SCAR FS SWG Action 3 “Translating Science into Policy” - Survey Report

Aida Turrini, IT and **Noeleen McDonald, IE** | February 2024

SCAR
Standing Committee
on Agricultural Research

Index

SCAR FS SWG Action 3 “Translating Science into Policy” - Survey Report 1
Abbreviations 3
1. Introduction 4
2. Methods 5
3. Translating science into policy: the examples collected in the survey 6
Background details of the R&I examples that translated to policy 6
Background details of the drivers and impacted public policy and services 8
The research and policy relationships of the example 10
Key learnings and what happened next 14
4. Use of the data 17
5. Conclusions 21
6. References 21
Annexes 24
Annex A - Survey: Examples of Science Translated into Policy SCAR Food Systems SWG Action 24
Annex B – List of the science-policy translation examples included in the SCAR FS SWG Action 3 International Survey 36

Abbreviations

EC	European Commission
EU	European Union
FPN	Food Policy Networks
FS	Food Systems
MS	Member States
NGO	Non-Governmental Organization
Qx.y	Question number **y** in the questionnaire section **x**
R&D	Research and Development
R&I	Research and Innovation
SCAR FS SWG	Standing Committee on Agricultural Research Food Systems Strategic Working Group
SCAR	Standing Committee on Agricultural Research
SPIs	Science - Policy - Interfaces
SPSIs	Science - Policy - Society Interfaces
SRIA	Strategic Research and Innovation Agenda
SWG	Strategic Working Group
TST	Thematic Support Team

1. Introduction

Enhancing science–policy interfaces for food systems transformation is a major challenge (Singh et al., 2021) as complex research topics need to be addressed, and the results have to be integrated in a wide puzzle, where parts have to interact with each other to produce effective impacts. All impacts can affect different fields of the society, so policymakers must cope with the governance of the system to ensure a long-term sustainability and to manage possible trade-offs.

Food systems (FS) research covers the entire value chain in its widest form and the interactions among its components: from ecosystems services, primary production (agriculture, aquaculture & fisheries), harvesting, storage, processing, packaging, distribution, retailing, service sector, waste stream management and recycling, food and feed safety, to consumers, nutrition for citizens' health and well-being, and diet related diseases (SCAR, 2016; FAO, 2018; von Braun et al., 2021). The term research, in this case, also covers science-based policy advice.

Adopting a food systems lens (Gill et al., 2018), connecting stakeholders at all scales, and strengthening Science - Policy - Society Interfaces (SPSIs) are the three main indications that the High-Level Expert Group constituted by the European Commission included in the work "Everyone at the table" (European Commission, 2021; 2022). The recommendations included in this report invite *to i) multilateral institutions must strengthen and adapt existing SPIs with additional resources and a broader mandate to engage across sectors and scales; ii) they should cooperate with member states to fund a series of dedicated taskforces to fill knowledge and data gaps; and iii) they should collectively invest in a global coordination hub to build capacity, convene regional assessments as well as forecast and model trends* (European Commission, 2022) .

To this end, it is essential to create a broad and inclusive science-policy-practice interface through strong partnerships between food policy networks (FPNs) and research institutions. R&I policy support and competence development are essential to support FPNs in their ambition to contribute to food system transformation. Impactful FPNs could build a broad and inclusive science-policy-practice interface with the power to guide food system transformation effectively towards a shared vision by generating transformative knowledge, integrated policies, and agency among food system actors. This refers to an FPN´s ability i) to engage with scientists to introduce and expand topical knowledge; ii) organize support for the active integration of transformative transdisciplinary research approaches; iii) generate integrated policies, and iv) engage with civil society actors and business to focus on action (Den Boer et al., 2023).

This will require the representation of different actor roles, such as the roles of process facilitators, intermediary or knowledge broker, change agent, critical analyst, and capacity builder (Fazey et al., 2018; Hilger, Rose & Kell, 2021; Wittmayer & Schapke, 2014). Furthermore, FPN leaders it is important to make FPN leaders familiar with novel methodologies and tools (e.g., Baungaard et al., 2021) used for stakeholder analysis and engagement and for supporting them in the inclusion of stakeholders (Kok, Gjefsen, Regeer, & Broerse, 2021), and for stimulating transformative learning, reflexivity, monitoring, and evaluation (e.g. via reflexive monitoring action), Van Mierlao et al., 2010).

