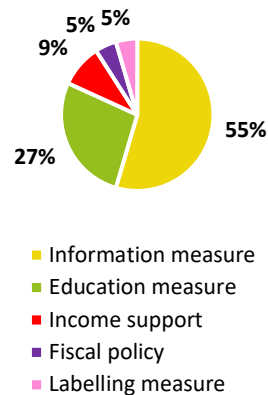
- Food industry
- School food services
- Import/export companies
- Farmers
- Consumers
- Media
- Public authorities
- Others

Through which INSTRUMENTS are they implemented?

Consumers as food policies'
ultimate beneficiaries



Consumers as food policies'
primary targets



R&I is not currently being exploited much as a policy instrument for targeting and/or benefitting consumers. *How could it act as a means to benefit consumers?*

Is information a powerful instrument to achieve a healthy and sustainable diet?



Relevant related trends in the food system



Source: FIT4FOOD2030 (2018), "Trends in the food system", D2.1

Policy actor: Education sector

In our food policy mapping the education sector act as a food policy **primary target** (10 mapped policies). All mapped food policies carried out by the education sector ultimately benefits **consumers** and pursue the goal of **balanced and sufficient diets**, using **regulations** (57%), **information measures** (29%) and **education measures** (14%). Some examples of these policies are provided in Table 1.

Table 1 – Policies targeting the education sector

<i>Policy</i>	<i>Goal</i>	<i>Beneficiary</i>	<i>Instrument</i>
<u>Education on nutrition, health and food preparation in schools</u> Curriculum or classes implemented in four Member States.	Balanced and sufficient diets for all EU citizens	Consumers	Education measure
<u>Basic Requirements and Certain Restrictions of Commercial Advertising Activities</u> Advertising activities shall be controlled in all school-related environments.	Balanced and sufficient diets for all EU citizens	Consumers	Information measure
<u>Moveagri</u> A network designed to offer internship opportunities to young people from French agricultural institutions.	Balanced and sufficient diets for all EU citizens	Consumers	Information measure
<u>Regulation of educational institutions - healthy nutrition</u> School health services may decide not to conclude agreements if food suppliers do not comply with the recommendations.	Balanced and sufficient diets for all EU citizens	Consumers	Regulation
<u>Regulation on the availability of soft drinks in school</u> Ban on the sale of unhealthy foods and beverages in schools and kindergartens.	Balanced and sufficient diets for all EU citizens	Consumers	Regulation
<u>Law No. 2004-806 on public health policy</u> Payable and accessible food vending machines are prohibited in schools.	Balanced and sufficient diets for all EU citizens	Consumers	Regulation
<u>School Nutrition Act</u> Vending machines for distribution of food and beverage must not be installed in the areas of educational institutions.	Balanced and sufficient diets for all EU citizens	Consumers	Regulation



Relevant related trends in the food system



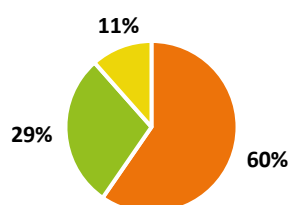
Policy actor: Farmers

Farmers play a vital role in the food system as they grow crops and raise animals to fulfil the demands of today's food supply chain, therefore they retain their importance for the dynamism of European rural areas. However, **employment in agriculture** in the EU has been steadily decreasing from 2000 (about 16.7 million people) up to now (about 10.5 million people) (Eurostat, 2018), and this agricultural workforce is mostly concentrated in Central and Southern Europe. Farmers constitute a **heterogeneous stakeholders category**, with considerable differences in terms of size, resources, wealth and production. Even if small farms might appear inefficient and irrelevant for the modern agriculture dominated by large-scale markets, they indeed play an important role for rural sustainability in Europe.

From our food policy mapping, it emerges that farmers act more as **primary targets** (79 mapped policies) rather than **ultimate beneficiaries** (52 mapped policies).

Proportion of mapped farmers-related policies by POLICY GOAL

Farmers as **ultimate beneficiaries**



Farmers as **primary targets**



The mapped food policies involving farmers mostly focus on:

- o the **agri-food business**, especially when farmers are *ultimate beneficiaries*, as they take advantage of trainings and advice, quotas, support for investments in their business structure and facilities, agricultural machinery, new products, processes and technologies;
- o the **environment**, especially when they are *primary targets* since, having an important impact on its status, they are incentivised to take action in order to mitigate possible adverse effects (e.g. to lower the intensity of the GHG emissions deriving from their productive activities).

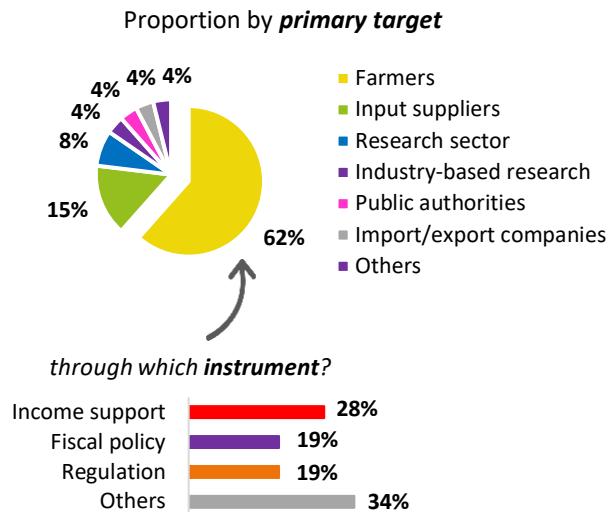
Why is only a small share of nutrition policies implemented through farmers?

*Is their job more relevant for guaranteeing food safety than ensuring a **balanced and sufficient diet**?*

*How could they contribute to encouraging a **shift to healthier food among consumers**?*

Rural areas in the EU still face many societal challenges, including high unemployment, lower income and lack of infrastructure and services. *Are EU food policies focusing enough on **equity** to benefit farmers? Does agricultural productivity constitute higher priority than **social cohesion**?*

Farmers as *ultimate beneficiaries*

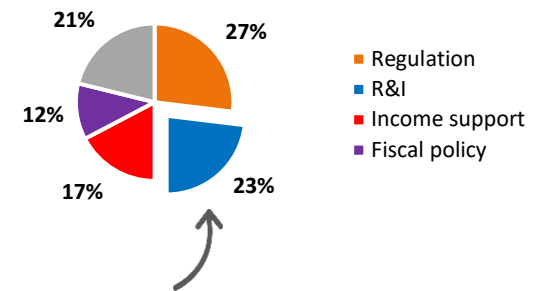


The vast majority of food policies that benefits farmers is directly implemented through farmers themselves (62%), mostly through **income support**, **fiscal policy** and **regulations**.

*Is there room for **bottom-up policies** to empower farmers?*

*How can farmers' co-participation in policy making foster a **more inclusive growth of rural areas**?*

Proportion by **policy instrument**



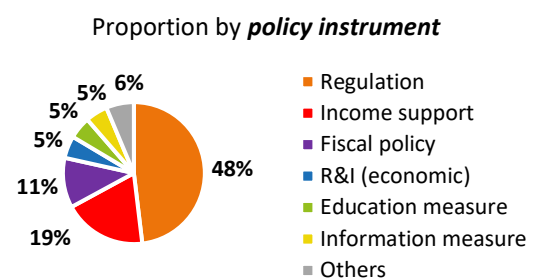
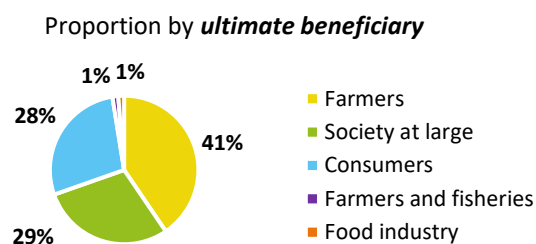
Research must take the diversity of EU agricultural patterns into account, so that to offer diversified policy options that reflect the heterogeneity of farmers' needs.

*Does **R&I** meet farmers' practical needs?*

How can the dialogue between those implementing R&I and those benefitting from it be facilitated?

*Can **participatory agricultural research** integrate farmers' experience and skills into an enhanced **rural innovation process**?*

Farmers as *primary targets*



As expected, the mapped food policies acting through farmers ultimately benefit:

- o **Farmers** by making the **agri-food business more viable and socially balanced** through **income support** and **fiscal policy**;
- o **Society at large** by **reducing the environmental impacts of agriculture** through **regulations**;
- o **Consumers** by guaranteeing **food safety standards and controls** through **regulations**.

Research and **education measures** do not seem to play a relevant role in targeting beneficiaries through farmers' activities. However, despite differences between countries, the majority of farm managers generally have only practical experience and no structured agricultural training.

*Could the provision of **free tailor-made advice, trainings and transfers of knowledge** strengthen farmers' role in addressing food policies beneficiaries?*

Policy actor: Fisheries

The EU is the fourth largest fisheries and aquaculture producer worldwide: 80% of production comes from fisheries and 20% from aquaculture, which plays a major role in EU countries around the Mediterranean and the Black Sea. Marine produce is and will continue to be a prime source of protein and vitamins for millions of people, especially as the growing middle classes shift their spending to high-end protein products. From our food policy mapping, fisheries seem to act as **ultimate beneficiaries** (23 mapped policies) and as **primary target** (24 mapped policies) to the same extent.

Proportion of mapped fisheries policies by POLICY GOAL



The mapped food policies targeting fisheries mostly focus on:

- the **environment** – in particular the ‘biodiversity’ subgoal – as fishing may have unintended effects on the marine environment and ecosystems and, therefore, the EU implement policies to protect vulnerable habitats and reduce unintended harms to marine animal species;
- the **agri-food business**, as common marketing standards and competition rules on fishery products are in place to help ensure a transparent market able to supply high-quality products.

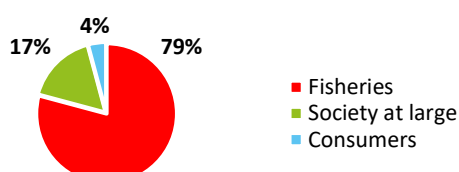
Despite being common knowledge that including seafood in our diet provides proteins, healthy fats, vitamins and minerals that are beneficial for us and generally represent a healthier alternative to meat products, none of the mapped policies targeting fisheries aim at guaranteeing **balanced and healthy diets**.

Does the design of fish-specific nutrition policies represent a pressing priority for EU policy makers?

*Since the aquaculture sector represents an important **source of employment** in the Union, should more national policies be aimed to reach the ‘**Equitable outcomes and conditions**’ goal and, in particular, **social cohesion**?*

Proportion of mapped fisheries policies by ULTIMATE BENEFICIARY

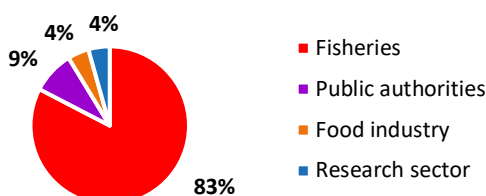
The majority of the mapped policies acting through fisheries aims at ultimately benefiting the aquaculture sector itself. *What about other policy beneficiaries?*



*How can **consumers**, the end-users of fish products, be specific beneficiaries of fisheries policies to a greater extent?*

Proportion of mapped fisheries policies by PRIMARY TARGET

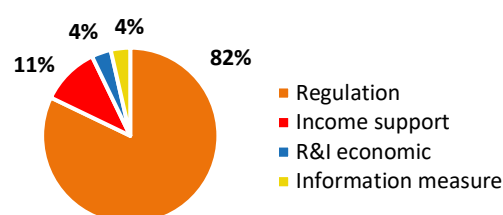
Similarly, most of the mapped policies that benefit fisheries are directly implemented through fisheries themselves. *What about the remaining share?*



How can the **research sector** contribute more to supporting innovation and development in the aquaculture sector?

