D1.1 — SOSFood multi-actor network and MS3 – SOSFood multi-actor network establishment

WP1: Stakeholder involvement in data-driven analysis of the food system in the search for new solutions

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Table of Contents

Executive Summary

1. Introduction 3
2. Actions to mitigate climate change 5
3. Social dimension 16
4. Economic dimenison 23
5. Prioritization all along the food chain 28
6. Conclusions and next steps 30

References 31

1. Introduction

SOSFood project aims to enhance the food system by ensuring it is not only healthy and safe but also sustainable, considering its environmental, social, and economic impacts. Deliverable 1.1 – SOSFood multi-actor network – plays a crucial role in this initiative by identifying the needs and expectations of all stakeholders, including consortium partners, across the food value chain. It seeks to promote a comprehensive discussion of promising multi-sectoral practices that make the food system available, affordable, acceptable, and appealing for all.
To achieve this, Euro Coop developed a detailed questionnaire targeting a diverse group of food stakeholders throughout Europe, including those in the key regions of Athens, Lithuania, and Galicia. This questionnaire was designed to gather comprehensive feedback on the current state and future needs of the food system. The responses were collected from 24 stakeholders who are integral members of a multi-actor network, providing valuable insights into the perspectives and expectations of various players in the food sector.

1.1 Methods

To reach the goal of D1.1, we have split the work into 3 different steps: preparation of the questionnaire, identification of the main stakeholders and invitation to take part in the survey. Through the consultation process, we aimed at building up a network and to gather as much information as possible regarding the position on food sustainability of different stakeholders along the food value chain to identify the most shared measures to be taken on the three pillars of sustainability.
A structured, close-ended questionnaire has been sent to a selected number of stakeholders active in the domain of food sustainability at the EU level as well as to other stakeholders mainly in the three countries taking part in this project (Spain, Greece and Lithuania). The questionnaire has been split into four sections with the first three focused on the most relevant aspects of the Environmental, Social and Economic dimensions of food sustainability and a fourth section aimed at identifying the prioritize given to different measures by the respondents.

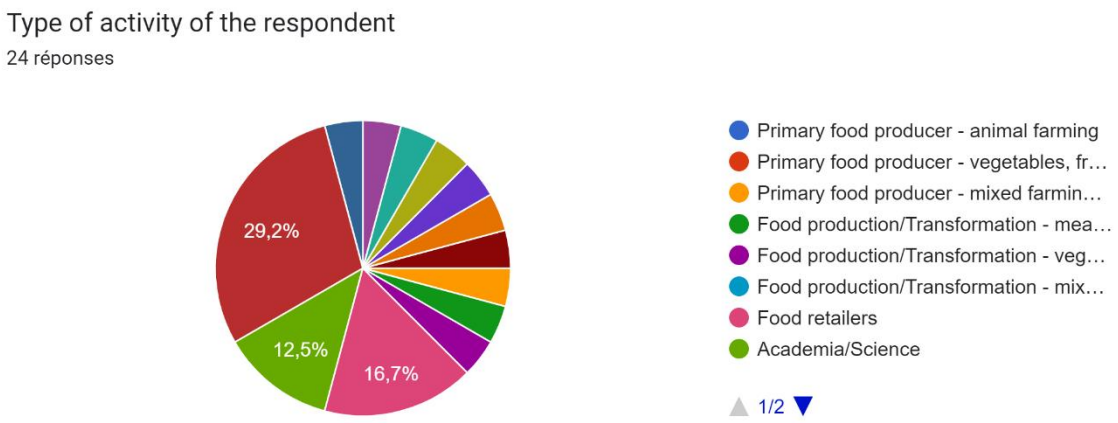
The questionnaire builds upon the large number of publications in more recent years on tackling the different aspects of food sustainability (2–15), proposing a wide range of possible answers to cover all the different positions taken by the main stakeholders on the specific pertinent issues. The questions cover the most relevant aspects affecting the overall sustainability of food production, distribution and consumption to provide multiple information which should enable us to identify the patterns to optimize the transition to greening the food system.

By analyzing the answers, the deliverable leader will extrapolate the highest voted solutions for each dimension, which should then be discussed with the partners responsible for the three case studies of the project, in order to identify which changes proposed by the stakeholders could be better adopted/adapted in their activities/needs/context.

The selected actions will be submitted to a SWOT analysis by which a final decision could be taken.

1.2 Contributions

The questionnaire has been sent to +40 organisations active in the field of food sustainability mainly at the EU level to represent the points of view of Primary food producers, Food producers/Processors, Food retailers, Academia/Science, and Environmental/consumer NGOs.



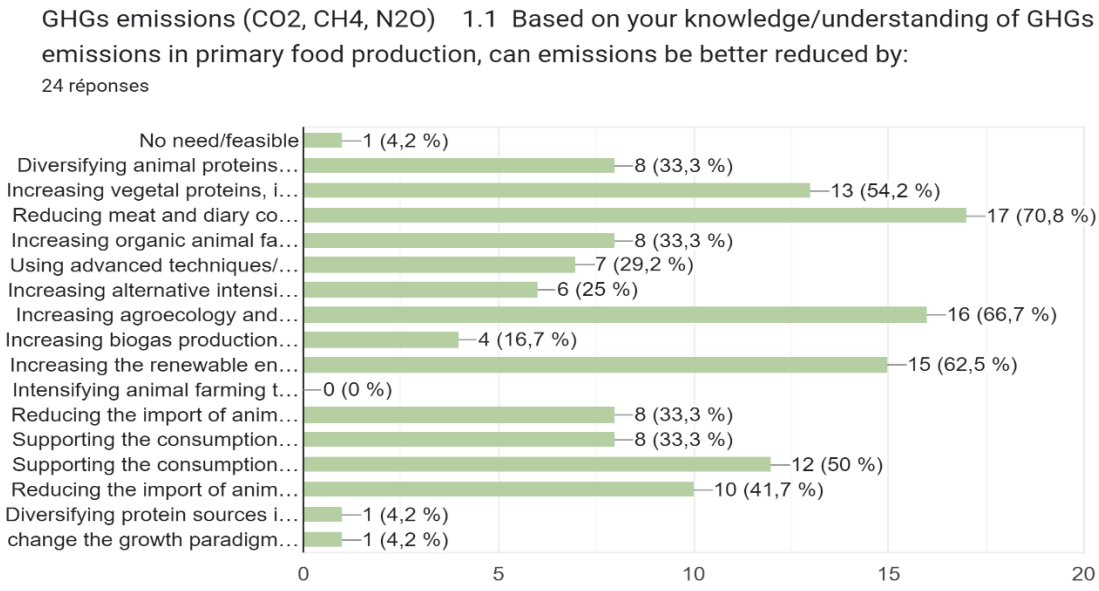
As shown in Graph 1, 24 organizations answered the questionnaire, the highest percentage being represented by environmental organizations (29,2%) followed by retailers (16,7%), science and academy (12,5%) while the remaining 41,6% is equally distributed among the remaining categories.

It's worth noting that the number of environmental organizations active in the debate at the EU level is higher than that of associations representing other interests which might explain the highest percentage of answers.

2. Actions to mitigate climate change

2.1 Primary food production

As shown in Graph 1.1, the most supported measure has been the reduction in meat and dairy consumption (70,8%), followed by increasing the share of agroecology and regenerative agriculture (66,7%), increasing the renewable energy produced/used (62,5%), increasing vegetal proteins, including algae and mushrooms, in human diets (54,2%) and supporting the consumption of locally grown vegetables and fruits (50%).



Graph 1.1

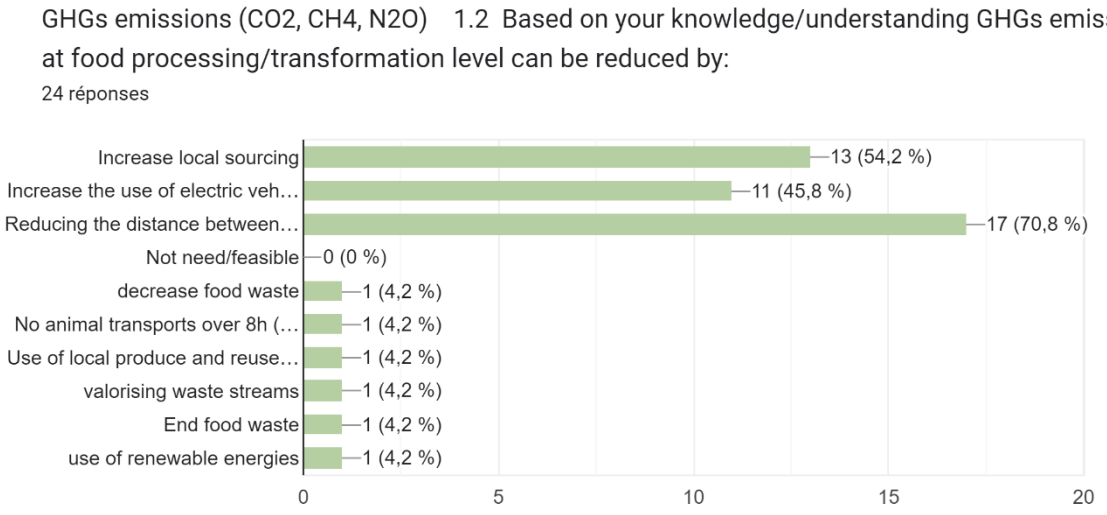
Interventions aimed at increasing the share of locally produced animal feed to reduce the import are supported by 41,7% of respondents while some 30% voted to diversify animal protein sources, increase organic animal farming including aquaculture, support the consumption of locally produced meat and dairy and using advanced techniques/tools in intensive animal farming. Both the reduction of meat and dairy and the increase in vegetal proteins rely on a change in human diet which involves challenging social and cultural aspects, while all other measures rely mostly on political and economic choices.

There seems to be consistent support for the promotion of less impactful production methods (i.e. organic animal and vegetable farming, agroecology, regenerative farming) of local productions of animal feed, meat and dairy, vegetables and fruits. Increasing the role of renewables on the production and consumption side and reducing the emissions

through advanced tools and techniques in animal farming are equally recognized to have possible positive effects in reducing the emissions at the primary production level.

2.2 Food manufacturing/processing

As shown in Graph 1.2, over 70% of respondents think the reduction of emissions could be better achieved by reducing the distance among the different stages of food production and processing while over 54% support the increase of local sourcing and 46% for increasing the use of EVs for transport.