In this context, funded Research and Innovation (R&I) / Research and Development (R&D) projects can provide relevant insights for grounded and informed policy-making, so producing actionable science (Mair et al., 2019). Following that, Action 3 undertaken by the Standing Committee on Agricultural Research Food Systems Strategic working group (SCAR FS SWG) was aimed at analysing successful examples of science-to-policy processes within member states (MS), both nationally or internationally funded – more specifically:

1. Exploring the links between government ministries (departments) and independent research bodies (e.g., research centres and universities) where research outcomes are considered as part of policy formation;

2. Evaluating examples where scientific/research outcomes have influenced policy, focusing on the key contributing and hindering elements in the translation of science into policy;

3. Identifying key resources that would benefit the uptake of research by policymakers, e.g., piloting, demonstration, knowledge transfer, training, funding, and the strategic areas along the system from science to policy;

4. Identifying a set of best practices that can enable the effective translation of science/research outputs into policies.

2. Methods

The activity consisted of a participatory action-research process (Emery 2013; Padilla and Ramos Filho 2012), involving the collaboration of Standing Committee for Agricultural research Food System Strategic Working Group (SCAR FS SWG) Action 3 (A3) leaders with SCAR FS SWG chairs, SCAR FS SWG Thematic Support Team (TST), and other experts and stakeholders.

The first step in this process was represented by a survey where the questionnaire was co-designed by SCAR FS SWG A3 leaders to collect successful examples of national-and/or-EU programmes and funded R&I /R&D projects, that had an impact on public policy and services. Factors identified during the survey included: i) types of research, funding and duration; ii) policy drivers and policy impacts; iii) science to policy relations; iv) key factors that aided translation; v) hindering factors that limited translation. Then, the questionnaire reported in Annex A was articulated in the following sections:

1. General questions
2. Background details of the R&I example that translated to policy
3. Background details of the drivers and impacted public policy and services
4. The research and policy relationships of the example
5. Key learning's and what happened next
6. Any other comments to provide

The intention was for the project findings/outcomes to be effective in raising awareness among policymakers, scientists and stakeholders and subsequently incorporated into the Classic Policy Cycle presented in Figure 1 (Section 1.2).

Building on the survey results, a portfolio analysis was conducted, aiming at identifying typical best practice examples in enabling science/research outputs to be translated into future policy. Specifically, a purposeful sample (Snyder, 2019) of 12 cases was selected and analysed in-depth by SCAR FS SWG A3 leaders, in collaboration with TST. As an outcome, Annex B reports the portfolio analysis adopted criteria and realized projects/programmes project sheets (Annex B).

Both the survey and a selection of cases derived from the portfolio analysis results were presented and discussed in an online workshop held on 20 October 2022. The workshop involved more than one hundred stakeholders, including representatives of the European Commission (EC), the EC High-Level Expert Group, several Joint Programming Initiatives (JPIs), European projects, and European Partnerships, as well as National Ministries, Universities, Research organizations, and Non-Governmental Organizations (NGOs). The main outcome from the workshop were the relevant multi-actor inputs supporting the identification of an effective strategy for implementing the science to policy path. All workshop information and material are available on the SCAR FS SWG official website (SCAR, 2022): https://scar-europe.org/index.php/food-events/eventdetail/157/-/workshop-on-translating-science-into-policy-best-practices-and-challenges .