Proportion of mapped fisheries policies by INSTRUMENT

Almost all mapped policies are intended to fix the fishing opportunities available in the EU using **regulations** (82%) that set catch and fishing effort limits, mesh size and the thickness of fishing nets; while a smaller share is carried out through **income support** (11%) for those businesses that diversify and improve the sustainability of their activities.



*Could **information measures** and **media** be effective policy instruments to influence **consumers'** behaviour in making informed choices when purchasing fishery and aquaculture products and storing them in their domestic environment?*

According to Eurobarometer, more educated consumers are also more likely to buy fishery and aquaculture products on a regular basis. *Can specific **training** on nutrition and food science for all education levels help sensitize scholars and allow them to become more conscious consumers?*

Eurobarometer also highlighted that EU consumers are not as confident on the origin, species and treatment of **tinned and prepared fish products** as they generally are on fresh, frozen, smoked and dried ones. *Could improving **labelling measures** on such fish products be strategic to ultimately benefit not only consumers, but also the food industry and fisheries?*



Relevant related trends in the food system



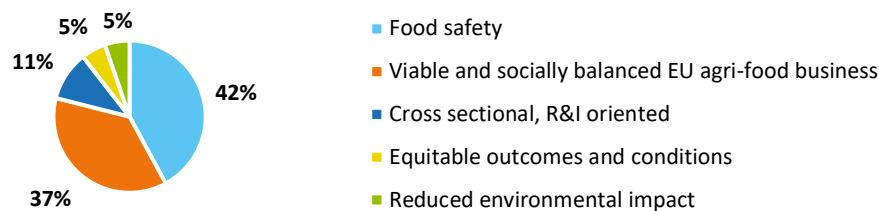
Source: FIT4FOOD2030 (2018), "Trends in the food system", D2.1

Policy actor: Farmers and the food industry

Some of the mapped policies act through more than one primary target along the food chain and, more specifically, the food production process. This is the case of farmers and the food industry, who form an actor group on their own when the following issues are concerned:

- safety, quality and hygiene controls on farm products prior to their processing and marketing;
- the use of innovation in agriculture;
- communication of EU farm products peculiarities through labels and information measures.

Proportion of farmers & food industry-targeted mapped policies by GOAL



*Could the joint contribution of farmers and the food industry be extended to the policy-making process aimed at targeting the **Balanced and sufficient diets for all EU citizens** goal?*

Table 2 - Examples of food policies acting through farmers and the food industry

Policy	Goal	Beneficiary	Instrument
<u>Green innovation centres</u> Use innovation in the agro-food sector to increase food supply, smallholders' incomes and job opportunities.	Equitable outcomes and conditions	Third countries	R&I economic
<u>Institute for Agriculture, Fisheries and Nutrition Research</u> Multidisciplinary, pioneering and independent research aimed at sustainable agriculture and fisheries in economic, ecological and social terms.	Cross sectional (R&I oriented)	Farmers and fisheries	R&I economic/information
<u>Guidelines on the application of the CMO Regulation for the olive oil, beef and veal and arable crops sectors</u> Support to European farmers who want to jointly sell olive oil, beef and veal, and arable crops.	Viable and socially balanced EU agri-food business	Consumers	Information measure
<u>Enjoy! It's from Europe</u> EU co-financing beneficiaries can use this signature in promotional material concerning EU agricultural products.	Viable and socially balanced EU agri-food business	Consumers	Labelling measure
<u>Limit for pesticide residues in baby foods</u> The listed pesticides shall not be used in agricultural products intended for the manufacturing of baby foods.	Food safety	Consumers	Food and agricultural standards

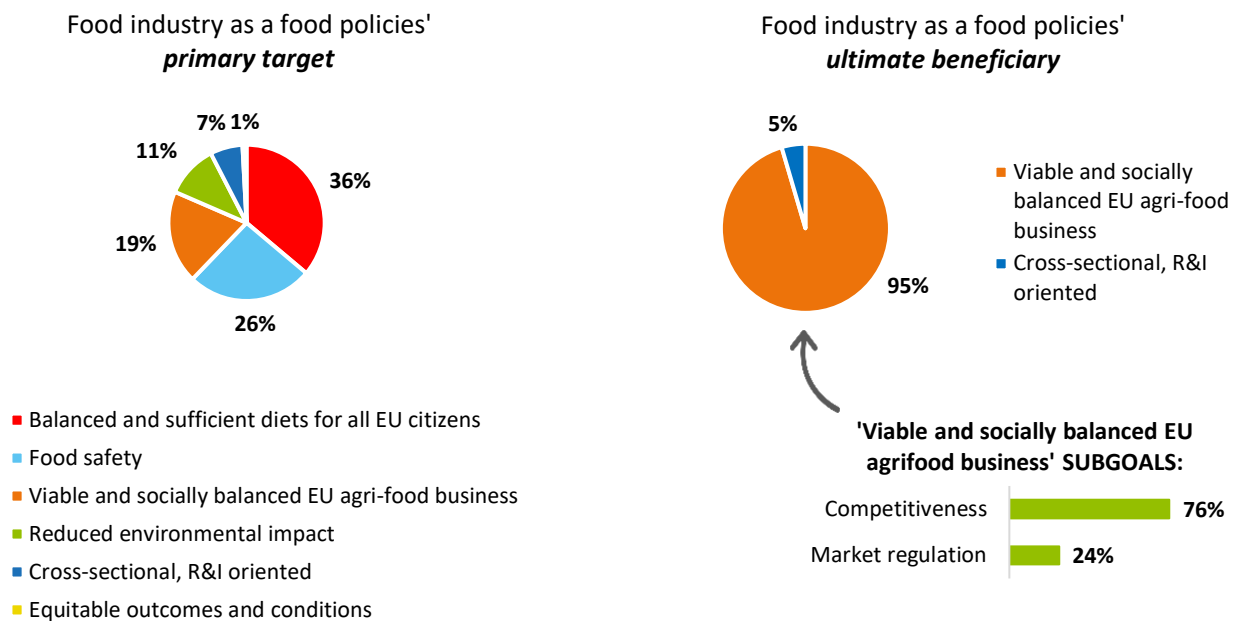
Policy actor: Food industry

In spite of the current economic downturn, the EU food industry maintains the characteristics of a **stable, resilient and robust sector**. Indeed, it remains a **major contributor to Europe's economy** in terms of:

- *turnover* (€ 1,109 billion);
- *value added* (2.1%), despite being squeezed by the growth of input costs;
- *employment* (4.51 million people), thus representing a key job provider (FoodDrinkEurope, 2018).

From our mapping, it emerges that the food industry plays more the role of **primary target** (100 mapped policies) rather than that of **ultimate beneficiary** (22 mapped policies). Indeed, food industries are expected to be facilitators for food policies and use their expertise, scale, innovation and marketing to develop, distribute, and sell healthy and optimally processed food in a sustainable, equitable and profitable way.

Proportion of mapped policies by GOAL

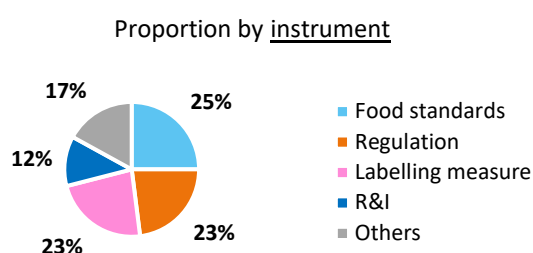
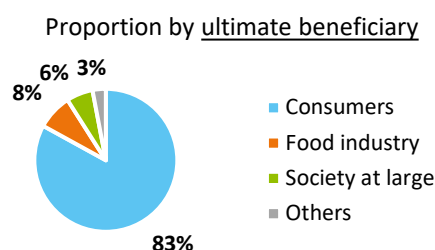


From the policy mapping it emerges that the share of environment-related food policies acting through the food industry is rather small (11%). However, industrial activities in food production, processing and distribution and the conditions of the surrounding environment are inevitably bounded up together.

*Could the food industry represent a strategic player through which the negative effects of the agri-food sector on the **environment** could be tackled?*

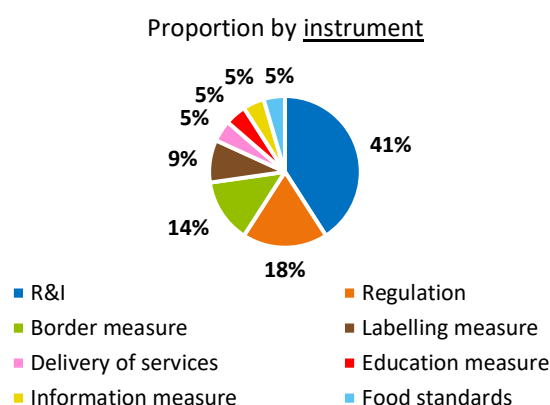
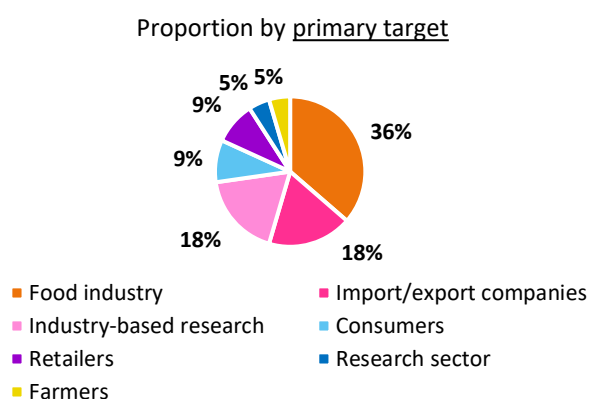
Food industry as a food policies' *primary target*

As expected, the vast majority of food policies targeting the food industry ultimately benefits **consumers** (83%) by adopting voluntary or mandatory **food standards, regulations and labelling measures**.



Food industry as a food policies' *ultimate beneficiary*

Those food policies aimed at benefitting the food industry in the long run are, in most cases, directly addressed at the **food industry** (36%) and **import/export companies** (18%) from the beginning, mostly via **R&I instruments, regulations and border measures**.



23% of the mapped policies acts through the **research sector** to benefit the food industry, while **41%** of them adopts **R&I instruments** to achieve so. *Considering the relevance of R&I to benefit the food industry, is there room to increase the share of **public research** as a primary policy target?*



Relevant related trends in the food system

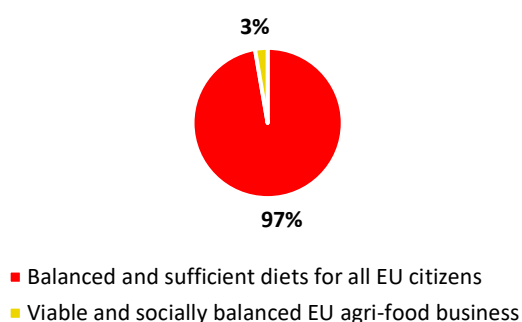


Source: FIT4FOOD2030 (2018), "Trends in the food system", D2.1

Policy actor: Food services & School food services

In times when traditional home cooking is being gradually replaced by **eating out** and ordering **ready-to-eat food** at home, food services are gaining increasing importance in the agri-food economy. They include all those businesses, institutions and companies that are responsible for any meal prepared outside the domestic environment and distributed to consumers. Moreover, with children eating 1-2 meals in schools each day, **schools, after school** and **early childcare programmes** are important opportunities for promoting healthy eating. Indeed school meals, if well balanced, have been linked to improved concentration in class, better educational outcomes and fewer sick days. In light of this, schools are always more regarded as **primary targets** to counteract the increase of childhood obesity levels. According to the JRC analysis of European National School Food Policies (SFP), all EU-28 Member States acknowledge the important contribution of school food to child health and development, and provide either **voluntary guidelines** or **mandatory regulations** on what food and drinks should be served in school canteens.