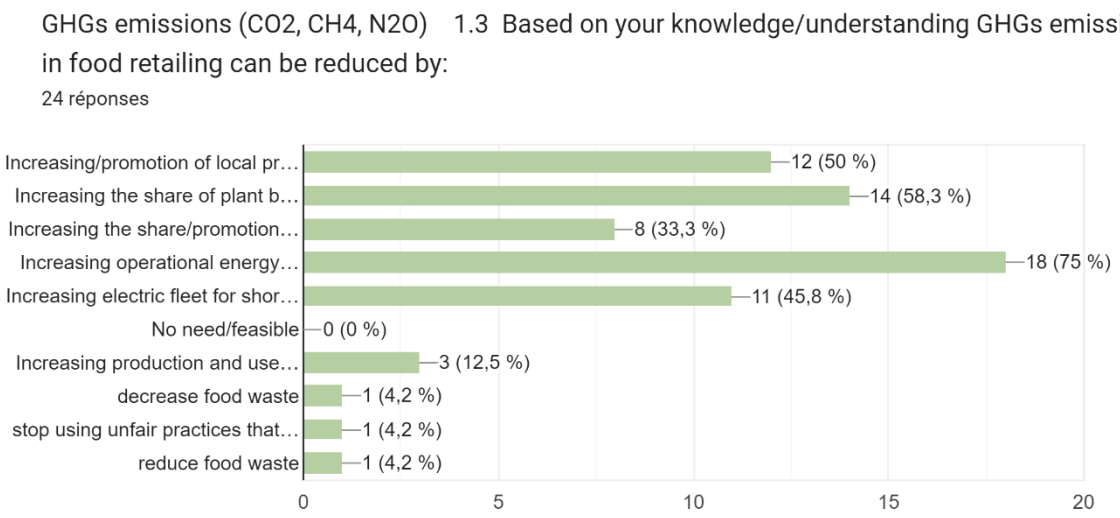


Graph 1.2

Among other measures not included in the precompiled list, the reduction of food waste has received the largest support. The reduction of distance among the different stages could be more easily achieved by promoting the set up of processing facilities closer to the primary production area while for an existing food manufacturer/processor, it could be more difficult to rely solely on local production for its supply. On the other hand, this would contemporarily support local productions and make it easier the transport on EVs.

2.3 Food retailing

As far as the retailing stage is concerned, 75% of respondents think there is a margin for increasing operational efficiency to reduce energy demand, over 58% support increasing the share of plant-based protein products and 50% support the increase and promotion of local food products (Graph 1.3).



Graph 1.3

Almost 46% sees in the electrification of transport system a way to reduce GHGs emission at this stage while over a third attributes a role in the selling organic animal products including from organic aquaculture. Among other measures not listed, the increase of production and use of renewables received over 12% of support while some 8% thinks that reduction of food waste could contribute in reducing the carbon footprint.

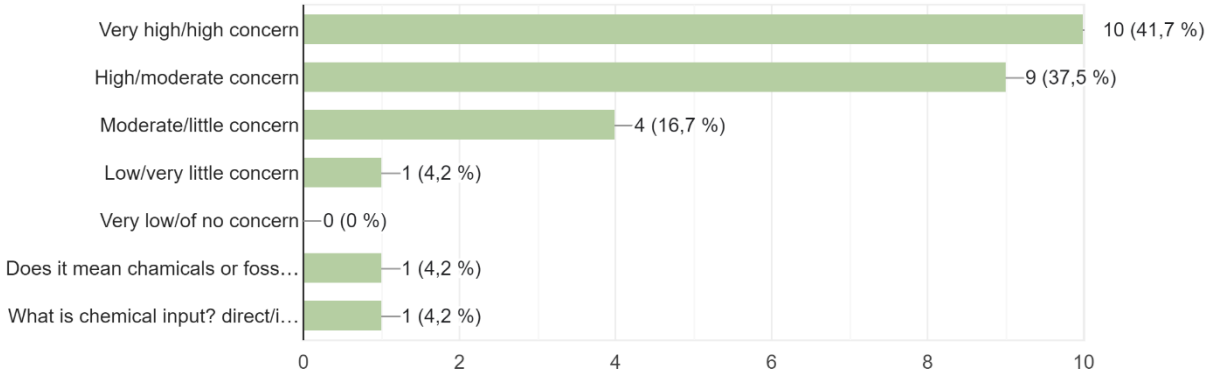
It's worth highlighting that when there is room to reduce the energy demand (i.e. where little or action has been taken) energy efficiency is by large the most cost efficient measure. On the other hand, increasing the share of renewables in a non efficient system could result in increasing costs without reducing the overall energy demand.

2.4 Chemical input to primary production

When it comes to the chemical input (meaning the overall operations that implies using man made chemicals at different stages of food production, for instance fertilization, pest and weed management, antibiotics etc), some 42% consider it's a problem of high/very high concern, over 37% consider i's a moderate to high concern and only some 17% consider it's a moderate concern at the worst. The results are shown in Graph 1.4.

1.4 Based on your knowledge/understanding the overall chemical input for the primary food production (i.e. animal farming, including fishery products, vegetable and fruit) is :

24 réponses



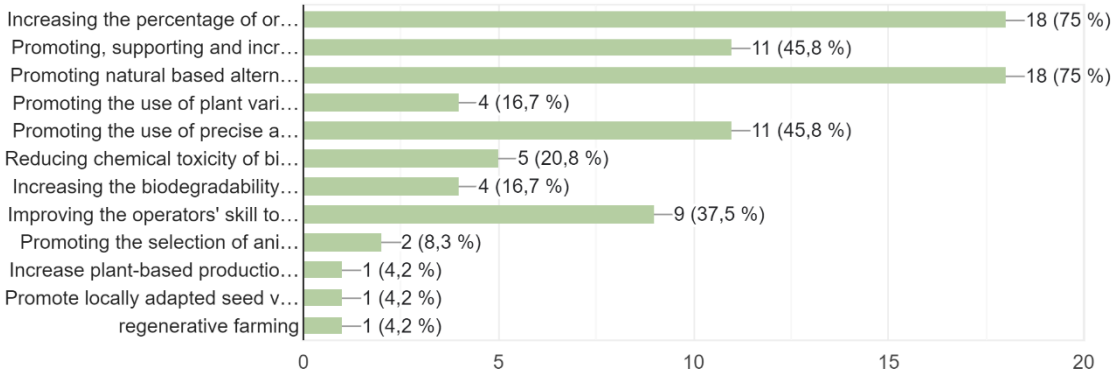
Graph 1.4

2.5 Measures to reduce the chemical input at the primary food production level

When asked about what measures could help in reducing the overall chemical input, a strong majority of consent (over 79%)* indicated the increase of alternative agricultural practices like organic and regenerative farming as the best solution as shown in Graph 1.5.

1.5 Based on your knowledge/understanding the overall chemical input for the primary food production (i.e. chemical fertilizer, biocides, antibiotics) could be reduced by:

24 réponses



Graph 1.5

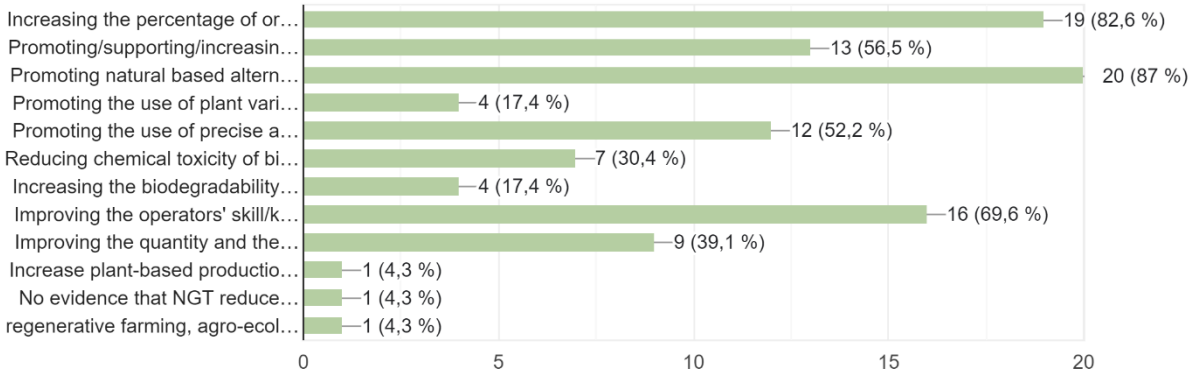
The increase of natural-based alternatives in weed and pest control systems, including crop rotation to be applied even in conventional agriculture, is seen as the best solution by over 75% of respondents. Almost 46% supported the promotion and implementation of integrated pest management (IPM) systems along with the promotion of precise agriculture techniques and digital tools for a better use of chemical input which could lead to an overall reduction in use. Better use of chemicals, eventually leading to a reduction, is thought to be reachable through the improvement of operators' skill by 37,5% of respondents, some 21% support the reduction of the toxicity of chemicals used while around 17% support the improvement in biodegradability of chemicals. When it comes to recurring new genomic techniques (NGTs) some 17% support the use of plant varieties obtained through NGTs but only 8,3% support the selection of animal breeds obtained in the same way.

* 4,2% of respondents indicated regenerative agriculture in the box reserved to other measures although it was mentioned in the first box of answers

2.6 Reduction of chemical pollution from primary food production

When it comes to measures that are useful for reducing the pollution resulting from chemical inputs at the primary production level, again the use of natural-based alternatives received the largest support with 87%*, followed by the increase of organic and regenerative farming with almost 83% of consents (Graph 1.6).