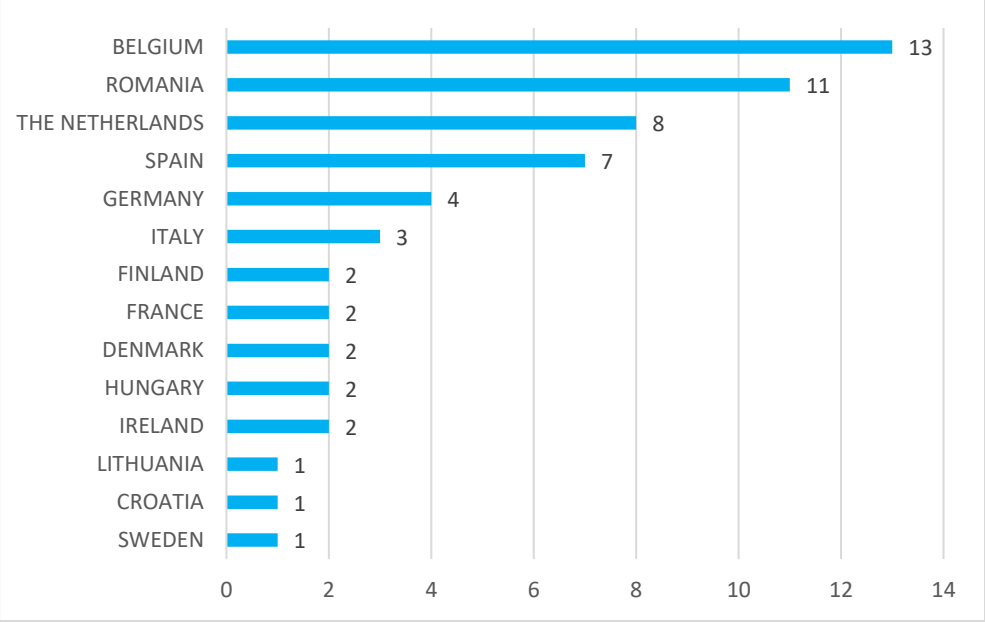
3. Translating science into policy: the examples collected in the survey

The investigated R&I/R&D projects/programmes provided interesting examples of translating science into policy, funded at both national and EU level.

The following figures and tables have been derived from the answers by the respondents and an opportune recoding to synthesize the information and highlight relevant aspects to the science-to-policy path in each case. The text, tables and figures are linked to the related question indicated by Qx.y (Question number y in the questionnaire section x) according to the questionnaire reported in Annex A. The original wordings are recorded in the delivered dataset (see Annex B), while wording was standardized for facilitating the grouping of narratives.

The investigated R&I/R&D projects and programmes provide interesting examples of translating science into policy, at both national and EU level. The collected 59 cases come from 14 countries (Figure 3.1). The data were analysed as given by respondents and opportunely recoded (e.g., a research topic was associated to each case; the duration in years was calculated; five cases reporting in the Q4.1 "3.Policy shapes knowledge" were distributed into 1.Knowledge shapes policy and 3.Co-production according to all the answers provided to the other questions, etc.).

Figure 3.1: Geographical Distribution of the collected cases (Number of projects per country)

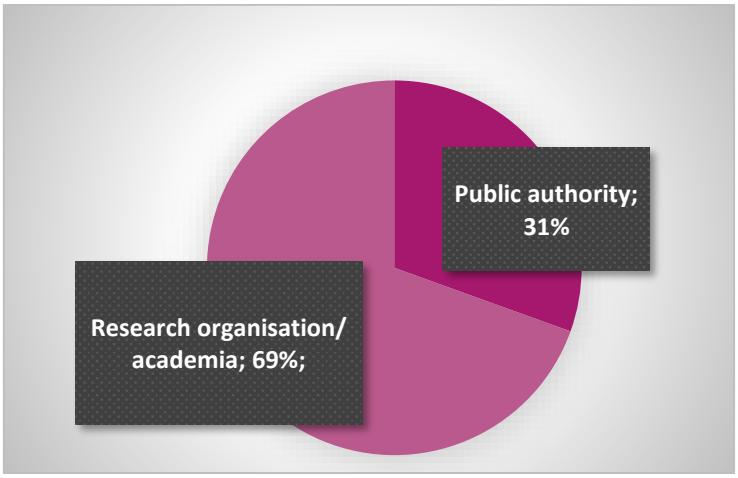


Source: own elaboration Q1.1.

Background details of the R&I examples that translated to policy

The cases concern projects/programmes that are led either by research organizations/academia (69%) or public authorities (31%) (Figure 3.2), and generate an impact at national (68%), and/or international (27%) and /or sub-national (5%) level.