Proportion of food services-targeted mapped policies by GOAL



As many European countries have designed policies to help schools provide nutritionally balanced meals to scholars at all educational levels, the most hit policy goal is the achievement of **balanced and sufficient diets** (97%). This is particularly true in circumstances where lunch is not usually home-made and brought to school but received from a central food service point.

*Considering that food services represent a highly **competitive sector**, could it be worthful to increase policies aimed at making this business more viable and balanced?*

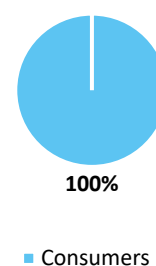
*Being an ever-growing sector, should more food services-target policies address **jobs creation**?*

*None of the mapped policies insist on the 'Equitable outcomes and conditions' goal: **are equity standards** generally respected among the different existing job positions in food services?*

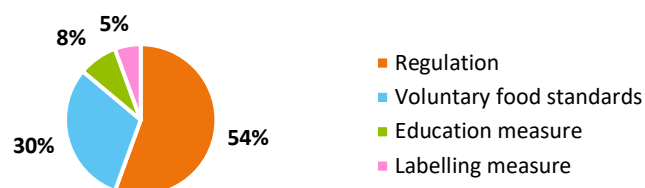
Proportion of food services-targeted mapped policies by ULTIMATE BENEFICIARY

As expected, all mapped policies intend to reach and benefit consumers, as they provide services thought to be immediately consumed, independently of the social environment considered.

*May **farms, food industries** and **SMEs** become ultimate beneficiaries as well, if food services begin to rely more on **local, short food supply chains** and adopt the '**farm-to-table**' (or farm-to-school) approach?*



Proportion of food services-targeted mapped policies by INSTRUMENT



Regulations on how to handle food in caterings, restaurants and canteens are important instruments in the fight against food scandals, food contaminations and unsafe food preparation and storage, which is the reason for which they are the most used instruments in the food services policy area (54%).

Mandatory regulations are followed by **voluntary food standards** (30%), mainly in the form of guidelines to be applied in school environments. *Would they be more effective if converted into **mandatory food standards** to be complied with by all schools at EU level, while respecting nation and regional culinary traditions and dietary habits at the same time?*

There is general consensus on the need to accompany school policies with **education measures**, as they are important for both providing scholars with adequate explanation on the nutrient value of the food they receive by food services, and for **training school catering staff** on how to handle food in the safest way possible.

*Are **education measures** sufficiently employed?*

In the absence of them, may the effectiveness of school policies be limited?

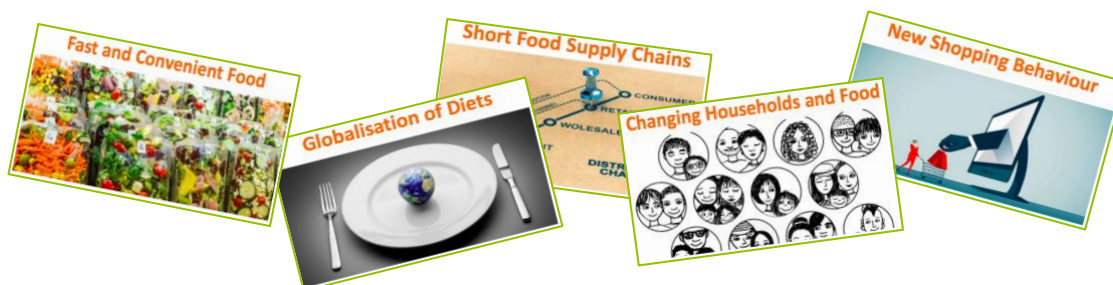
The benefits derived from school policies risks being compromised by the compensation effect outside schools, namely the availability of restricted food in other school-based (or near school) outlets.

Are there food services measures targeting children also outside school environments?

*What kind of **information measure** could best target schoolchildren families?*



Relevant related trends in the food system

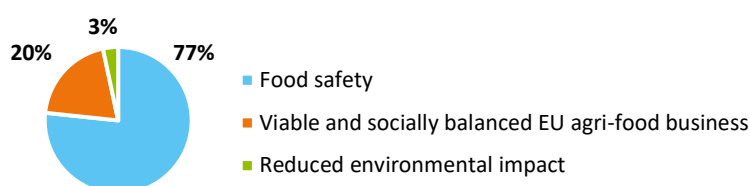


Policy actor: Import/export companies

In today's globalised economy, diets have undergone massive transformations in terms of ingredients and cuisines' diversity. Global migration, travel and communication have created a large range of new gastronomies and an increased demand for ingredients coming from a much wider number of countries. Hence, import and export companies have seen their importance throughout the food system substantially increased by such **globalisation of diets**, and therefore act as important food policies' primary targets. However, **local food supply chains** connecting local suppliers with local consumers – and therefore cutting out some of the intermediary stages that are typical of conventional and longer supply chains – could resize the importance of import and export companies' role in the long run, provided that consumers' awareness of sustainability and fairness continues to increase.

Proportion of import/export companies-targeted mapped policies by GOAL

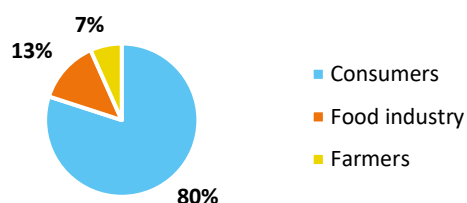
Nutrition and **equity** do not seem to be addressed by food policies targeting import/export companies.



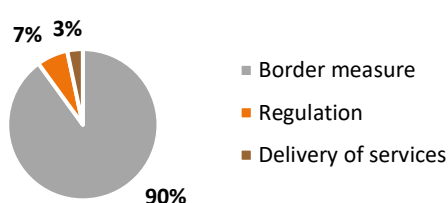
Could any policy better regulate the trade of unhealthy food products?

With the rise of international commodity trade, European importing nations source food supply also from small producers in less developed countries, who are less accustomed to meeting strict requirements on food certification, labelling and quality. *How is it possible to harmonise possible discrepancies while maintaining fair relations with exporting countries having less consistent trade standards?*

Proportion by ULTIMATE BENEFICIARY



Proportion by INSTRUMENT



Despite the increasing presence of labels addressing products' sustainable and fair production, still there are no specific **labelling measures** that provide consumers with precise information on how products are transported, thus making it difficult to assess their eco-friendliness.

Should the EU elaborate a common labelling framework on ingredients' transportation to be included in the existing range of labels on food products?

Policy actor: Input suppliers

What characterises the first stages of the food chain are the inputs that agricultural production uses in farming operations, namely **seeds and planting material, feed, energy, fertilisers and plant protection agents**. Among these, feed comprises the largest share of inputs in agricultural production and the biggest increase in prices in recent years. All considered input categories belong to markets that have witnessed changes in **concentration, mergers and acquisitions**. However, the consolidation process that has occurred at supply chain level in recent decades has not played out at production level and, therefore, input suppliers are generally larger and more concentrated than agricultural producers, which occupy a rather weak position with little bargaining power in negotiations.

Proportion of input suppliers-targeted mapped policies by GOAL



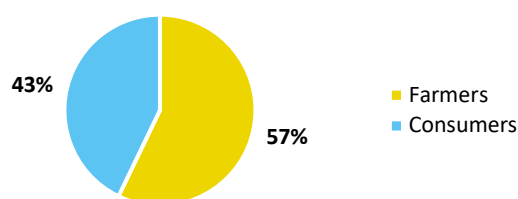
The agricultural input-related mapped food policies insist on three policy goals:

- o **Food safety**, with the view of protecting human and animal health by investigating potential undesirable substances in feed and regulating feed additives (43%);
- o **A viable and socially balanced agri-food business**, by setting packaging and labelling requirements for the commercialization of seeds and other vegetable propagating and planting material (43%);
- o **Reduced environmental impact**, aiming at minimizing plant protection products' repercussions on human health and nature by setting rules on pesticides and promoting the use of non-chemical alternatives (14%).

A great number of **farmers' traditional inputs**, especially seed varieties, are extremely **heterogeneous** by their nature as they adjusted to the diverse and peculiar features of the area where they originated. *Which kind of policy may allow small farmers' inputs to enter EU seed market? Is it viable to adjust the strict requirements underlying seeds' commercialisation in favour of all farming realities and resources?*

None of the mapped input-related food policies addresses the '**equitable outcomes and conditions**' goal. *Is access to agricultural inputs equal in all EU regions? Are the existing food policies targeting input suppliers taking the diverse characteristics and needs of EU farmers into account?*

Proportion of input suppliers-targeted mapped policies by ULTIMATE BENEFICIARY



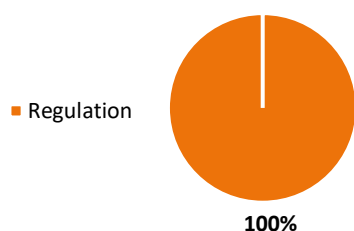
As depicted in the goals' pie, the largest proportion of mapped policies that are directly concerned with the marketing of agricultural inputs and their impact on the environment are designed to ultimately benefit **farmers** (57%), while feed-related policies are meant for **consumers'** health protection (43%).

Consumers are increasingly concerned about environmental issues and, accordingly, are often willing to pay more for food products that comply with sustainability principles.

*Are food companies taking advantage of the **transition to less input-intensive production methods**?*

*Can the **food industry** be considered as a hidden beneficiary of those food policies promoting a more sustainable input usage?*

Proportion of input suppliers-targeted mapped policies by INSTRUMENT



Almost all mapped policies addressed to input suppliers have been enforced through **regulations** designed at **EU level** by DG SANTE.

*Do **Member States** have decision-making power in this policy area? Should agricultural input policies be only implemented at EU level, or be tailored to specific national or subnational realities?*

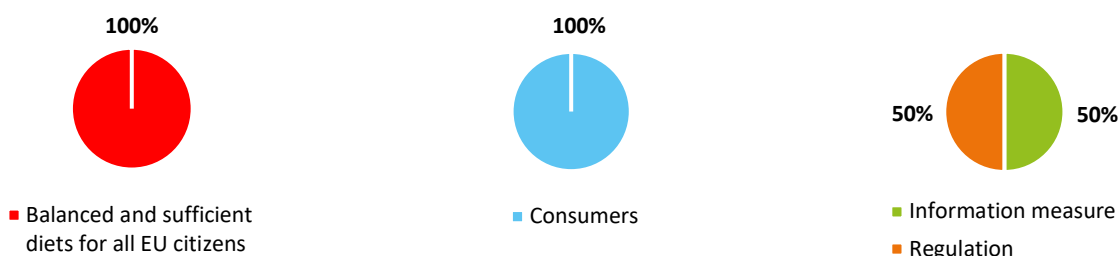
*Are the formulators of EU regulations on these matters dialoguing enough with the **research sector**? How could **R&I instrument** fit into such policy making process?*

*Do **income support** measures represent an effective incentive for farmers to switch to a more sustainable use of pesticides? Are farmers belonging to smaller realities adequately aware of alternative plant protection practices? Could **education measures** enable knowledge transfers and strengthen farmers and food companies' commitment to sustainable alternatives?*

*Are enough **fiscal policies** in place to prevent agricultural producers from being negatively affected by increases in input costs?*

Policy actor: Media

Media are an important source able to influence citizens' perception, attitudes and behaviours, including what people buy, eat and believe about food. For this reason, media act as **primary targets** in our food policy mapping.



As expected, media are generally intended to convey messages concerning **healthy diets** to **consumers**. As for the policy instrument used, the mapped policies are implemented through:

- o **information measures**, *i.e.* campaigns whose purpose is to raise awareness of the direct consequences of the overconsumption or underconsumption of certain nutrients or additives to our health;
- o **regulation**, *i.e.* government-led or self-regulatory provisions addressed at private actors to make them develop their own codes of conduct to internally regulate their commercial messages about the food they sell on the market.