1.6 Based on your knowledge/understanding the overall chemical pollution and its impacts from primary food production (i.e. chemical fertilizer, biocides, antibiotics) could be reduced by:
23 réponses



Graph 1.6

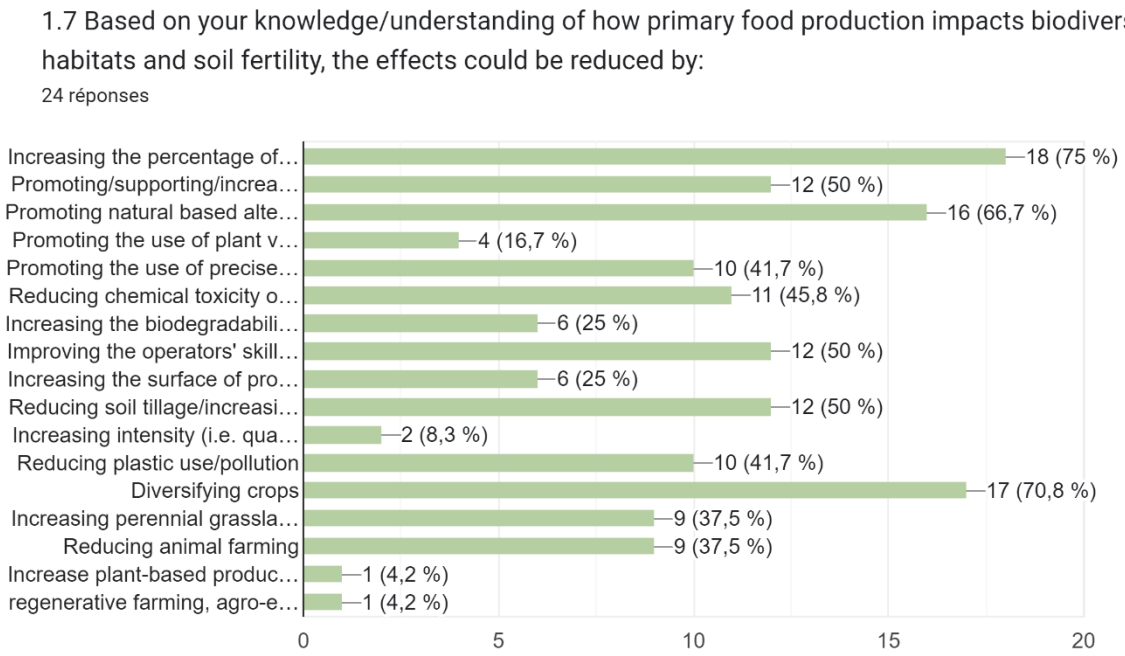
As could have been predicted, the same measures indicated as being fit for purpose to reduce ing the use of chemical inputs are even the measures that might offer the best chance of reducing the chemical pollution linked to agricultural practices. On the other hand, almost 70% of respondents, think that operators' skill plays a crucial role in reducing pollution from chemicals whereas only 37% think the same skill can lead to the reduction of chemical input.

The implementation of IPM plans is thought to be an efficient tool to reduce pollution by over 56% while the promotion of precise agriculture and IT tools received support by some 52%, both results in line with the support received by the same measures to reduce the chemical input. Almost 40% of respondents indicated the need to increase the quantity of wastewater collected and improve the quality of its treatment while 17% supported the improvement in biodegradability of chemicals and the use of varieties obtained through NGTs, the same percentage received as possible solutions to reduce the chemical input.

* 4,3% of respondents indicated regenerative agriculture in the box reserved for other measures although it was mentioned in the first box of answers

2.7 Reduction of the impact of primary production on habitats, biodiversity and soil fertility

As far as the measures that could improve the conservation of habitats, biodiversity and soil fertility, the majority of support (almost 80%*) was for increasing the percentage of food produced via organic and regenerative farming while almost 71% supported the diversification of crops and almost 67% the promotion of natural-based chemicals and crop rotation (Graph 1.7).



Graph 1.7

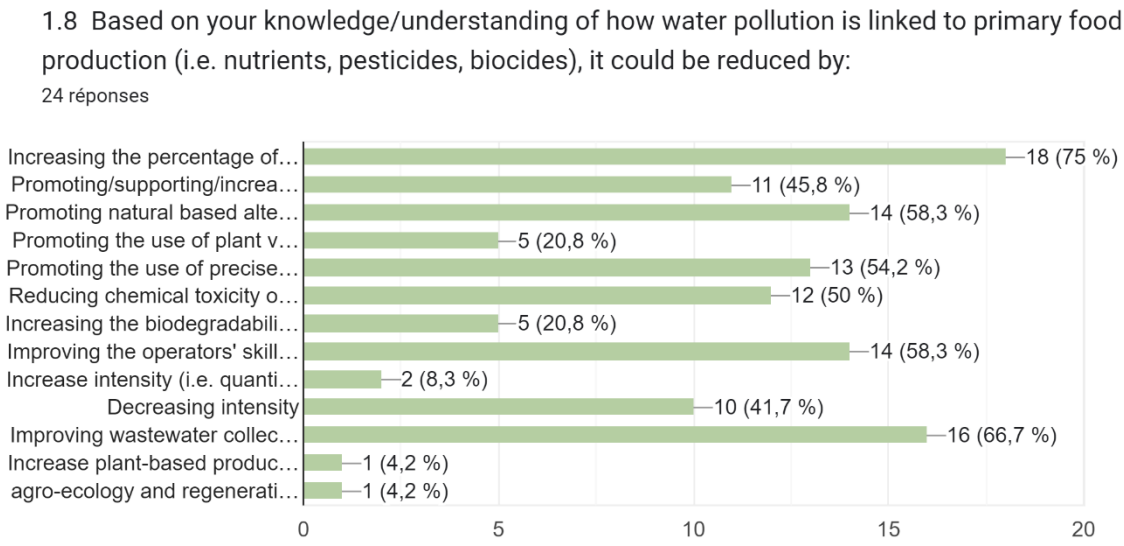
Half of the respondents supported actions aimed at optimizing the use of chemicals by applying IPM systems and increasing operators' skill (the latter being *a condition sine qua non* for the first), as well as the promotion of agricultural techniques that imply low/no-tillage and aimed at increasing the topsoil carbon content. Not far behind, the reduction of toxicity of chemical biocides used at the primary food production level has received almost 46% of support while almost 42% indicates for precise agriculture, crop rotation and IT tools a possible way forward. A significant percentage of respondents (almost 42%) would like to see a reduction in plastic use and pollution. Increasing perennial grassland and extensive animal farming received over 37% of support, the same support as the overall reduction in animal farming. Increasing the biodegradability of chemicals used in agriculture has been supported by 25% which is the same percentage received by the increase of protected areas.

This latter information seems to indicate that the mere establishment of protected areas is not seen as the most valuable solution to preserve habitats, biodiversity and soil fertility. Considering that the relative majority of answers to the questionnaire came from environmental NGOs, this result seems to be quite counterintuitive. Plant varieties developed by NGTs are considered a possible solution by 16,7% of respondents, similar to the support received by NGTs to tackle chemical input and pollution.

* 4,2% of respondents indicated regenerative agriculture in the box reserved to other measures although it was mentioned in the first box of answers

2.8 Reducing water pollution

Once again, even in this case, organic and regenerative farming scored almost 80%* of consent while almost 67% supported the technological improvement in wastewater collection and treatment plants, techniques and technologies (Graph 1.8).

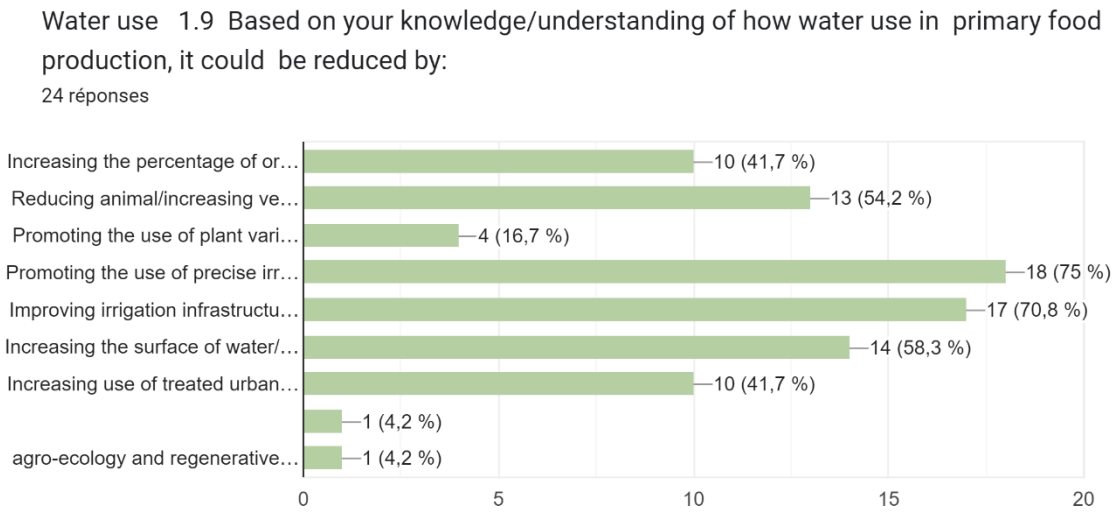


Graph 1.8

Some 58% supported the use of natural-based biocides and the improvement of operators' skills, over 54% the promotion of precise agriculture and IT tools, 50% the reduction of biocides' toxicity, almost 46% the implementation of IPM systems and some 42% decreasing the production intensity. Some 21% voted in favour of an increase in the degradability of chemicals and the use of varieties from NGTs, a slightly higher percentage for the support received by these techniques to tackle other issues.

2.9 Reducing water use at the primary production level

When it comes to the reduction in water usage for primary production, the respondents seem to be inclined to rely more on precise irrigation and the use of digital tools (75%) and on the improvement of irrigation infrastructures to optimize water release and reduce the spillage (almost 71%) (Graph 1.9).



Graph 1.9

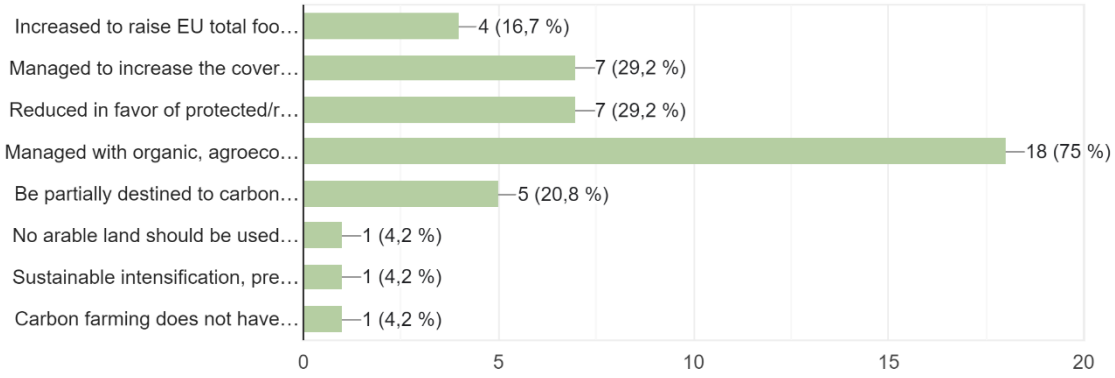
The increase of water, including rainwater catchment in basins received the support of over 58% of the respondents while some 54% support the reduction of animal protein and/or the increase of vegetal proteins in the human diet. Contrary to previous issues, organic and regenerative farming are not considered the best option to reduce water use receiving only 46%* of support, near to 42% of those supporting the use of treated urban wastewater for irrigation purposes. The use of varieties obtained through NGTs is only considered as a possible solution by some 17% of respondents. What can be taken by these results is that investments in infrastructures and technologies seem to be considered the most urgent and effective way of reducing water consumption in primary food production.