Figure 3.2: Distribution of cases by type of leading organization



Source: own elaboration Q1.2.

Most of the cases are constituted by a single project (42/59). At the same time, nine cases represent programmes, six cases are constituted by a set of projects, and two theses are reported by respondents as well.

The examples cover the different parts of the food system. Specifically, seven cases out of 59 concern all the food system categories (Q2.2: Table 2.1), namely: Belgium (n=2): BE 14.01, BE 14.02; Hungary (n=1): HU 08.02; Spain (n=2): ES 05.06, ES 05.07; The Netherlands (n=2) NL 11.03, NL 11.08.

Table 3.1: Category/part of the food system represented by the collected examples

Category	Cases	Single case	In combination with other categories
Production: Primary production	32	10	22
Processing: Includes food packaging	26	4	22
Distribution: includes logistics, trade, catering	14	1	13
Consumption: Includes consumer and consumer related activities	18	2	16
Food waste	22	4	18
Food safety	30	4	26

Source: own elaboration Q2.2.

The surveyed examples cover a wide range of research topics attributed by the authors to the cases according to the title and the description of the project/programme provided by the compiler (table 3.2). The majority of research topics (Q2.4 recoding) concerned food safety (n=14), followed by food system (n=6) and all the others distributed among “animals”, “circular economy”, “cultivar”, “education”, “environment indicator”, “fish farming”, “food certification”, “food waste”, “front-of-pack”, “genetic modification”, “monitoring”, “nutrition/nutrients”, “organic agriculture”, “organic food processing”, “packaging”, “service”, “toolbox”.

Table 3.2: Research topics covered by collected examples

Research topic	Cases	Research topic	Cases	Research topic	Cases
Animals	2	Food environment	1	Nutrition/Nutrients	5
Circular economy	1	Food safety	12	Organic agriculture	4
Cultivar	3	Food System	6	Organic food processing	1
Education	2	Food Waste	4	Packaging	2
Environment indicator	3	Front-of-pack	4	Regulation	2
Fish farming	2	Genetic modification	1	Service	2
Food certification	1	Monitoring	1	Toolbox	1
				Total	**59**

Source: own elaboration Q2.4 recoding.

The duration of the projects/programmes lasted 4.5 years on average (Table 3.3) with a minimum for single projects (3.8) and a maximum for programmes (7.8). For ongoing project with known starting date, 2022 was considered to assess the duration; answers from 3 cases were missing so the calculation was performed on 56 cases.

Table 3.3: The duration of the research project/programme

		Duration (years)			
Project structure	**N**	**Min**	**Mean**	**Dev.st.**	**Max**
Set of projects	6	2	6.8	4.1	14
Programme	7	1	7.8	5.8	16
Project	41	0.3	3.8	2.8	12
Thesis	2	4	4	0.0	4
Total	**56**	**0.3**	**4.5**	**3.6**	**16**

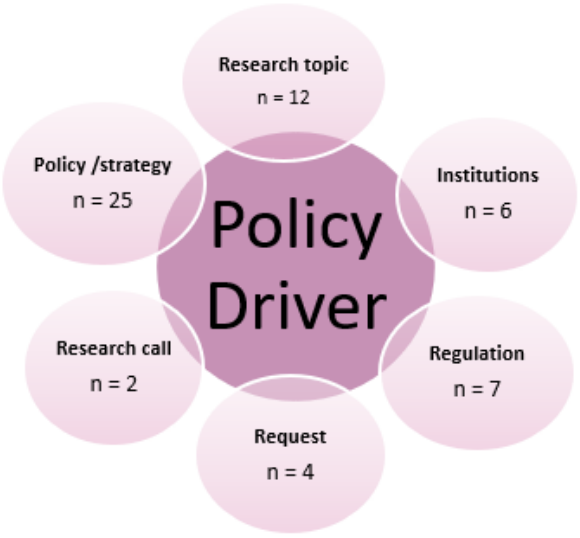
Source: own elaboration Q2.7 recoding.

The cases are for the most publicly funded (97%), the amount of funds, was on average 919,231 € per annually (minimum 20,000 €, maximum 4,478,228 €, standard deviation 1,263,873 €) on 26 cases that reported the amount of financial support >0 (Q2.8).