Table 4 - Examples of self-regulation policies acting through the media:

- **Advertising of Food and Beverages addressed to Children - PAOS code**
Code of self-regulation on food and drink advertisement aimed at minors for the prevention of obesity and health-related diseases.
- **Code of Responsible Food Marketing communication to children**
Agreement on a voluntary code among the food, grocery, media and advertising industries not to advertise foods with high levels of fat, sugar and salt in media aimed at children.
- **Regulation on Energy Drinks advertising**
The promotion of energy drinks in all places involving persons under the age of 18 years is prohibited.
- **Children's commercial communications code**
Rules on the promotion to children of food that is high in fat, salt or sugar.
- **Radio and tv act**
The act prohibits any (food) advertising to children below the age of 12.

Policy actor: Public authorities

Local and national governments play a crucial role in translating the FOOD 2030 priorities into policy actions, thus acting as food policies' **primary targets**. To achieve this, they need to acquire appropriate knowledge of what defines a healthy diet, which are potential diet-related risks for human and animal health, and of environmental and societal values such as sustainability, equity and justice. Insufficient awareness can be even exacerbated by continuous advances in science and different media conveying conflicting messages. For public authorities to implement and sustain appropriate policies, support from all other players of the food system – from the civil society to private and non-governmental actors – is required. However, governments' political willingness to act can be undermined by conflicting interests among the various stakeholders at play or the public opinion if, for example, the identified priorities do not match citizens' ones.

Proportion of mapped policies set by public authorities by GOAL

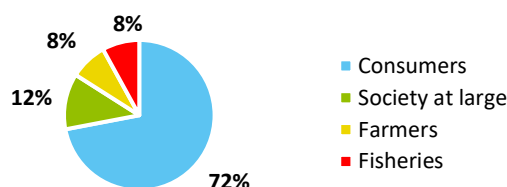


As it emerges from the mapping, public authorities are mostly called in for **food safety** purposes (68%), either for setting up controls on animal and plant products entering the EU or detecting and controlling potentially harmful agents at all stages of the food chain.

Few policies seem to act through public authorities to fight the spread of non-communicable diseases, fat and sugar over-consumption and other health risks directly linked to **dietary patterns**.
How can they make all food system actors aware of such urgent issues and enhance their participation to an ad-hoc and inclusive policy making process?

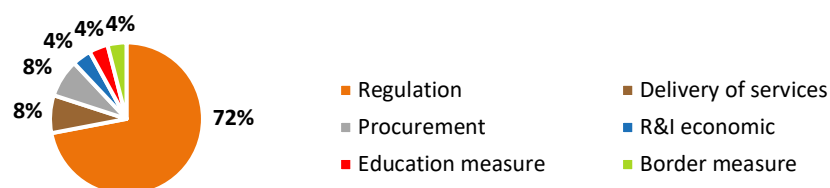
*Why none of the mapped policies tackling **food and packaging waste** are directly carried out through public authorities? How could they use their institutional position to effectively lead a behavioural change towards a **circular economy**?*

Proportion of mapped policies set by public authorities by ULTIMATE BENEFICIARY



*Are public authorities dialoguing enough with the **food industry** – including **SMEs** – to align their interests and marketing strategies?*

Proportion of mapped policies set by public authorities by INSTRUMENT



Regulations are surely the most direct instrument through which local and national public authorities can act (72%).

*Should public authorities rely more on **education policies and trainings** on food and feed law and animal and plant health to support existing regulations on such matters?*

Policy actor: Research sector & industry-based research

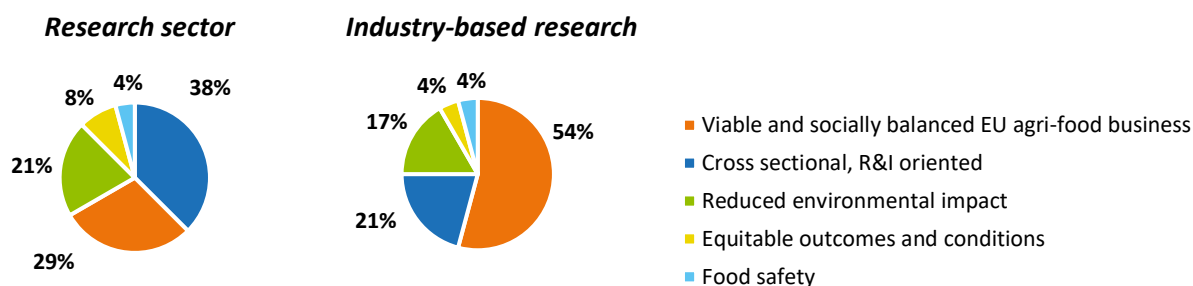
The research sector plays an essential role in triggering **smart and sustainable growth** and in addressing **societal challenges**. In the EU, research activities are being carried out by four main institutional sectors:

- o **the business enterprise sector**, which represents the biggest investor in R&D in the EU, accounting for about 65% of total R&D expenditure in 2016;
- o **governments**;
- o **the higher education sector**;
- o and **the private sector**.

Both public and private research bodies are key to find high-impact solutions for **future-proofing our food systems**, by avoiding fragmentation, fostering better policy coherence, programmes alignment and leveraging of funds. The two research systems act in a complementary way: if public research generates new knowledge and talents, industry-based research develops innovative products, processes and services that improve EU productivity and competitiveness, deliver high quality jobs and make an efficient use of resources, thus contributing to the structural changes needed to tackle today's challenges. In this sense, partnerships between public research and industry intend to bring innovative results closer to the market and improve the link between research and societal growth.

On this basis, the research sector acts as a **primary target** in our food policy mapping.

Proportion of mapped policies by GOAL

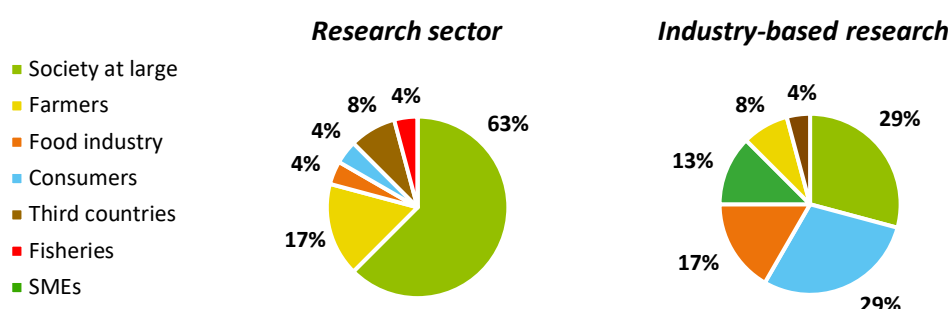


From our mapping, it emerges that the research sector is mostly involved in food policies aimed at:

- o improving the **competitiveness of the EU agri-food business**, especially **industry-based research** (54%) – Nowadays the global market requires continuous improvements in R&D&I activities to be promoted by companies and research bodies through investments, grants and tailored support;
- o supporting **strategic scientific research, development and innovation** (R&D&I) – While **industry-based research** aims to facilitate investments in the development of innovative projects, products, processes or services to be placed on the market (21%), **public research institutions** mostly aim to provide inputs to policy makers and enhance international cooperation and cohesion (38%);
- o reducing the **environmental impact** – On the one hand, the commitment of **industry-based research** in reaching this goal is crucial as industrial production weighs heavily on the current levels of emissions, hence making industries the key actors to undertake mitigation and adaptation actions (17%); on the other hand, **public research institutions** contribute to understanding and forecasting environmental phenomena and developing innovative solutions (21%).

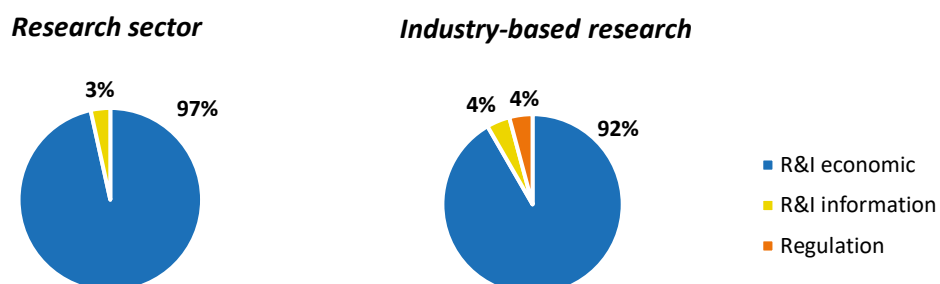
What can the research sector do to specifically contribute to meeting the 'Balanced and sufficient diet for all EU citizens' goal?

Proportion of mapped policies by ULTIMATE BENEFICIARY



Being closer to the **food industry**, industry-based research represents a valuable means for food policies to ultimately benefit **consumers** (29%), the **food industry** (17%), and **SMEs** (13%).

Proportion of mapped policies by INSTRUMENT



*Are trainings in the form of **education measures** effective to improve personal and professional competences of the EU workforce? Can they create productive knowledge to be used with the view of strengthening the **competitiveness of the EU agri-food business**?*

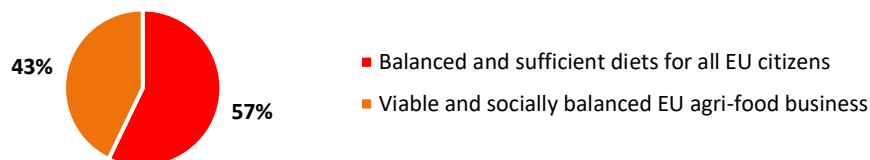
*Should food policies acting through the research sector also adopt adequate **information measures** to ensure proper communication, dissemination and analysis of innovations and good practices?*

Policy actor: Retailers

EU retailing services consist of about 3.6 million active companies, representing 4.5% of value added and accounting for almost 9% of EU jobs (EC, 2018). They play an important role for food and nutrition security, as they occupy a unique position in the lifecycle chain of products and act as intermediates between food producer companies and individual end-consumers, therefore as food policies' **primary targets**.

Since 2000 the retail landscape has undergone a dramatic transformation due to a combination of different factors on both the demand and supply side. On the one hand, consumer have become more demanding in terms of food variety and price. On the other hand, there are big cross-country differences in the share of modern retail in total edible grocery, where large retail chains have been opening stores both inside and outside their domestic market, thus increasing their market share and often creating their own brands or private labels (EC, 2018). Moreover, the rapid development of e-commerce has brought new opportunities and challenges for the sector by creating multi-channel retail that combines offline and online realities, but also posed serious threats to the retail sector.

Proportion of retailer-targeted mapped policies by GOAL



The mapped food policies targeting the retailing sector mainly focus on:

- o promoting **balanced and sufficient diets for all**, through the reduction of salt content in food products, restricting the sale of energy drinks and sugary snacks, and improving the provision of fresh food in stores located in deprived areas;
- o making the **agri-food business more viable and socially balanced**, through market regulation.

Food quality and safety are crucial factors in consumers' purchasing choices and their assessment has strong implications for retailers. *Are they adequately addressed by retailer-targeted policies?*

None of the mapped policies focus on **equitable outcomes and conditions**.

Are remote areas with poor retail access to fresh food properly addresses with specific provisions?

*How do public authorities ensure that retailers enjoy a **fair, integrated, cohesive and easily accessible market**? How should administrative processes for retailers be simplified?*

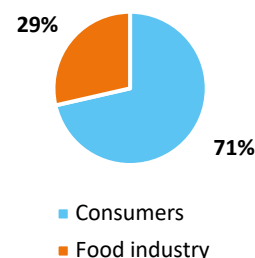
*How could the EU properly address the **concentration of retailers** (e.g., joint-ventures, mergers, acquisitions) to avoid unfair bargaining power imbalances in trade relations between food chain's actors?*

Also, none of the mapped policies insist on reducing **environmental impacts**. However, increased consumer awareness is putting pressure on food system' actors – from producers and retailers to consumers themselves – stressing the waste management issue and, in particular, plastic.