2.10 Preferred management systems within the Utilized Agriculture Area in the EU

On the preferred management system in the EU, organic and regenerative farming received again the largest support with 75%, well ahead of increasing permanent grassland and the reduction in favor of rewinding/protected areas that received only some 29% of support (Graph 1.10).

Land use change 1.10 Based on your knowledge/understanding of the total Utilized Agriculture Area in the EU, which of these management plans should be implemented:

24 réponses

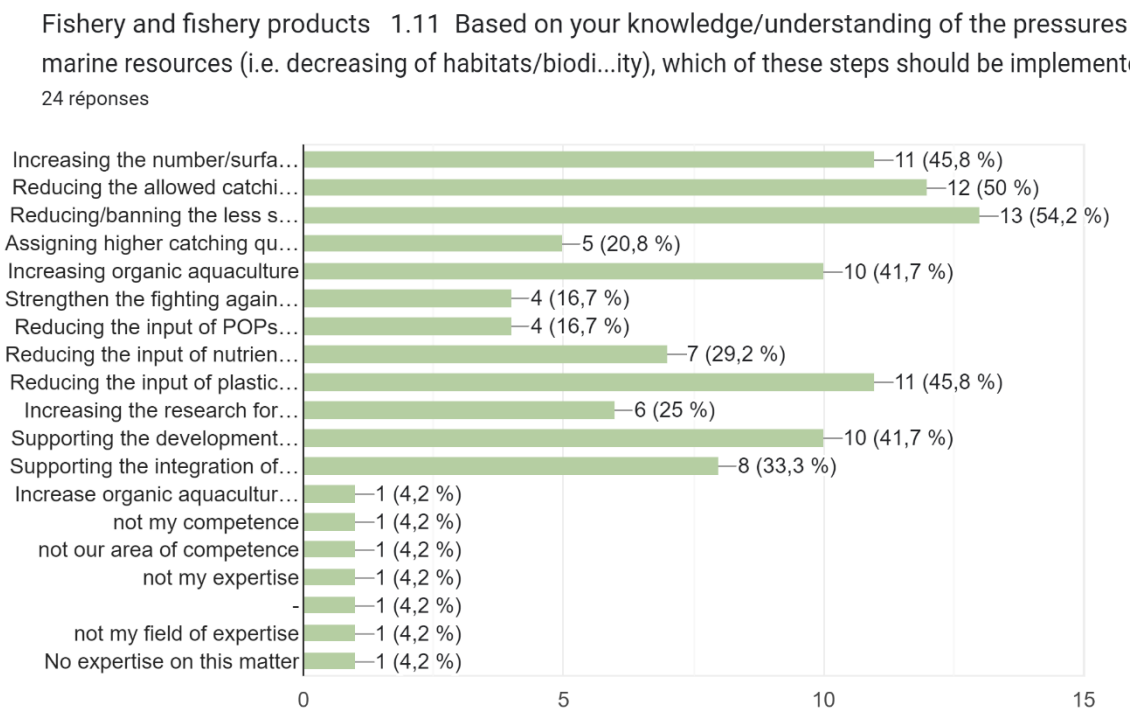


Graph 1.10

Some 21% supported the destination of part of the UAA to carbon farming while only some 17% indicated the need to expand the UAA to increase food production.

2.11 Reduction of pressure on marine resources

Regarding the question of how to reduce the pressure on marine resources, 25% of the organizations that took part in the consultation has declared to have no competence on the matter. Among those remaining, 54% supported a limitation or ban to the most impactful fishery gears (I.e. bottom trawling, large purse nets and 50% the reduction of fishery quota for the species mostly in danger of overfishing (Graph 1.11).



Graph 1.11

The increase of marine protected areas and the reduction of plastic input into water bodies received some 46% of support while almost 42% were in favor of increasing organic aquaculture and more sustainable fishery and aquaculture practices. Over one-third (33%) of respondents gave preference to the role of small artisanal fishery communities for marine protection and sustainable management.

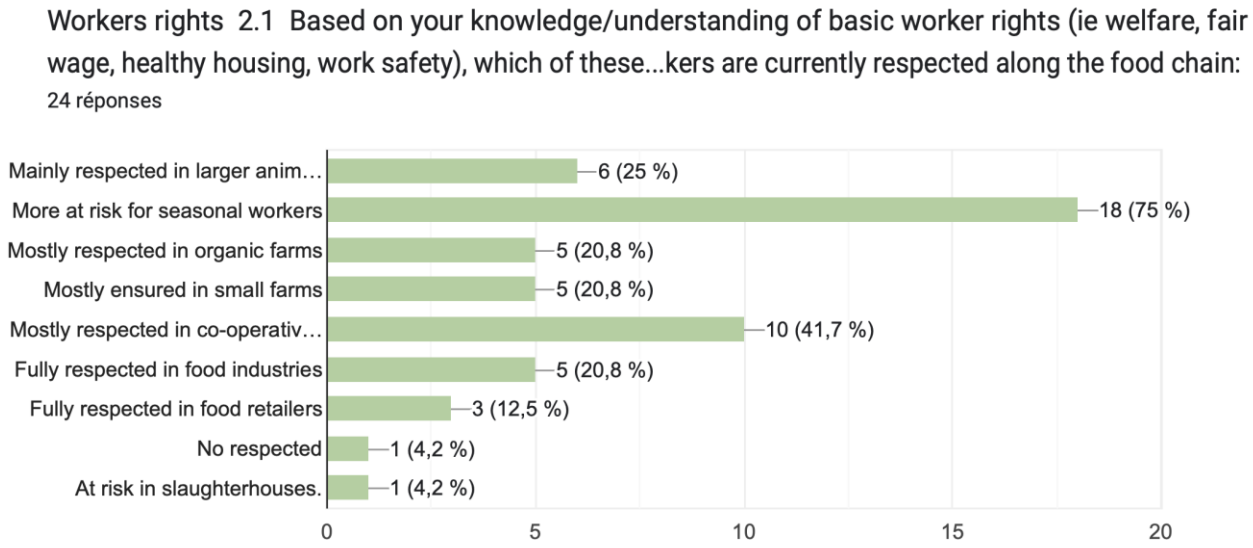
Almost 30% supported the reduction of nutrients released into water bodies, 25% the research for less impactful fishing gears and techniques and almost 21% the assignment of higher catching quota to small/medium artisanal fleets.

Actions to contain the widespread invasive species and the release of POPs into water bodies received the support of only some 17% of respondents.

3. Social dimension

3.1 Assessment of workers' rights

A strong majority of respondents (75%) think that seasonal workers (mostly employed in fruits and vegetable farming) are mostly exposed to the worst working conditions in terms of work safety, fair wages, healthy housing and welfare in general (Graph 2.1).



Graph 2.1

A consistent percentage of respondents almost 42% considers the cooperative business model better suited to respect workers' rights while according to 25%, they are mainly respected in larger farms in the EU, although some 21% think that they are better guaranteed in small and organic farms and fully guaranteed in food industries.

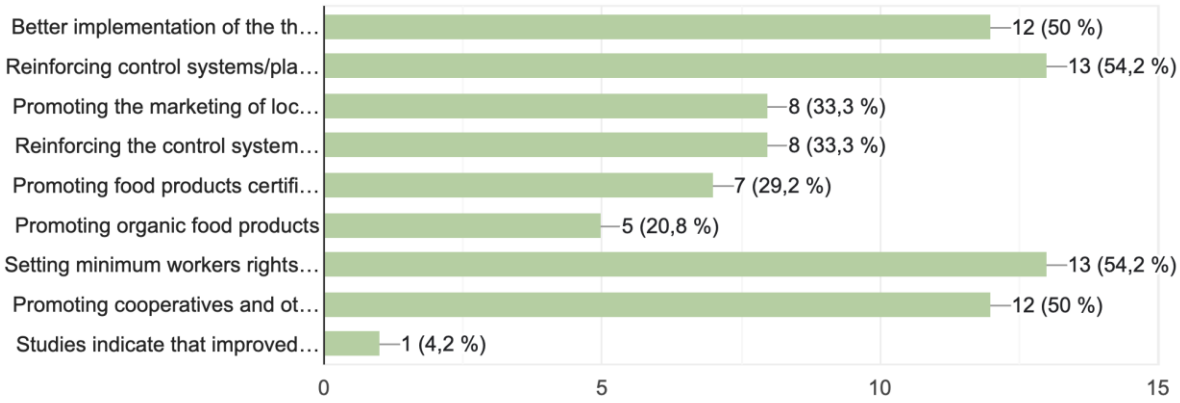
Only about 12% think that workers' rights are fully respected in the food retailing system.

3.2 Improvement of workers' rights

Among the solutions proposed to tackle the inability of a part of the EU population to be able to afford a proper nutritious diet, the large majority pointed toward better integration of food donation and redistribution as a win-win strategy to tackle both food poverty and food waste reduction with almost 71% of support (Graph 2.2).