Background details of the drivers and impacted public policy and services

In particular, most of the collected cases (95%) reported **policy drivers** for the research project (Q3.1-Q3.3: Figure 2.3) and **impacted policies/instruments** (agendas, service, regulation, etc.) (Q3.5: Figure 3.4), as only 3 questionnaires had indicated neither policy drivers nor impacted policies. The type of policy driver and the impacted policies were also recoded and grouped by type as shown in Figure 3.3 and 3.4.

Figure 3.3: Major policy drivers for the research project



Source: own elaboration Q3.1-Q3.3 recoding.

Considering the **impacted policy/instruments** asked for in Q3.5, the answers were grouped as shown in figure 3.3. Among these, the fields that were impacted by projects' results were **policy/strategy** (32%), followed by **recommendations** (23%) and **regulation** (21%). This means that projects results were manly utilized for drafting political agendas, formulating recommendations and designing/modifying regulatory documents.

Figure 3.4: Areas of public policy and/or service that were impacted by the scientific research

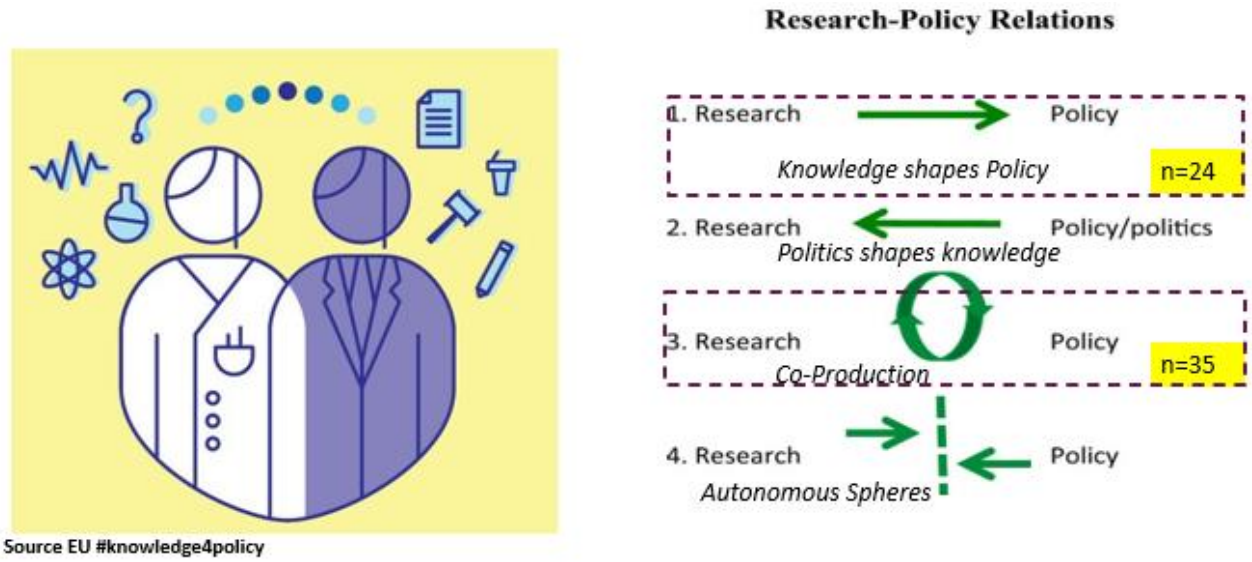
Source: own elaboration Q3.5 recoding.

Most cases (Q3.7) represent projects/programmes that are **demand led** (90%) rather than supply-led (10%). Moreover, they represent examples (Q3.6) in which **research informs/contributes to new policy/schemes** (86%) vs. the revision of existing ones (14%).

The research and policy relationships of the example

The most common type of research-policy relation in our sample was **co-production** (Figure 3.5).