*May the retail sector be a strategic policy target to implement strategies to **reduce packaging material**?*

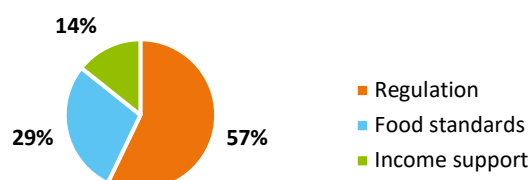
Proportion of retailer-targeted mapped policies by ULTIMATE BENEFICIARY

Consumers considerably benefit from retailing policies (71%) not only due to the fact that European households spend up to one third of their budgets in retail shops, but also because retailers have access to vast amounts of consumer data to be used to improve their buying experience. The second beneficiary is the **food industry** (29%), provided that retailer-targeted policies are well-designed and not highly restrictive.



SMEs generate about 66% of the retail sector's value added and 70% of its employment (EC, 2018). *Should there be more retailing policies specifically benefitting them and small retailers in general?*

Proportion of retailer-targeted mapped policies by INSTRUMENT



As detected by the policy mapping, the most used instrument to regulate the retailing sector is, indeed, **regulation** (57%) followed by **food standards** (29%). In the EU, Member States are those in charge of creating a more open, integrated and competitive retail market.

In many EU countries, national regulatory framework put in place decades ago has not yet been adapted to the **digital age**. *Which kind of regulations should national public authorities introduce to help small retailers adapt to the ongoing transformation of the sector?*

*Could **education measures** in the form of trainings be effective to embrace technological changes?*

*Is **income support** used enough to provide stores with the support needed to face this transformation?*

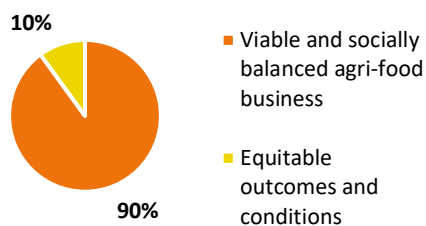
*Could **R&I** play a role in analyzing **consumer behaviour and preferences**, so that to allow the retail sector to reflect them throughout their production line? May this strategy help brick-and-mortar stores gain **competitiveness** when confronted with e-commerce?*

Policy actor: Small and medium enterprises

The food industry is the largest manufacturing sector of the EU and is characterised by a large number (almost 290,000) of SMEs. The Commission defines micro, small and medium-sized enterprises as those employing, respectively, fewer than 10/50/250 persons, having a turnover of less than € 2/10/50 million and a balance sheet total of less than € 2/10/43 million. Agri-food SMEs are of great economic importance as they generate almost 50% of the food industry **turnover** and **value added** and provide two thirds of the **employment** in the sector (FoodDrinkEurope, 2018). Moreover, due to their diversity, they have a large potential to develop novel solutions to address the emerging **changes in food demand** (e.g., population growth, changes in consumer tastes, food scandals, the globalization of food markets, etc.).

Proportion of mapped policies by GOAL

Unsurprisingly, almost all of the mapped policies addressing SMEs aim at enhancing the **viability and social balance** of the EU agri-food business and, to a smaller extent, guaranteeing **equitable outcomes and conditions**.



Competitiveness is the most needed element to create a viable and balanced business.

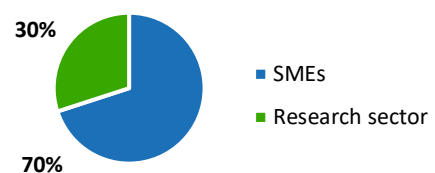
*How can SMEs develop their capacity to **bring innovations to the food market** and increase their level of competitiveness?*

*Are their available **limited resources** a too difficult obstacle to overcome?*

Proportion of mapped policies by PRIMARY TARGET

More than $\frac{2}{3}$ of the mapped food policies that ultimately benefit **SMEs** are directly implemented through themselves (70%), while the remaining $\frac{1}{3}$ acts through the **research sector**.

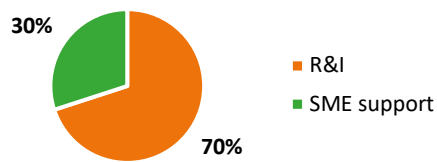
As the figure suggests, it is important to facilitate the participation of SMEs in **research programmes and networks**, **knowledge transfer** and the **uptake of new technologies**.



*How could SMEs be enabled to further **invest in new inputs** and processing techniques? Is there a viable way to facilitate their **access to finance** to cover the high costs they face?*

Neither SMEs-benefitting policies act through **consumers**, nor food policies implemented through SMEs ultimately benefit consumers. *What can be done to better connect agri-food SMEs to the **end-users** of their products? Could a specific label "made by local SME" influence consumption patterns?*

Proportion of mapped policies by INSTRUMENT



SME support relates to grants, bonuses and special funds specifically channeled to small and medium-sized enterprises, with the aim to facilitate their **access to finance**.

An improved access to finance could foster **SMEs' engagement in R&I activities and technological innovation**. *Are these two policy instruments complementary and mutually reinforcing?*

*Why are **information measures** missing? Could they be effective in raising SMEs' awareness of emerging technologies and services?*

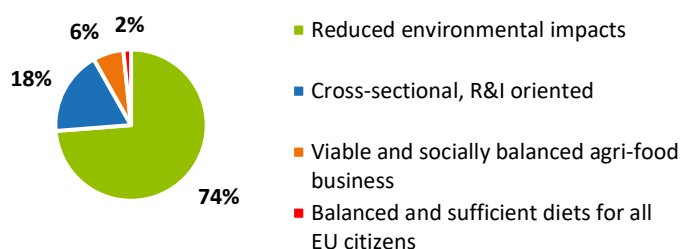
*Should **education measures and trainings** be set up to offset the lack of business and management skills needed to carry out innovation activities? Could they contribute to building **networks** among SMEs and facilitating the **co-creation** of innovation in the agri-food sector?*

Policy actor: Society at large

The society acts as an **ultimate beneficiary** in our EU food policy mapping. Nevertheless, addressing citizens – actors who go beyond the traditional food policy setting – also creates bidirectional connections. The society, indeed, may play the active role of eliciting **non-governmental input on food policy changes**, considering its unique position to identify local needs and gaps. Making citizens realise the benefits they gain from food and environmental policies – and the resulting reciprocal relationships between all different food system’s actors – could enhance public support and involvement, thus ensuring the long-term success of local initiatives and policies.

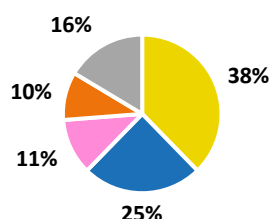
Proportion of mapped policies by POLICY GOAL

The vast majority of food policies addressing citizens aims at reducing those **environmental impacts** that prove harmful for the society at large (74%). The small share of nutrition and food safety policies is due to the distinction made between the “society at large” and “consumers” target groups.



Proportion of mapped policies by PRIMARY TARGET

- Farmers
- Research sector
- Industry-based research
- Food industry
- Others

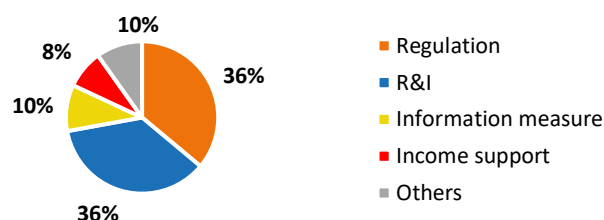


According to our policy mapping, **farmers** are those food system actors having the greatest impact on society’s wellbeing (38%), as they take care of the land we live on and are in charge of producing our ultimate source of livelihood.

Despite often being two overlapping concepts, citizens and consumers maintain specific features that differentiate them as target groups. Only one mapped citizen-oriented policy acts through consumers.
How could policies act more effectively through consumers to benefit the whole society?

*Considering the influence of the **food industry** on the status of the environment, should it play a bigger role in benefitting the society as a whole by reducing its **environmental impacts**?*

Proportion of mapped policies by INSTRUMENT



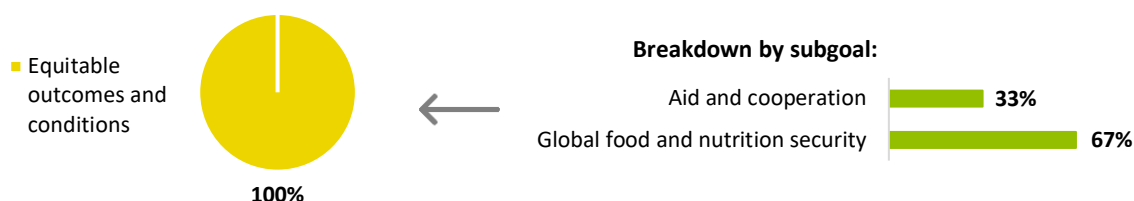
*Should the incidence of **information measures** be improved to allow citizens becoming more conscious and effective food policy players? Is this kind of measure useful to foster an inclusive and collaborative food governance between societies (and therefore cities)?*

*Is it time for the **education sector** to provide students at all levels with adequate training on the subjects of food and environment?*

Policy actor: Third countries

Adequate policies are key to enable a **food system transformation**, especially when addressed to extra-EU countries where this transition would entail a broader change in the economy and society. Indeed, food systems in low- and middle-income countries are experiencing radical transformations in response to **socio-economic and demographic changes**, such as rapid urbanization, growing middle classes, adjustments in dietary preferences and consumer behaviour. In many third countries that benefit from EU programmes, the capacity gaps have been leading to a lack of effective public policies and institutions, services, research bodies, technical assistance for producers and physical infrastructures needed both by the public sector and small enterprises and farms, which mostly rely on the **informal market**. Moreover, the growing global nature of food trade has changed diets in low- and middle-income countries, where new kinds of cheap food high in fat and sugar content are now available and contribute to the alarming increase in obesity.

Proportion of third countries-targeted mapped policies by GOAL



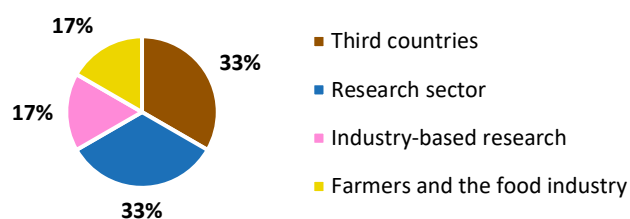
All mapped food policies for third countries aim at reaching **equitable outcomes and conditions** and, in particular, the **global food and nutrition security** subgoal (67%).

The mapped food policies addressing third countries mostly consist of **bi- or multilateral funds** designed to reach the overall **equity** goal. However, considering the wide-ranging nature of these funds, the equity objective looks more like an umbrella that covers all other policy goals at the same time – from increasing incomes and creating new jobs to improving local food supplies through innovation, preventing local food contamination, and investing in greener production practices.

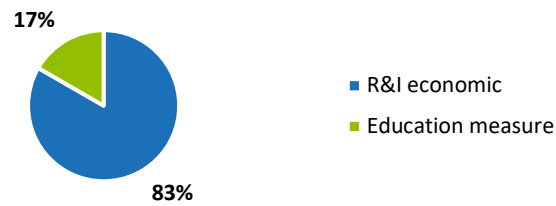
*Should the foreign food policy scenario be more goal-specific and tailor-made to the specific area that food policies aim to address, both thematically and geographically?
Can this be done at both EU and national level?*

Proportion of third countries-targeted mapped policies by PRIMARY TARGET

The common denominator of all target groups represented in the pie is the strong link between the **research sector** and third countries' **agricultural production**, either passing through the food industry or farmers. The underlying idea of the mapped policies is, indeed, to develop innovative solutions to tackle agricultural challenges.