Workers rights 2.2 Based on your knowledge/understanding of basic worker rights all along the food chain, it could be further improved by:

24 réponses



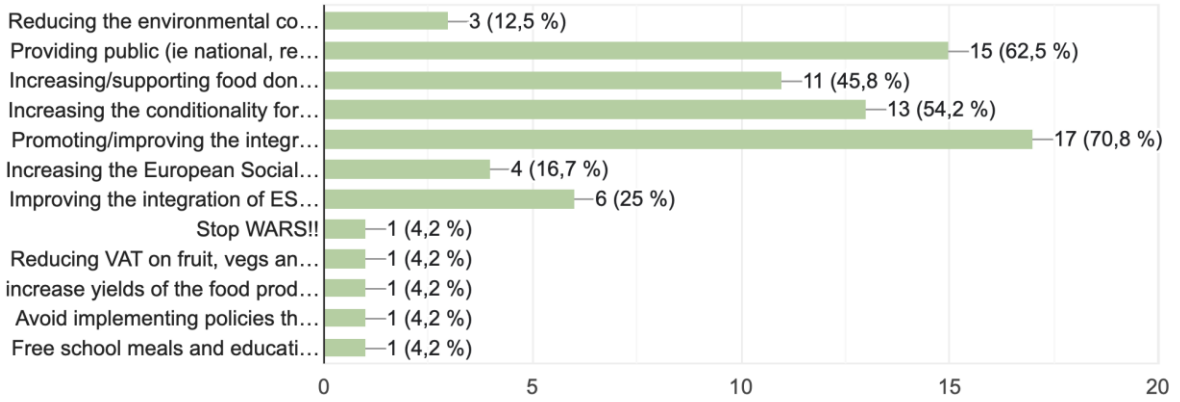
Graph 2.2

3.3 Food poverty

Among the solutions proposed to tackle the inability of a part of the EU population to be able to afford a proper nutritious diet, the large majority pointed toward better integration of food donation and redistribution as a win-win strategy to tackle both food poverty and food waste reduction with almost 71% of support (graph 2.3).

Food poverty 2.3 Based on your knowledge/understanding of food poverty (ie inability to afford a proper nutritious diet), the best way to tackle this issue is by:

24 réponses



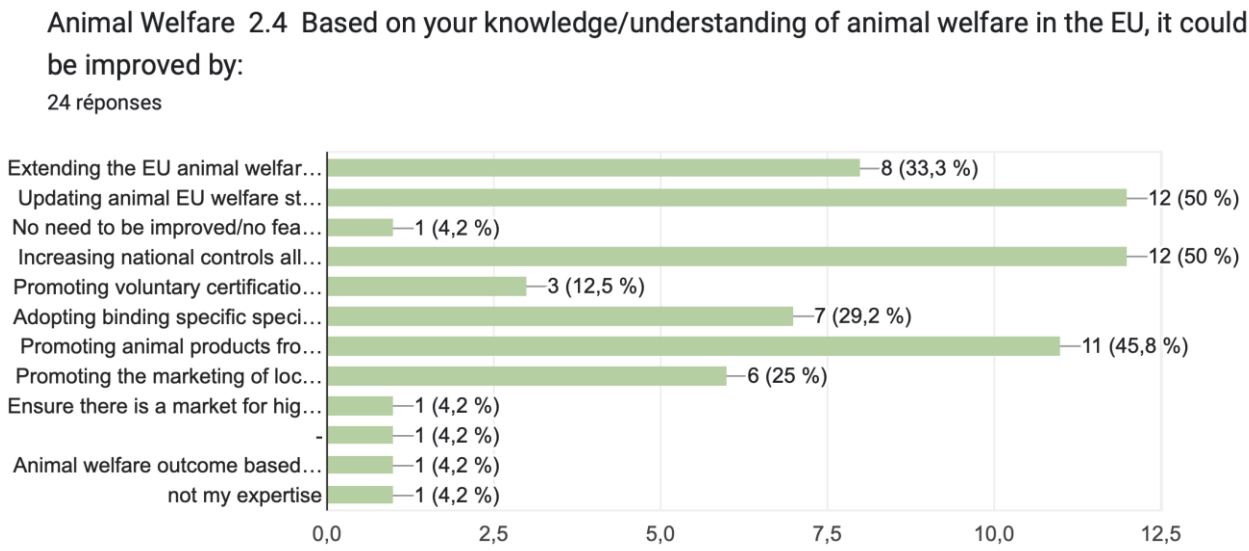
Graph 2.3

Over 62% voted in favor of financial support for those in need by public authorities at national, regional and local level while over 54% supports the increasing in conditionalities for the redistribution of vegetables and fruits withdrawn for market reasons (I.e. to tackle surpluses and avoid market price reduction).

Some 46% supports actors aimed at increasing food donation and food surplus redistribution while 25% supports a better integration of the European funds provided by the ESF+ program and the national funding/services and infrastructure to provide food to those in need and some 17% suggests to increase the ESF while her 12% thinks that food costs should be kept down by releasing the environmental constraints.

3.4 Animal welfare

On the side of animal welfare improvement, the majority of respondents (60%) supported an update of EU provisions based on scientific evidence and an increase of national controls all along the value chain of primary animal products (Graph 2.4).



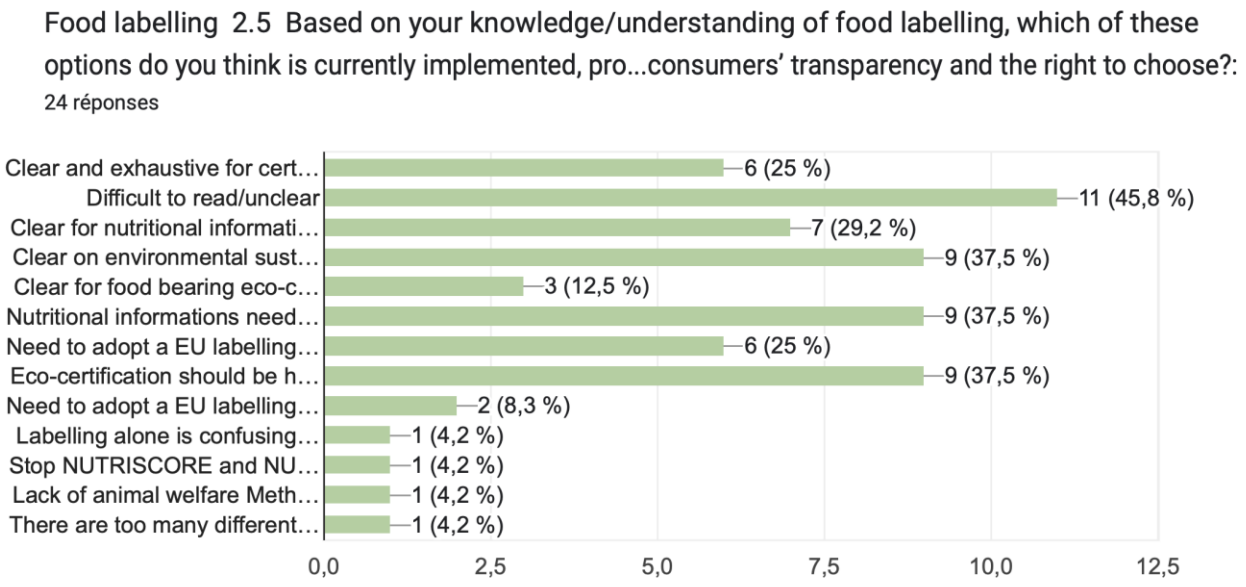
Graph 2.4

Almost 46% voted in favour of the promotion of organic/regenerative/biodynamic animal farming, while around one-third is in favour of extending the same labelling scheme applied to table eggs to all other animal products (33%) and adopting species/products specific labelling scheme (29%).

The promotion of local animal products is considered a valuable solution for 25% of respondents, well below the value assigned to these measures as a tool to tackle other issues, while only some 12% think that voluntary certification schemes might improve animal welfare.

3.5 Evaluation of the value of current food labelling

Some 46% of the respondents think that the current labelling is confusing and difficult to read while over 37% think it's clear for certified products (i.e. organic), and the same percentage thinks that nutritional information and eco-certification needs to be harmonized at the EU level (Graph 2.5).

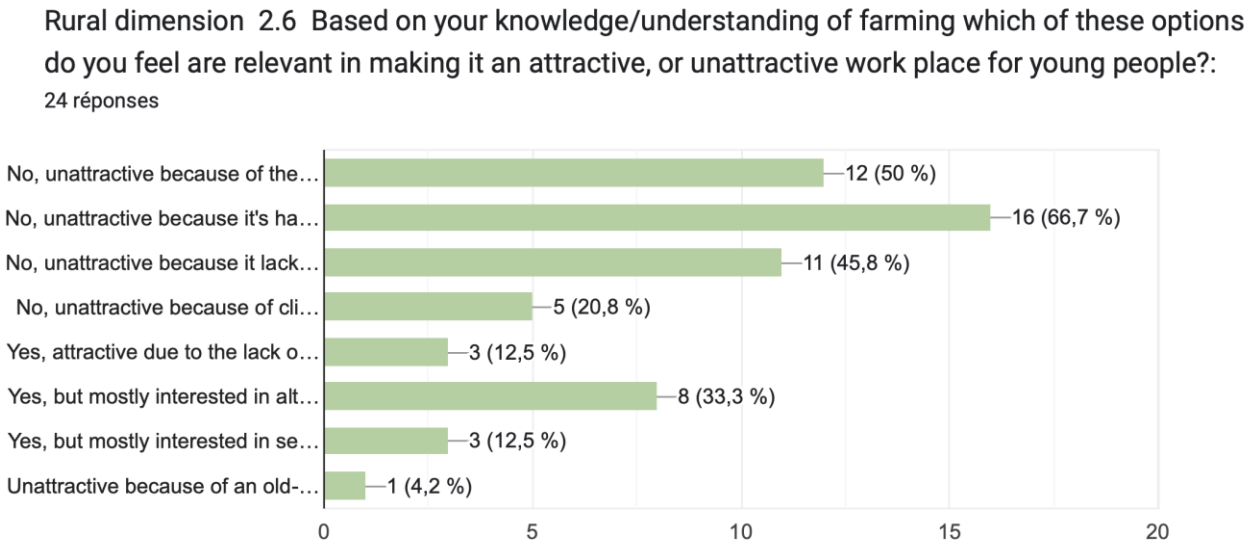


Graph 2.5

On the other hand, some 30% think that nutritional labels are clear to read while 25% think It's clear only for certified products and that there should be an EU labelling system including minimum requirements concerning the three pillars of sustainability while eco score is considered valuable by some 12%.

3.6 Rural dimension potentialities

On the attractiveness of rural life, the largest majority of the answers point out a series of factors that make agriculture and farming unattractive for young led by the unbalance between hard work and low wages (almost 67%), followed by the lack of social public services (i.e. public transport) and structures (I.e. sport and social centres, theatres, internet connection) (50%) and because of lack of proper financial support (46%), while some 21% thinks the increase in the risks associated to climate change is a further obstacle (graph 2.6).