Figure 3.5: Number of cases by type of research-policy relation

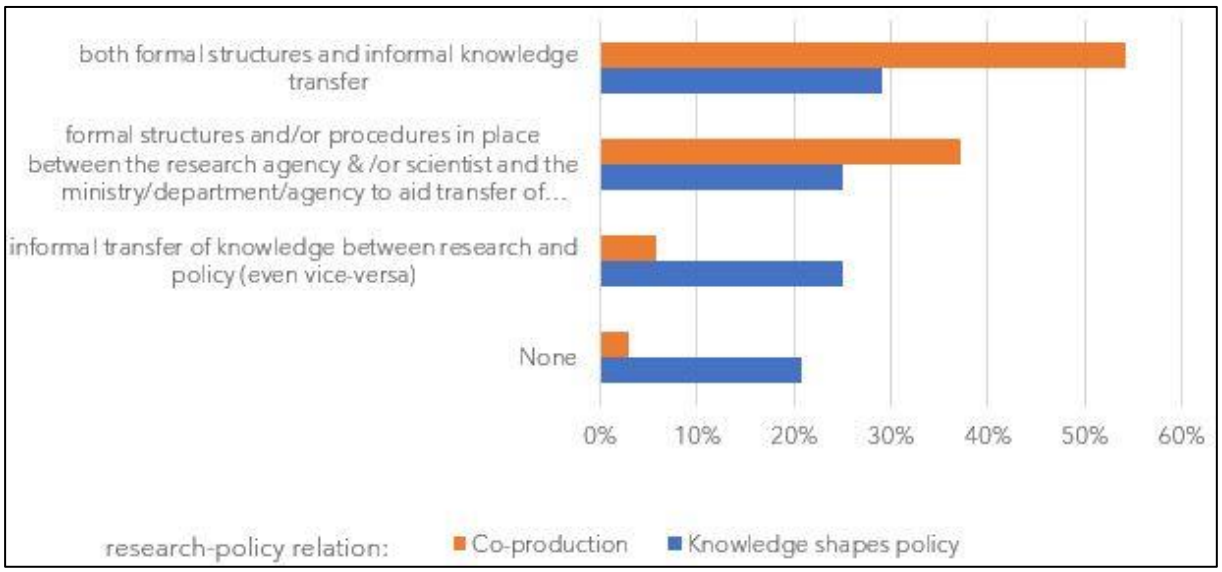


Source: Own elaboration Q4.1 on ref. Boswell and Smith (2017).

Overall, the "knowledge shapes policy" research-policy relation occurred in the Q4.1, the percentage of projects or programmes carried out in the **co-production** research-policy relation context (Q4.1) was 59% and of these, 60% of their projects objective/idea were **co-creation** by researchers and policymakers (Q4.5). The co-creation by researchers and policymakers was much less frequent in the "knowledge shapes policy" relation (17%).

A **formal** (Q4.2) **and/or informal framework** (Q4.3) was in place between the research agency and/or scientist and the ministry/department/agency to aid transfer of knowledge. Figure 3.6 shows that in the "co-production" research-policy relation, formal structures to aid transfer of knowledge were in place together with informal transfer (54%) or not (37%) for a total of 91%; then only 9% of cases did not report any structure or transfer. Conversely, in cases in the "knowledge shapes policy" relation, the formal structures accounted for 29%, together with informal transfer, and 25% alone, for a total of 54%; informal transfer accounted for 54% (29%+25%) as well; around the 20% did not indicate any kind of structure/transfer.