Proportion of third countries-targeted mapped policies by INSTRUMENT



R&I instruments play here a major role in fostering innovation in the agriculture and food sector of partner countries, especially by **increasing smallholders' access to the knowledge, markets, capital and means of production** needed to achieve a food system transformation. Indeed, joint programmes are one of the main instruments through which the Commission pool African and European research together to align existing visions, create synergies and co-development opportunities and foster innovative lines of research.

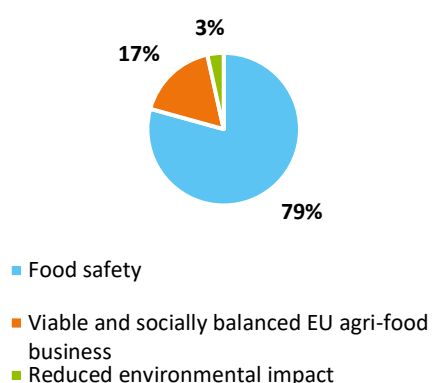
Scarce **education and awareness on healthy diets** have as direct consequences increasing rates of obesity, other non-communicable diseases and micro-nutrient deficiencies. Both non-governmental bodies like NGOs and supranational global institutions like the FAO are co-designing education strategies to promote healthy eating as part of their development projects in third countries.

*Are European governments using **transboundary education measures** enough?*

Policy instrument: Border measure

The increasing number of outbreaks of **transboundary pests and diseases of plants and animals** is posing alarming threats to both human and nature, therefore to food and nutrition security and the environment as a whole. Being the EU a major trader of food and feed, their hygiene and status are subject to strict **import, transit and export rules** in the form of border measures to ensure that all imports fulfill the same high standards as products from the Union.

Most of the mapped border policies address the **food safety** policy goal (79%), while the remaining share deals with market-oriented issues concerning the safety of plant seeds and animal food products (20%).



*As **climate change** is partly responsible for the changing distribution of animal and plant pests and diseases, and thus for the transboundary threats resulting in food chain emergencies, how could border measures have a stronger focus on **reducing the environmental impacts** of the increasing movements of people, animals, plants and agricultural products?*

Proportion of mapped policies using border measures by PRIMARY TARGET



Import and export companies are the most addressed players when border measures are enforced (93%).

The growing global nature of food trade have broadened the **access to ethnic cuisines** and the **availability of exotic ingredients**, which have led to an increased demand for new food products. Not only does this trend pose **food safety issues** associated with products' transport across national borders, but it also raises socio-economic **equity issues** in third countries producing the food imported in the Union (e.g., depletion of local natural resources, increase in prices, homogenization of diets and biodiversity losses).

*Should border measures be designed to guarantee that the food entering the EU has been produced following certain **equity and fair trade standards**?*

Policy instrument: Delivery of services

The delivery of services as a food policy instrument is primarily used by the European institutions to provide Member States with **practical support** and **advice** on a variety of issues related to the food system.

From the food policy mapping, it emerged that the support delivered by the EU in form of services is mostly directed at homogenising European and national marketing schemes, with a special attention to plant and animal welfare and rural businesses and, therefore, to the improvement of farmers' competitiveness and fair treatment.

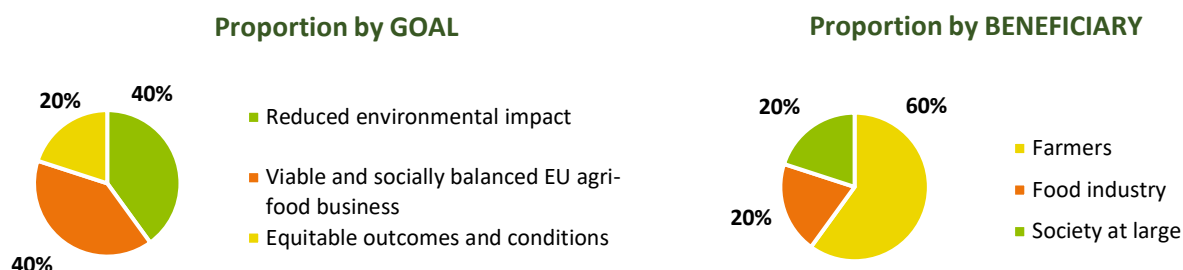


Table 5 - Examples of policies implemented by the delivery of services:

Policy	Goal	Beneficiary	Target
<u>EUROPHYT</u> Web-based network and database connecting EU national Plant Health Authorities, EFSA and DG SANTE for plant protection against pests and plant diseases.	Reduced Environmental impact	Farmers	Public authorities
<u>Rural Development Foundation</u> A self-governing legal entity who deals with debt obligations, lending and shaping the reputation of rural life.	Equitable outcomes and conditions	Food industry	Import/export companies
<u>European Union Reference Centre for Animal Welfare</u> Support for horizontal activities of the EC and EU Member States in the area of welfare requirements for animals	Reduced environmental impact	Society at large	Farmers
<u>Council Directive on the common catalogue of varieties of agricultural plant species</u> Each Member State shall establish a catalogue of the varieties officially accepted for certification and marketing.	Viable and socially balanced EU agri-food business	Farmers	Public authorities
<u>Support for exporters</u> EU support for the internationalisation of EU businesses.	Viable and socially balanced EU agri-food business	Food industry	Import/export companies

Policy instrument: Education measures

Education is a key policy instrument for addressing all FOOD 2030 priorities and building coherent and cross-sectoral strategies. Depending to the thematic area they aim to address, education measures range from the promotion of a **behavioural change** towards more conscious choices, the incorporation of **nutrition and food science classes** in higher education, educational programmes to bring children closer to the health and food issue, to **support and free advice** for employees who work in the agri-food sector.

Proportion of mapped policies using education measures by GOAL

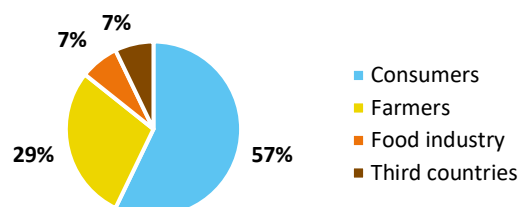


As it emerges from the mapping, **nutrition** is the policy area that calls the most for education measures (50%). The number of food-related degree programmes in Europe continues to increase, and creative ways to sensitise children to this topic are being tested in kindergartens and primary schools. This kind of policies are extremely relevant to counterbalance today's trend towards fast and convenient food – which often has low nutritional value, wasteful packaging and rely on imported ingredients – linked to changing lifestyle and time constraints on cooking activities.

*Considering its urgency, is the **environment** – and all related sustainability aspects – covered enough by education measures?*

The production of **food and packaging waste** is increasing (up to about 88 million tonnes annually), and most of it is generated by **households** (53%). *Should education campaigns in schools pay special attention to this issue and its causes? Could **waste-awareness campaigns** in primary schools inspire a gradual change towards more sustainable waste management practices in the entire household?*

Proportion of mapped policies using education measures by ULTIMATE BENEFICIARY

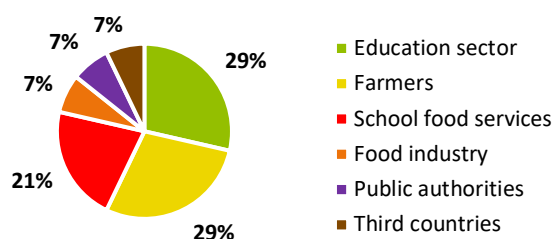


As expected, this figure reflects the results shown in the goals pie chart: nutrition policies use education measures to benefit **consumers** and agri-food business ones to benefit **farmers** and the **food industry**.

Thanks to education measures, indeed, consumers have the opportunity to understand what effects food has on their health and to make more conscious choices, thus increasing their **health and food literacy and consciousness**. However, this form of **consumers empowerment** is still poorly distributed among citizens with lower education levels. *How to guarantee food consciousness at all levels?*

*How can **food industry**'s employees be more consistently encouraged to improve their professional skills and competences through specific trainings? Could the development of **horizontal knowledge-sharing systems**, such as networks and hubs, represent effective solutions?*

Proportion of mapped policies using education measures by PRIMARY TARGET



From the mapping, it emerged that education measures aim to benefit consumers through the **education sector** itself (29%), especially when higher education is involved, and **school food services** (21%). As for policies benefitting farmers and the food industry, education measures are implemented directly through the respective stakeholders group.

*May modern **media** have a role in providing free trainings on FOOD 2030 priority areas to the general public? Are online educational tools (e.g. MOOCs) effective?*

Policy instrument: Fiscal policy

Fiscal policies are applied in the form of:

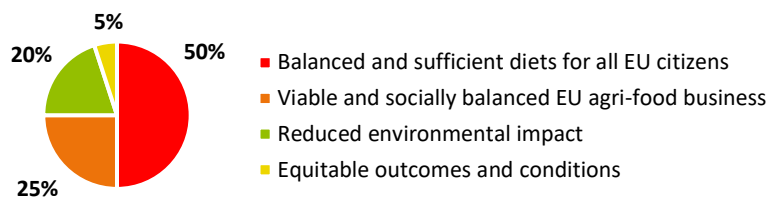
- **disincentives**, namely **excise or sales taxes on unhealthy items** such as “cheap” energy-dense and nutrient-poor food ingredients, or the removal of tax benefits for industries selling unhealthy products;
- **incentives**, namely **subsidies for producing healthy items** such as fruit and vegetables, which however have a lower diffusion rate compared to disincentives, as they do not generate budget revenues but, rather, are very expensive and place a consistent burden on public budget.

Well-designed fiscal policies on food, either taxes or subsidies, have the power to change not only **prices** but also consumers’ **purchasing and consuming choices** regarding those food products or ingredients targeted by such policies. In fact, this market-based approach is a mechanism to make consumers pay the **true social and environmental cost of food**. In the case of disincentives, consumers lose welfare as they pay higher prices and consume less of the taxed foods and producers lose revenue, but in the long run these losses are balanced by gains in both tax revenue and public health.

They require strong efforts from more than one sector: while the **health sector** would be concerned about policies’ effectiveness in improving health through changes in diets, the **finance sector** would focus on which are the most suitable measures and on how to administer them and assess their impact on the economy as a whole.

Proportion of mapped policies using fiscal policies by GOAL

Half of the mapped policies aim to **cut the consumption of food and drink products with high saturated fat and sugar content**, thus reducing **non-communicable disease rates** among the EU population.

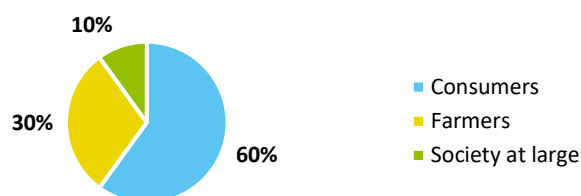


*Are **emission-based tax schemes** on food a viable tool to reduce the agri-food sector’s greenhouse gas emissions (20%)? Would they stimulate a **shift in primary production practices** and curb the current **over-consumption of food with high environmental footprint**?*

From our mapping, it appears that fiscal policies have very specific focuses, either on health or the environment. *To achieve both environmental and health benefits, could it be feasible to **integrate environmental and nutritional food taxes** in a more holistic approach? Is there consistency across the two objectives? Or they would risk losing specificity and, therefore, effectiveness?*

The potential impact of fiscal policies on **equity** is a major concern: if inappropriately applied, they risk affecting disproportionately the lower-income segments of the population, who already spend a great proportion of their incomes on food (usually cheaper and of poorer nutritional value). However, being more responsive to fiscal incentives and food prices than wealthier consumers, they adapt their purchasing patterns more rapidly and gain most in terms of health benefits.