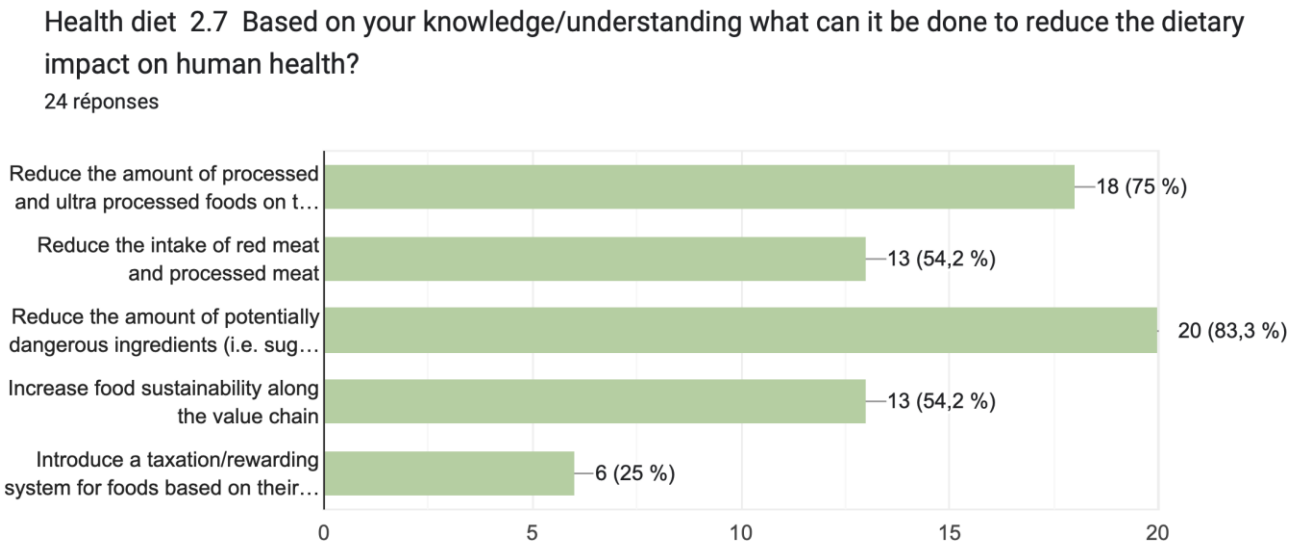


Graph 2.6

Among those who believe that agriculture could be attractive, they indicate d alternative agricultural practices the favored, while some 12% believe that it could be attractive in the frame of the context of unemployment or as seasonal work.

3.7 Healthy diets

The measures that have been indicated as most effective to reduce the negative impact of unhealthy diets on human health are the reduction of unhealthy ingredients (I.e. fatty acids, sugar, salt) in processed food (over 83%), the reduction of processed and ultra-processed food on the market (75%), the increase of the overall food sustainability and reduction of red and processed meat (Graph 2.7).

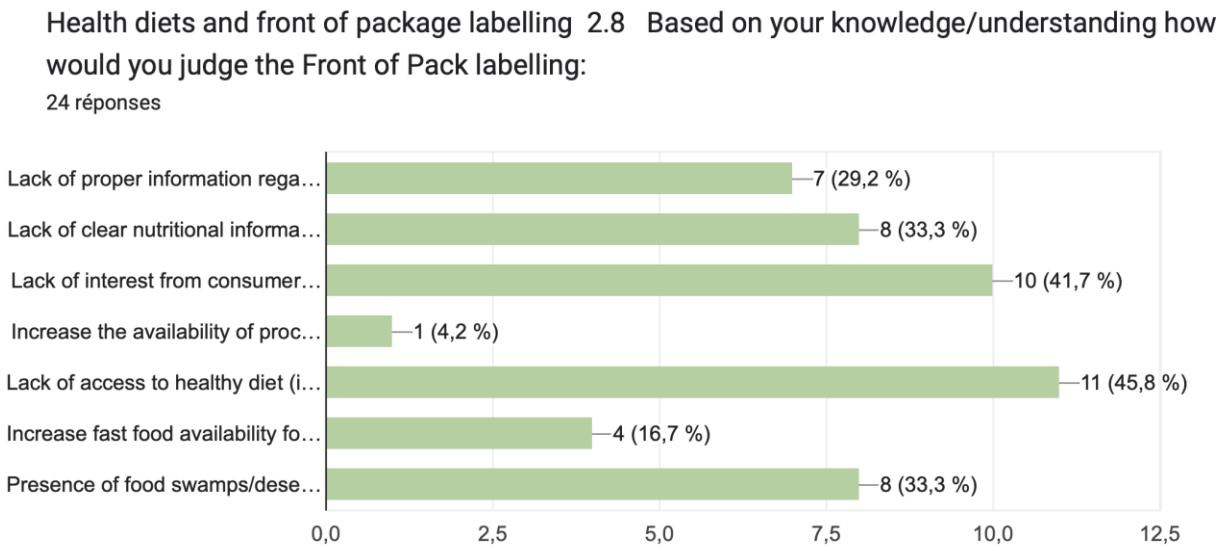


Graph 2.7

Interestingly, 25% support the introduction of a taxation/rewarding system for food based on their nutritious performances.

3.8 Healthy claims and FoP labelling

When analyzing the impact of food on health and the role of FoP labelling, some 46% pointed out out how it is mostly due to food poverty and food swamps and some 42% indicates a lack of interest of consumers in learning how to eat healthier foods (Graph 2.8).



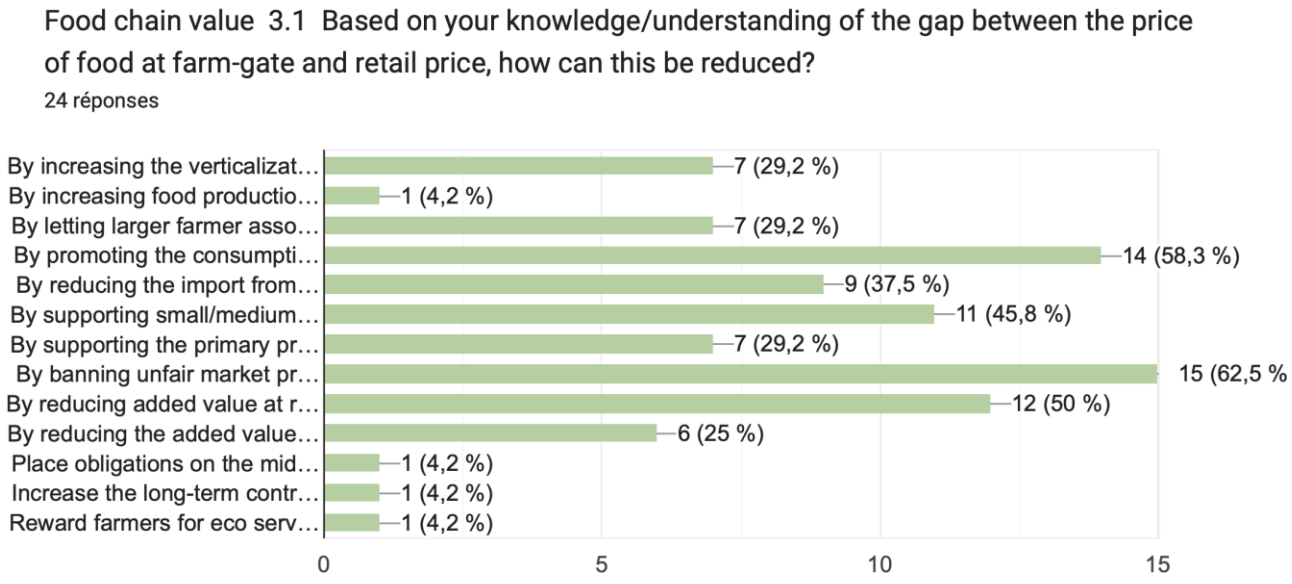
Graph 2.8

Over 33% think that the increase in food swamps and food deserts could support unhealthy diets and that FoP labelling doesn't contain clear nutritional information while some 29% point out the lack of information on the total amount of dangerous ingredients.

4. Economic dimension

4.1 Food price gap between farms gate and retail

On the food price gap from farm gate to shelves, the majority think there is a need to ban unfair trading practices with over 62% support while 58% indicate in the consumption of local products a better distribution of the food value and 50% is in favour of introducing of a maximum gap between the price at farm gate and that at retailing system.

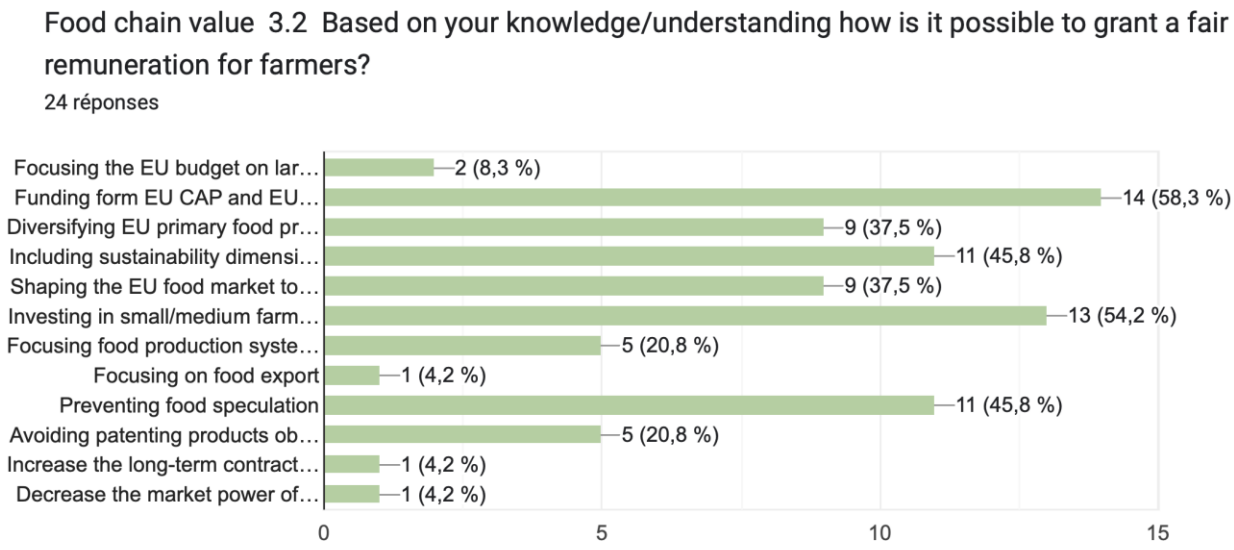


Graph 3.1

Over 37% supported the reduction in food import and the increase of internal food products while some 29% think that a better remuneration for primary producers would be a collective price negotiation and supporting the food products that offer the best share of added value across the chain.
Finally, 25% think that the added value should be contained at the wholesaling, processing, packaging and distribution level.