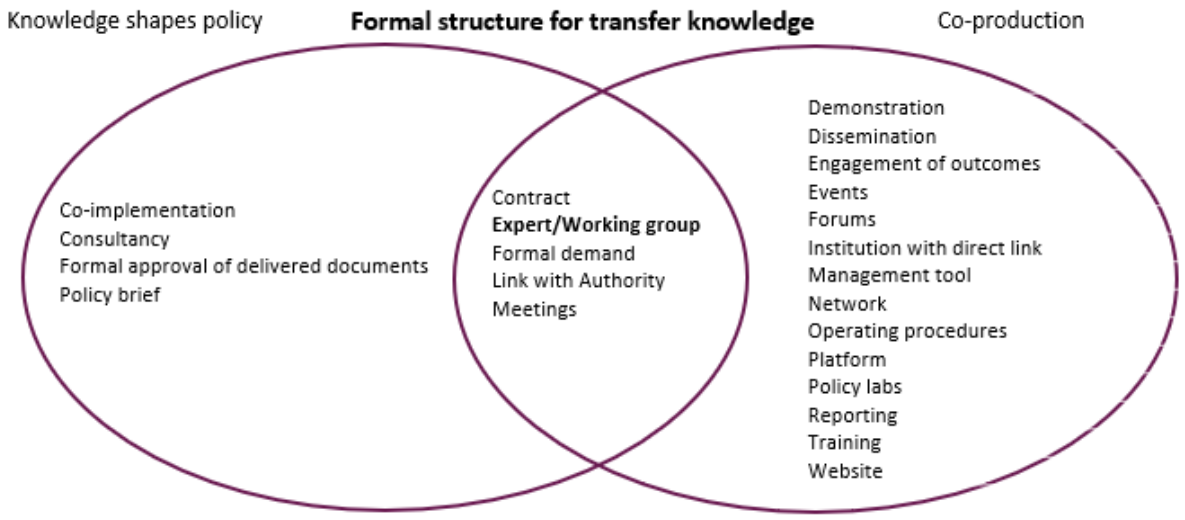
Figure 3.6: Occurrence of formal/informal structures to aid knowledge transfer by type of research-policy relation



Source: Own elaboration Q4.2, Q4.3,

Looking at the narratives reported in Q4.2 and Q4.3, opportunely standardized in the wording, we have found formalized structures in place to aid knowledge science-to-policy transfer (Figure 3.7), and that these can be fruitfully integrated with informal relationships, like contacts, consultations, etc. (Figure 3.8). More formal structures were in place for cases indicating "co-production" than "knowledge shapes policy" research-policy relation. A certain number of items was cited by both (intersection in the figure), mostly reported established "expert/working group".

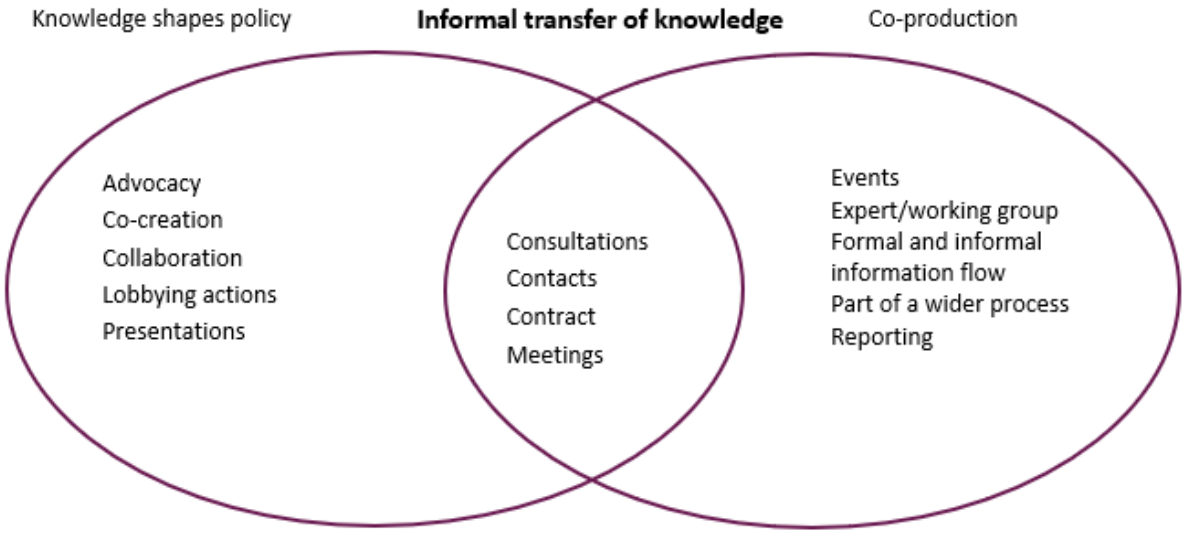
Figure 3.7: Formal structures in place aiding the transfer of knowledge between research and policy



Source: own elaboration Q4.2.