Proportion of mapped policies using fiscal policies by ULTIMATE BENEFICIARY

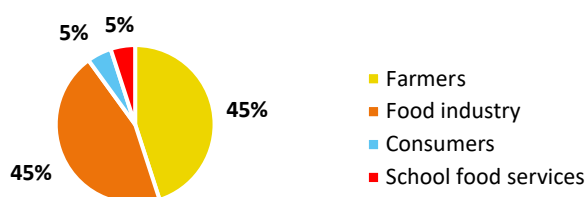


As mentioned above, **consumers** are those at which most fiscal policies are addressed (60%), with the hope of redirecting their consumption behaviour towards healthier choices through market measures. **Farmers** benefit from fiscal policies through various programmes subsidising farming in rural areas (30%), including funds to restructure or convert their production and enhance organic farming practices. Lastly, initiatives like return systems to allow consumers' delivery of empty packaging to be recycled and compensation mechanisms for the renewable energy generated by farms and food industries have the view of benefitting the **society** (10%).

Food industries are seldom targeted by fiscal subsidies, while being concerned from financial disincentives and fear detrimental economic effects on their food production. However, levying taxes on products for which there are close and untaxed substitutes may create an opportunity for the food industry to encourage customers to **switch to the healthier substitutes** through information measures (e.g., advertising on media) or discounts.

Are fiscal measures accompanied by adequate information policies?

Proportion of mapped policies using fiscal policies by PRIMARY TARGET



To evaluate the effectiveness of fiscal policies on food, it is essential to understand to what extent consumers change their food consumption patterns as a response to changes in prices.

*To what extent is the **research sector** effective in delivering observational studies to explore the actual **substitution processes in consumer choices**, with a particular focus on lower-income regions/groups where the population could be more affected by food price fluctuations?*

Should more tax incentives promote the research, development and marketing of healthier foods in the food industry?

Policy instrument: Food and agricultural standards

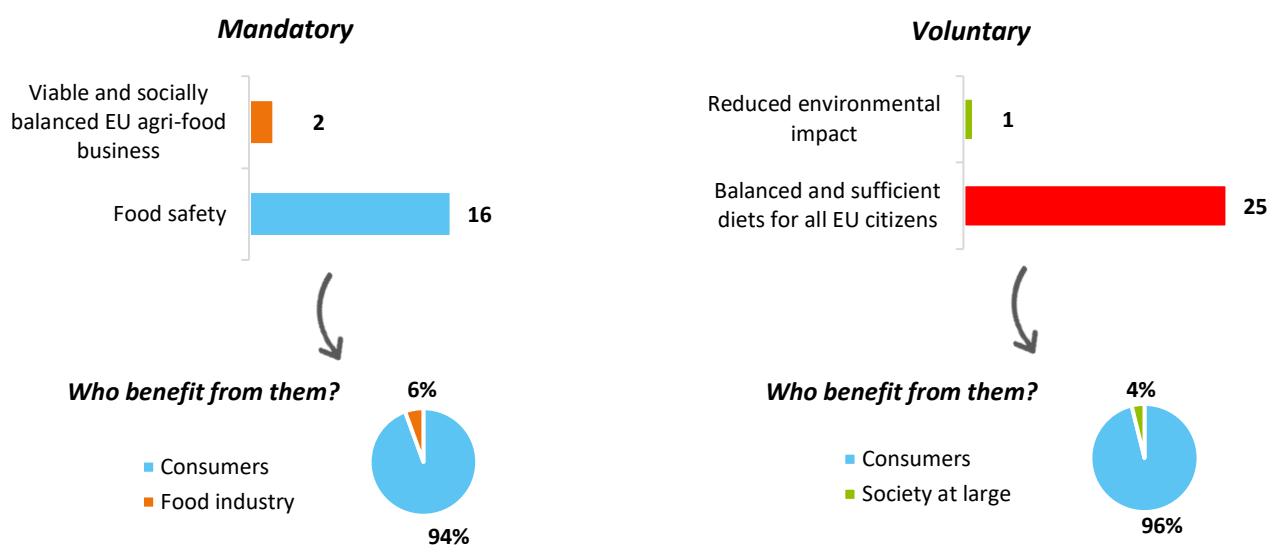
Food and agricultural standards are essential instruments to improve the **certainty**, **credibility** and **accountability** of food transactions by the food industry, discouraging irresponsible activities and rewarding beneficial efforts. Not only are they established to ensure food safety (e.g. by setting thresholds for maximum allowable levels of contaminants or additives in food), but also to reach all other policy goals linked to **FOOD2030 priorities**.

- **'Product' standards** specify the characteristics of the final products (e.g. shape, size, weight, safety, authenticity, energy, nutritional content and quality attributes).
- **'Process' standards** specify the production techniques used (e.g. organic, biological, free-range, environment-friendly, fair trade) at all different stages, from raw material processing to packaging and distribution.
- **'Performance' standards** specify the expected characteristics of food products at the different stages of the food system (e.g. the maximum allowable amount of pesticide residue on specific products at the time of purchase).

Food and agricultural standards continue to evolve in response to changes in technology, scientific developments regarding the risks associated with food and directly in response to consumer and societal demands, all factors that have contributed to make them more stringent and complex.

They can be either **mandatory** or **voluntary**: the former are legislative instruments enacted to ensure quality controls and protect consumers, the latter are non-binding commitments, recommendations or guidelines.

Proportion of mapped policies using food standards by GOAL

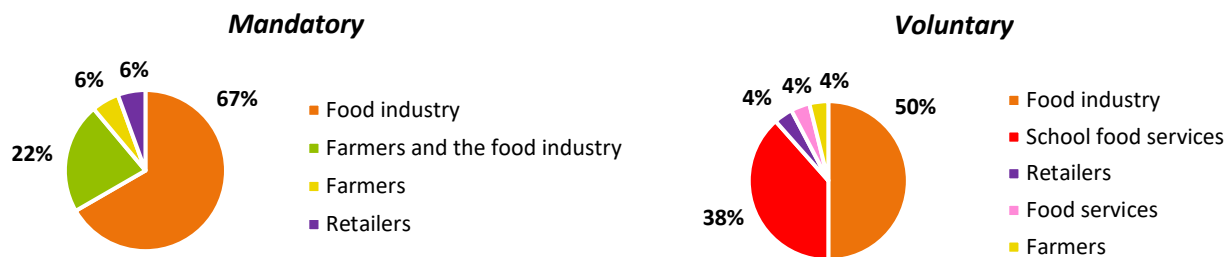


As it emerged from the mapping, we have found 25 policies on nutrition standards (e.g. national agreements to reduce salt, saturated fats or added sugars of food products; commitments to improve food nutritional quality; guidelines for school meals), 16 policies on food safety (e.g. limits on pesticide use; hygiene criteria on food production and processing; lists of safe food supplements, additives and enzymes), 2 policies regarding the agri-food business and only one environmental standard.

The two histograms above show a clear distinction depending of the degree of obligation: all food safety standards are compulsory, while nutrition ones are all voluntary.

*Would it be beneficial to make **nutrition and environmental standards** mandatory as well?*

Proportion of mapped policies using food standards by PRIMARY TARGET



The policy actor through which food and agricultural standards act the most is the **food industry**:

- as for **mandatory** standards (67%), companies, as well as farmers, are responsible for putting rules into practice while ensuring the effective functioning of the internal market and, ultimately, for the protection of human health;
- as for **voluntary** standards (50%), the food industry is encouraged to adjust the nutrient composition of the food produced according to specific agreements and commitments.

*Considering the important role played by **retailers**, why are they targeted only by 6% and 4% of the standards mapped?*

Many EU governments promote nutrition standards for on-site meals, mainly stressing the urgency to rebalance the nutrient content of the food offered and reduce unhealthy ingredients.

*How can **public authorities** enforce mandatory, and not just voluntary, standards for school meals?*

Apart from quantitative adjustments on nutrients, should public authorities make greater efforts to ensure that the food served is sustainable, fairly produced and environment-friendly?

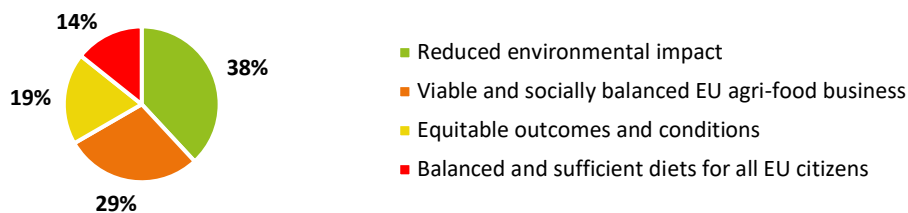
*May **school gardens** providing fruit and vegetables and **agreements with local farmers** providing dairy and meat products ('farm to school' programmes) be best practices to be spread at EU level?*

*Are **media** targeted enough by governments to limit marketing to children of food and beverages that do not meet nutrition standards?*

Policy instrument: Income support

Since the turn of the century, new priorities other than agri-food business efficiency emerged as major concerns: food and farming systems are not only required to provide sufficient but also **high quality and nutritious food** to meet consumers' needs, while resisting to **increasing climate and economic shocks** at the same time. In order to face these demanding challenges, EU agriculture is undergoing significant **structural changes** (e.g. declining number of farms, growing farm size, increasing product specialisation, 'exit from agriculture'), part of which has been determined by agricultural subsidies that have led to a more capital-intensive and homogenised production. In response to this, new income support policies have been established to improve the **purchasing power** and **access to food products and/or agricultural inputs** for lower-income consumers and producers and to 'green' their farming techniques, thus helping tackle disparities and environmental pressure as well.

Proportion of mapped policies using income support by GOAL

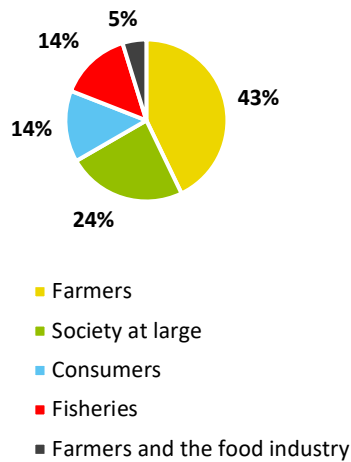


In the context of food policies, income support is instrumental to all four policy goals and, broadly speaking, the smooth functioning of the EU food system in several ways, for example:

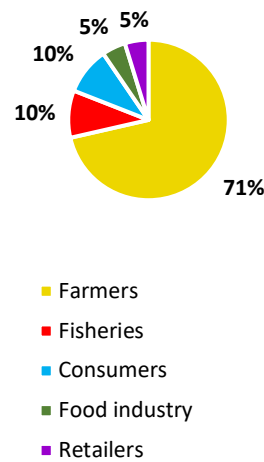
- through direct payments to farmers for incentivising organic and environment-friendly farming techniques to reduce the **environmental impact** (38%);
- through funds to boost sustainable investments into farming restructuring, modernization, diversification and uptake of new technologies (e.g. precision agriculture, big data) to improve farms' **competitiveness** and resilience (29%);
- through national direct payments to farm and aquaculture operators to facilitate their access to credit and reach the **equity** goal (19%);
- through food aid and assistance (e.g. vouchers or cash transfers), provision of fresh food to 'food desert' areas, and supplementation programmes to address the **nutrition** goal (14%).

Proportion of mapped policies using income support by ACTOR

by ULTIMATE BENEFICIARY



by PRIMARY TARGET



In the context of agri-food incentives, **farmers** play a multi-purpose role (71%). They are targeted by policies to **facilitate their access to finance** and allow them to **sustainably improve their farming structure** for the benefit of the whole agri-food sector and, at the same time, the support they receive for **greening their production techniques** is beneficial not only to farming outputs but also to the present and future societies' overall wellbeing.

*How is it possible to integrate the **education sector** into the design of income support policies?
Are skills development, knowledge, innovation, business development and investment support
addressed enough when offering income support?*

*Do all recipients have proper **information** on how to best exploit the support received?*

*Which role does the **research sector** play? Could it prove useful for national policy makers to develop
tailor-made schemes that reflect farmers' specific needs?*

Policy instrument: Information measures

Nowadays, people have access to always more information about food safety and quality, food fraud, farming methods, and many other knowledge areas directly linked to the food system.