4.2 Fair remuneration

According to the respondents, the best way to ensure that farmers are paid the right prices for their products is through the reform of CAP and CFP so that they take better into account the sustainability dimension of the funding (58%) and through the support of small/medium farms and local products (54%).



Graph 3.2

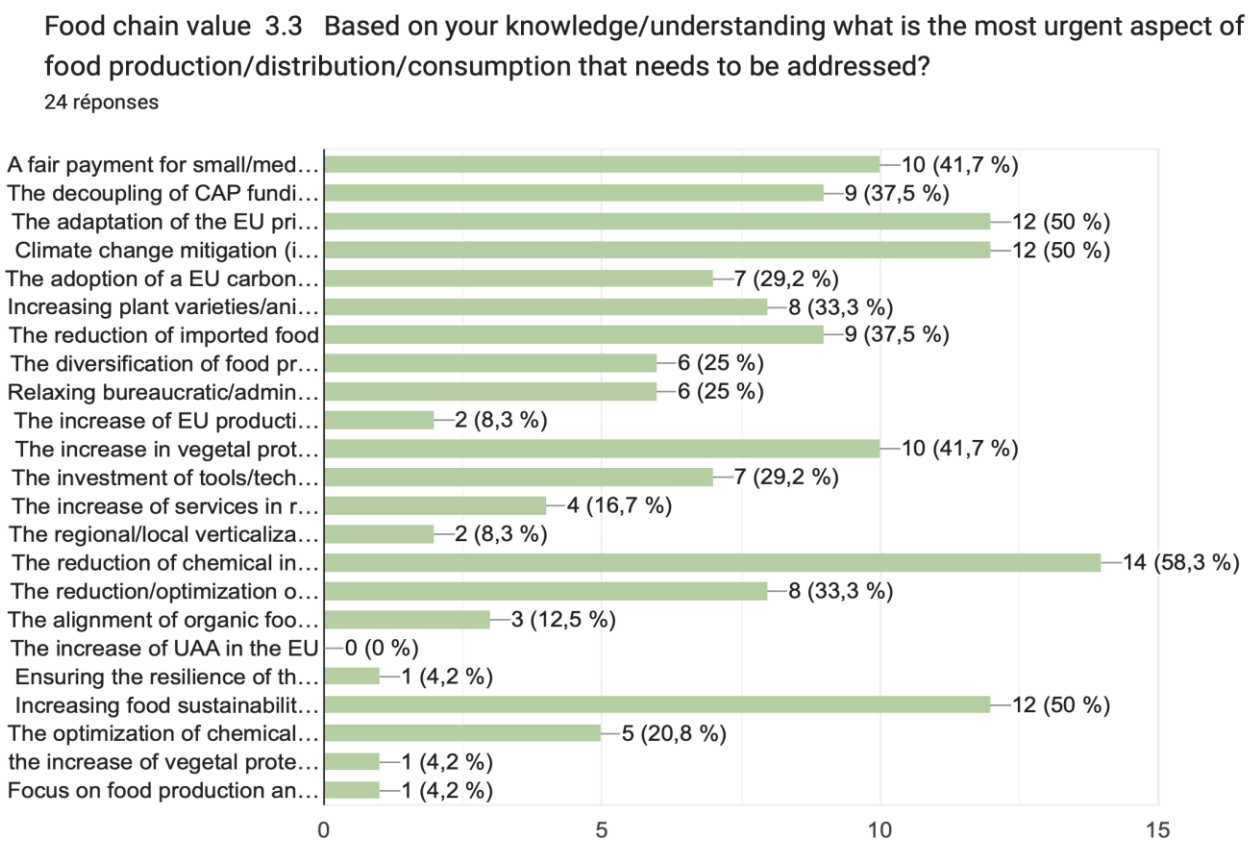
Almost 46% suggested including sustainability criteria in agri-food international/bilateral commercial agreements and fighting price speculation, over 37% suggested diversifying the food production in the EU and to support the internal market and to shape the EU food market to increase international competitiveness.

Some 21% of respondents supported the promotion of an agricultural model that offers a higher price at the farm gate level (I.e. organic farming), and think that new varieties from NGTs shouldn't be patented while only 8% suggest focusing the EU budget on large producers/production.

4.3 Most urgent actions needed along the food chain

The largest part of respondents (over 58%) think that the reduction in the use of fertilizers and biocides is the most urgent aspect to be considered while 50% seem to be particularly worried about the impact climate change is having on food production and suggests

stronger actions to adapt EU food production to climate change, take action to mitigate it and increase the overall food sustainability.



Graph 3.3

Almost 42% of respondents pointed out the need to ensure a fair payment to small and medium farmers and to increase the production and consumption of vegetal proteins while some 42% supported the option to decouple the CAP funding from surface/productivity towards sustainable practices and environmental services and to reduce the food import.

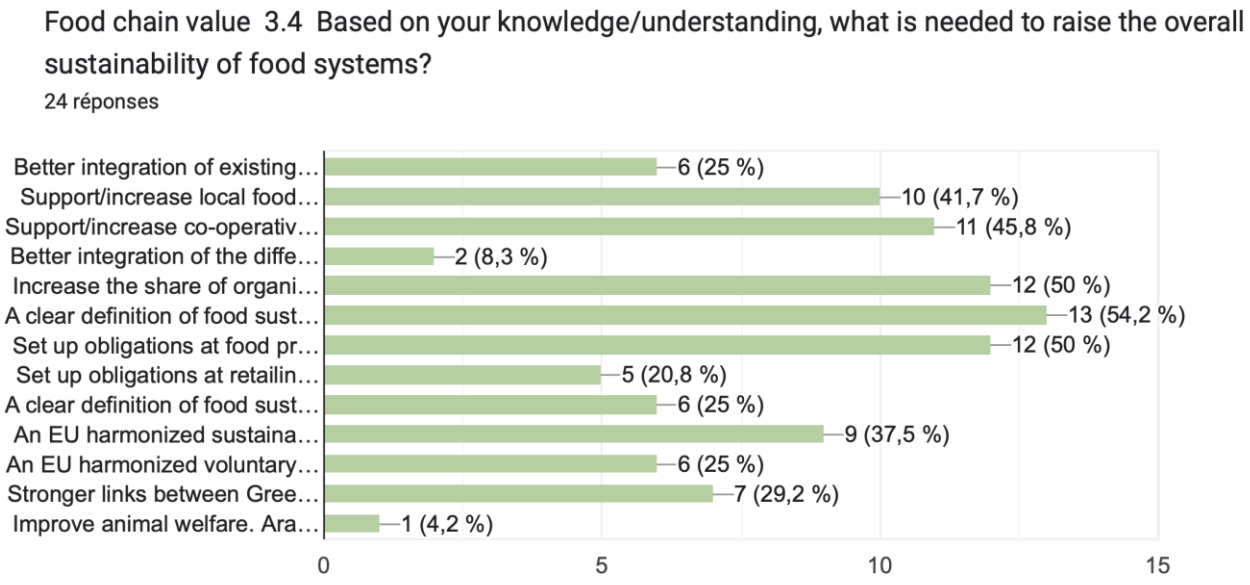
Some 33% think there is a need to increase the number of plant varieties and animal breeds better adapted to the consequences of climate change and to reduce water usage while some 30% support new tools and technologies to raise EU food productivity and to implement carbon farming schemes.

In the view of the 25% of respondents, it's urgent to relax bureaucratic and administrative burdens at the farming level and to increase the diversification of food production at the EU level while almost 21% think there is a need to optimize the use of biocides through IPM schemes and precise agriculture. Almost 17% support the increase of services in rural areas

for them to be more attractive to young farmers while 12% suggest supporting EU organic products by reducing the imports.

4.4 Actions in support of food sustainability

A slight majority (54%) of respondents support a better definition of food sustainability and the setting up of EU-wide minimal mandatory requirements at the primary production level, and 50% supported the setting up obligations at food production/transformation/import side to ensure food products fulfill minimum sustainability requirements and increasing organic/regenerative/agroecology practices.



Graph 3.4

Almost 46% think associative business models like cooperatives can help to increase food sustainability, some 42% support the increase of local food markets and over 37% support the setting up of an EU harmonized sustainability binding labelling scheme.

Some 29% suggest a stronger linkage between Green Public Procurement and food sustainability by ensuring minimum sustainability standards for public canteens while 25% think that sustainability could be improved by a better integration of existing laws, through a clear definition of food sustainability and an EU no-binding minimal requirements as well as through a voluntary sustainability labelling scheme harmonized at EU level.

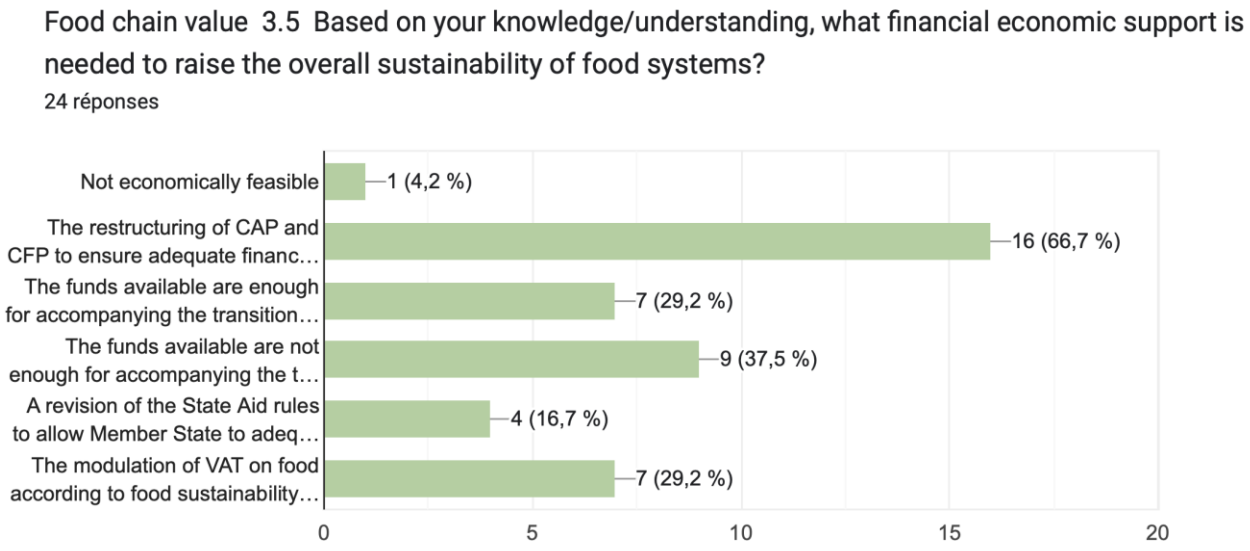
Finally, some 21% are in favour of setting up obligations at the retailing side to ensure the food products marketed in the EU (i.e. including import) do fulfil minimum sustainability requirements.

4.5 Financial support for food sustainability

Changing the current system in favour of more sustainable practices is likely to add extra costs all along the chain value with the possible highest impact on the primary food production level.

When asked which financial support could help the transition toward a sustainable food system, the largest majority of respondents (almost 67%) think that the funds allocated through CAP and CFP should be adapted to favor the most sustainable practices (graph 3.5).

Over 37% though, the funds available were not enough to accompany the transition while some 30% think that it's enough but need to be better allocated and are in favor of re-modulation of VAT so the more sustainable products are less taxed. Some 17% support the idea of a revision of the State Aid rules to allow Member States to adequately support the shift toward food sustainability, while only 4% think that the change is not economically feasible.



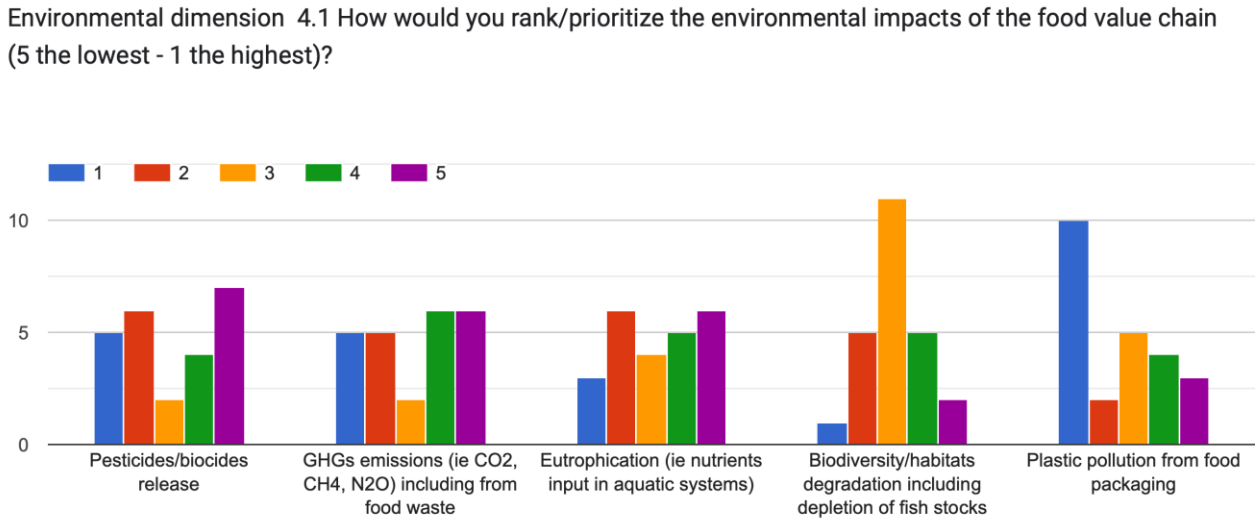
Graph 3.5

5. Prioritization all along the food chain

5.1 Environmental dimension

The following graphs are to be considered highly indicative and can only be taken into account when there is a clear majority for a specific issue. To simplify the reading in consideration of the frequent split among respondents, we'll take into account the sum of the first and the last two positions, unless there is a clear majority expressed.

As shown in the graph below, the issue that received a clear majority of votes is the reduction of plastic pollution for food packaging while habitat degradation and biodiversity depletion have a clear majority, placing it as third most important. For all other aspects, there is a greater split among the respondents with less concern shown for GHG emissions and eutrophication.

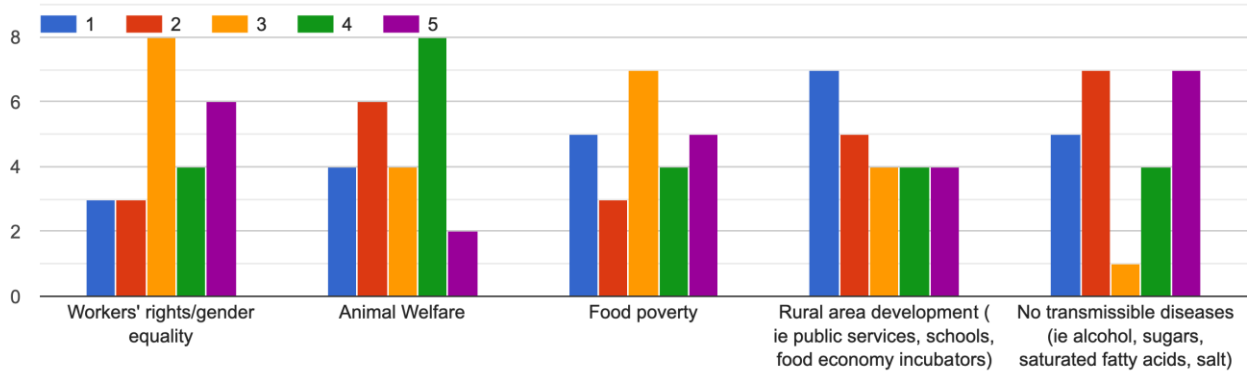


Graph 4.1

5.2 Social dimension

On the social side of food, the top position is for the development of rural areas, while workers's rights and gender equality ranked third and animal welfare fourth.

Social dimension 4.2 How would you rank/prioritize the social impacts of the food value chain? (5 the lowest - 1 the highest)

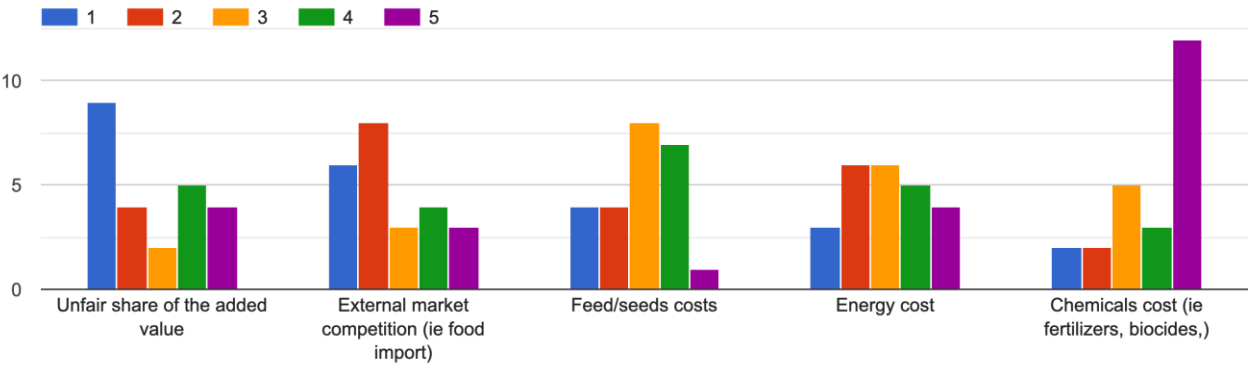


Graph 4.2

5.3 Economic dimension

On the economic weaknesses of the EU food value chain, the majority ranked the unfair share and the external market competition as top priorities.

Economic dimension 4.3 How would you rank/prioritize the economic weaknesses of the EU food value chain? (5 the lowest - 1 the highest)



Graph 4.3

6. Conclusions and next steps

The answers gathered through the questionnaire allow us to have a preliminary picture of what measures and policies can help in increasing food sustainability in its three pillars according to the participants.

These indications should be read in conjunction with the relevant partners of the project to perform a joint evaluation of which could be further investigated in the three case studies of the project.

References

1. Hamed Taherdoost. *Designing a Questionnaire for a Research Paper: A Comprehensive Guide to Design and Develop an Effective Questionnaire.* Asian Journal of Managerial Science, 2022, 11, pp.8 – 16. 10.51983/ajms-2022.11.1.3087hal-03741836).

2. *Towards Sustainable Food Consumption* -Group of Chief Scientific Advisors – Scientific Opinion No.14, June 2023

3. *Approaches to sustainable agriculture – Exploring the pathways towards the future of farming.* IUCN, 2020

4. *Modelling environmental and climate ambition in the agricultural sector with the CAPRI model* – JRC 2021

5. *The State of Food and Agriculture 2023 — Revealing the true cost of food to transform agrifood systems.* FAO. 2023.

6. *A sustainable food system for the European Union.* SAPEA, Science Advice for Policy by European Academies, 2020.

7. *Transition Pathway for Proximity and Social Economy.* European Commission, 2022

8. *Monitoring framework for Farm to Fork Strategy – Indicators proposed for environmental dimension.* Paper submitted to the Advisory Group on Sustainable Food System, 2023

9. *Monitoring framework for Farm to Fork Strategy – Indicators proposed for social dimension.* Paper submitted to the Advisory Group on Sustainable Food System, 2023

10. *Monitoring framework for Farm to Fork Strategy – Indicators proposed for horizontal dimension.* Paper submitted to the Advisory Group on Sustainable Food System, 2023

11. P.R. Shukla, J. Skea, R. Slade, R. van Diemen, E. Haughey, J. Malley, M. Pathak, J. Portugal Pereira (eds.) Technical Summary, 2019. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. https://doi.org/10.1017/9781009157988.002

12. *Transition pathway for the agri-food industrial ecosystem.* European Commission 2024

13. *Achieving SDG 2 without breaching the 1.5 °C threshold: A global roadmap.* FAO, 2023

14. Harwatt, H. Hayek, M.N. Behrens, P. and Ripple, W.J. (2024). *Options for a Paris- compliant livestock sector. Timeframes, targets and trajectories for livestock sector emissions from a survey of climate scientists.* Research report, Brooks McCormick Jr. Animal Law & Policy Program, Harvard Law School. March 2024. Available at: https:// animal.law.harvard.edu/wp-content/uploads/Paris-compliant-livestock-report.pdf

15. *Pricing agricultural emissions and rewarding climate action in the agri-food value chain.* Trinomics for DG Clima European Commission, 2023