Proportion of mapped policies using information measures by GOAL



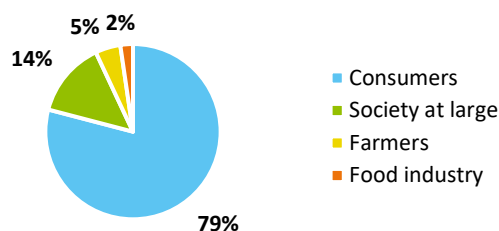
From our mapping, it emerges that information measures are mostly used to convey the urgency of switching to **healthier diets** (65%) through campaigns that focus on how to control portion sizes, limit saturated fats, sugars, sodium or salt, and increase fruit and vegetables daily intake.

The second goal on which information policies insist the most is the **reduction of environmental impact**, in particular through campaigns aimed at limiting food losses and facilitating vertical and horizontal transfers of information from research to farmers or among farmers themselves.

*How urgent is the need for more **food safety** information measures on how to read labels, detect the presence of food additives and properly store and prepare food?*

*Could more information measures be devoted to raise citizens and consumers' awareness of the level of **fairness and equity** of the food products they purchase?
Or the "fair trade" label sufficiently address this matter?*

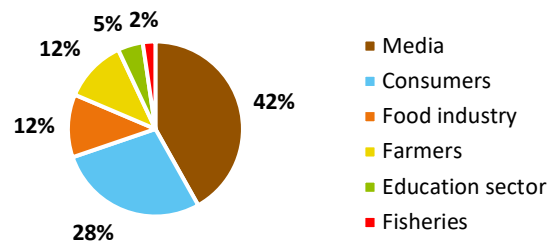
Proportion of mapped policies using information measures by ULTIMATE BENEFICIARY



Unsurprisingly, **consumers** are those benefitting the most from information measures (79%).

Today's increasingly informed consumers are able to make food purchasing choices that support and ultimately benefit certain food industries more than others, depending on the products' characteristics they offer. *Which kind of information and communication measures should food companies integrate into their marketing strategy to fully take advantage of this consumer-driven trend? With this in mind, should food industries be considered as ultimate beneficiaries of information policies too?*

Proportion of mapped policies using information measures by PRIMARY TARGET



Here the active role of **consumers** as policy target emerges more than it does when looking at the education measure's pie chart. Indeed, consumers' values and ethical attitudes directly affect mass consumption patterns and have the power to influence individual behaviours. For this reason, they represent a strategic target group through which food information policies can benefit the society at large and consumers themselves.

*Since consumers have the power to freely and easily share their views on food safety and quality through social media, could **media** be an opportunity and a risk for the food industry at the same time? Could this represent an incentive for the food industry to improve their **accountability**?*

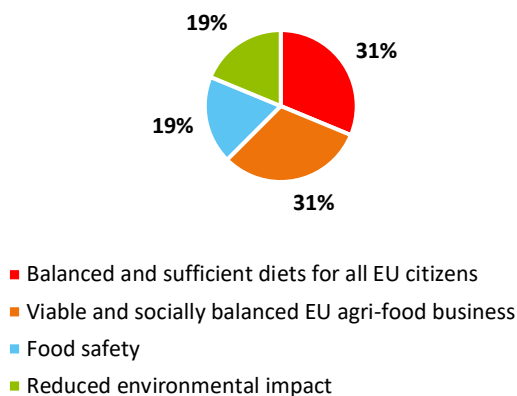
Consumers' concerns regarding food safety not only result from industrial processes, but also from **farming methods** that may involve the use of chemical sprays, fertilizers, artificial additives and preservatives. *Should farmers be considered as a strategic policy target through which transparent information on farming practices can reach consumers and the society?*

Policy instrument: Labelling measure

Nowadays consumers are always more interested in understanding what effects the food we eat have on our health and wellbeing, its origin and production methods, thus demanding full **transparency, traceability** and **authenticity** from the food industry, farmers and fishermen. This consumer-driven demand for a return to 'real food' is also accompanied by growing pressure from governments and the civil society to make food production methods more sustainable, green and fair, using specific labelling measures (e.g. organic farming, fair trade, animal welfare, carbon footprint).

Food labels on the food purchased in supermarkets can take many forms, from nutrient lists and profiles to informative logos and traffic light schemes. Labels should be comparable, transparent, simple, easily verifiable and accessible to consumers.

Proportion of mapped policies using labelling measures by GOAL

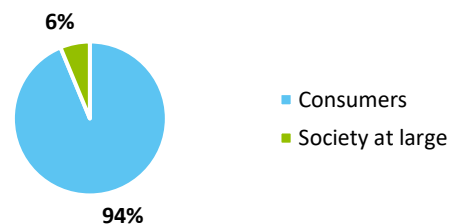


Nowadays, food products can be certified following different parameters: not only by their nutritional and caloric content, but also by their origin and distance, the fairness of their production system, the authenticity of their basic ingredients, the impact they have on the environment, and so on.

For this reason, our mapping suggests that labelling measures are used as a policy instrument to reach almost all goals in a relatively balanced way.

Proportion of mapped policies using labelling measures by ULTIMATE BENEFICIARY

Unsurprisingly, **consumers** are the stakeholders that labelling measures aim to benefit the most (94%), being those purchasing food products marked with labels.

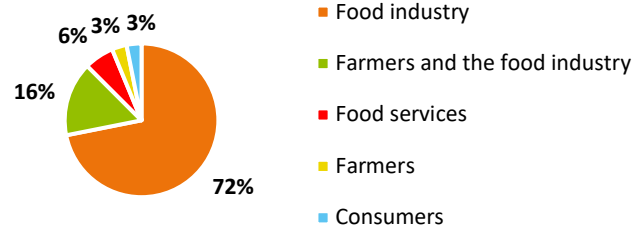


None of the mapped policies are designed to benefit **food producers**. However, consumers' increased awareness on the food we eat – and their potential willing to pay a higher price for it – represents an opportunity for food companies to develop new and more sustainable, fair and healthy products.

*In light of this, may the **food industry** and **farmers** be considered as an ultimate beneficiary too?*

Proportion of mapped policies using labelling measures by PRIMARY TARGET

As previously said, **food producers** are the primary target through which labelling measures can benefit consumers (72%).



Citizens and **consumers** are putting always more pressure on nutrition, sustainability and equity-related labels with which industries mark food products. *Are they gradually gaining the marketing power to influence the food industry and its supply? Can we say that labelling policies act through consumers' new and empowered role to ultimately benefit consumers themselves?*

From our mapping, it seems that **food services** play a minor role in guaranteeing food transparency, traceability and authenticity (3%). *Could labelling systems displaying the nutritional content of the food served in restaurants or cafés influence both consumers' choices and caterers' food selection towards healthier food and beverages?*

*Is the **research sector** useful to analyse consumers' views and identify strategies to solve information asymmetries between food producers and food end-users? Can it also play a role in better understand consumers' behaviour towards environmental and ethical labels?*

Policy instrument: Regulations

More than a third of the mapped food policies are enforced through the use of regulations. In recent years, some economic sectors have drawn up tailor-made regulations towards industries' self-organisation according to specific dictates. For instance, the Hygiene Package adopted in 2004 puts the responsibility of implementing rules on foodstuffs hygiene on the various food system actors through a self-regulating system using the HACCP method (Hazard Analysis and Critical Control Points).

*For which policy goals does it seem more convenient to use **self-regulation** instead of regulation?
Do we know the conditions under which regulation is more efficient than self-regulation?*

How many food system regulations have been mapped?

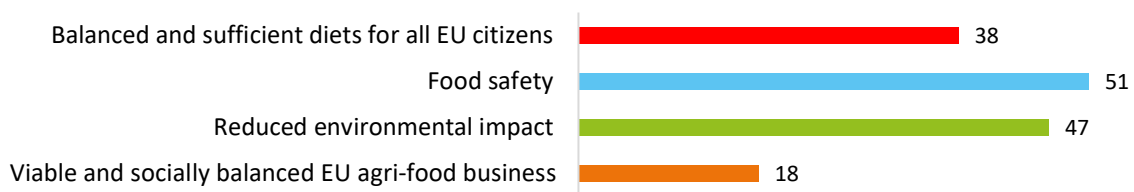


Figure 1: Number of food policies using regulation as a policy instrument broken down by policy goal.

What is the share of regulatory frameworks compared to the use of other instruments?

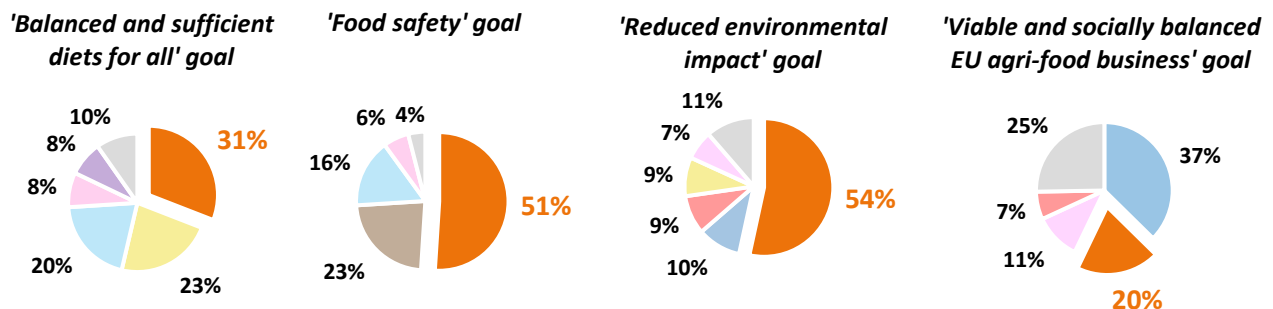


Figure 2: Percentage of instruments used to reach each policy goal. The orange slice refers to the share of policies using regulation as an instrument. The share for both the Equitable outcomes and conditions and the Cross-sectional, R&I oriented goals is 0%.

From the mapping it emerges that regulation is primarily used to reach the **environment** (54%) and **food safety** (51%) goals. *Is it an inefficient policy instrument to address **equity** in the food system?*

Through which PRIMARY TARGET do regulations act?



Policy instrument: Research & Innovation

We define R&I as a **policy instrument** to reach a given policy goal, rather than a goal by itself. Following the classification by Rogge and Reichardt (2016), the class of R&I policy instruments has been broken down into three dimensions:

- **Economic instruments** (e.g. fiscal measures, research funding, etc.)
- **Information instruments** (e.g. funding trainings/education measures, scientific workshops, etc.)
- **Regulations** (e.g. regulation on intellectual property rights and patenting, technology standards, banning practices etc.)



Only one policy using the R&I regulatory instrument has been mapped.

Is there room for a greater use of this kind of regulation?

On which **POLICY GOAL** do **R&I economic instruments** insist on?



Since some R&I actions are not explicitly targeted to a goal, we included an additional dimension called “**Cross-sectional R&I oriented goal**” (e.g. funding SMEs, but without constraining the ultimate goal of their R&I activities; incentives to hire R&I personnel; etc.) among policy goals.

Through which PRIMARY TARGET do R&I economic instruments act?



R&I information instruments predominantly focus on the “**Cross-sectional, R&I oriented**” goal and act through the **food industry** and the **research sector** – for example:

Flanders’ Food

Belgium

Target: Food industry

A strategy-driven **platform** that contributes through innovation to a more competitive, innovative and sustainable agri-food industry.

State Research Agency

Spain

Target: Research sector

It aims at improving accountability, the monitoring of actions, the management of available funds and at reducing administrative burdens.

Strategic Innovation

Sweden

Target: Research sector for the food industry

Swedish companies, authorities and universities act together to formulate challenges, set common goals and prioritise investment in R&D&I.

*Should information about R&I opportunities, funding options etc. act more through **farmers** and **civil society actors** in order to achieve a more effective and **bottom-up** food systems transformation?*

Who do R&I instruments ultimately benefit?