Considering answers to Q4.3 the respondents indicated if informal transfer of knowledge between research and policy was in place for the project/programme they are referring to, Figure 3.8 shows that consultations, contacts, contracts, and meetings were indicated in cases both in "knowledge shapes policy" and "co-production" research-policy relations. Consultations, contacts, contracts, meetings occurred whatever was the research-policy relation, while in the knowledge shapes policy context – advocacy, co-creation, collaboration, lobbying actions, and presentations were the occasions during which the knowledge was transferred. In the co-production context, the occasions to transfer were planning, organizing events, constituting working groups, managing an information flow, and making part of a wider process (which the project was part of) (Figure 3.8).

Figure 3.8: Informal transfer of knowledge between research and policy (even vice-versa)



Source: own elaboration Q4.3.

Some structures can be seen either as informal or formal based on how they are identified (e.g., contracts, meetings, events, etc.). Moreover, "expert/working group" mostly cited as formal structure (Figure 3.7) were also reported as informal procedures (Figure 3.8). Maybe, this can depend on the **way the structure/procedure were established and managed** by researchers and policymakers. In most of the cases (Q4.4: 71%) cooperation activities started before the beginning of the project.

The survey compilers were also asked for estimating the **timeline** in achieving the goal of **completing the science-to-policy path** in terms of number of years for 52 out of 59 cases because of 7 missing answers (Q4.7) (Table 3.4). When co-production context occurs, and/or co-creation is adopted to design the project, the timeline of the whole science-to-policy process is longer, especially if a knowledge broker is engaged (6.4 years on average).

Table 3.4: Approximate timeline of when research was carried out, was translated and informed public policy - number of years

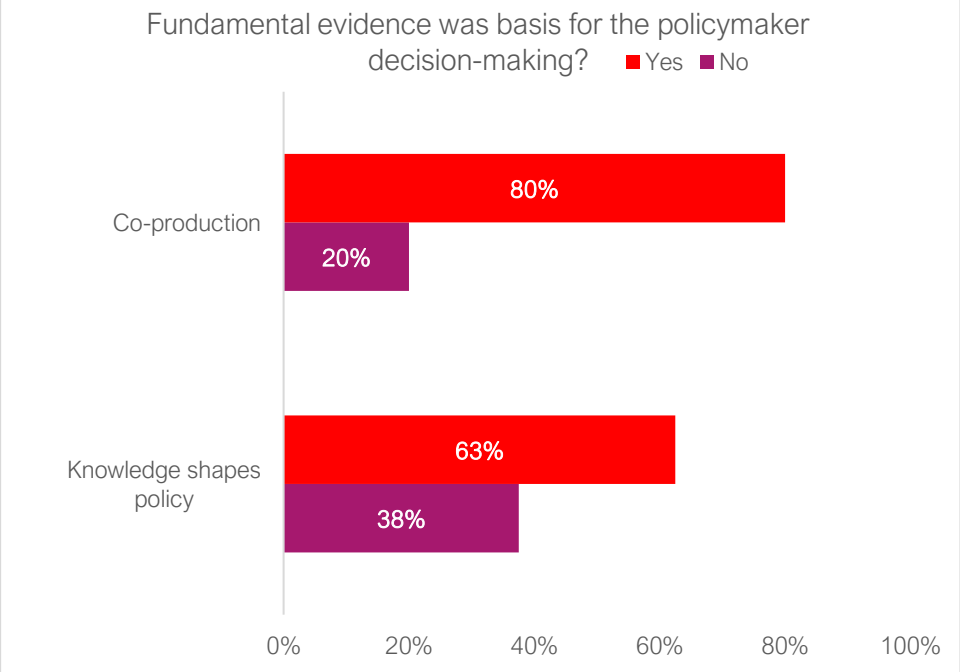
Type of project	Number of cases	Number of years to complete the science-to-policy path			
		Minimum	Mean	Standard Deviation	Maximum
Set of projects	5	3	8.0	3.7	14
Programme	6	1	6.0	4.2	13
Project	39	1	4.4	3.1	12
Thesis	2	4	4.0	0.0	4
Total*	**52**	**1**	**4.9**	**3.5**	**14**

Source: own elaboration Q4.7.

The timeline of the science -to-policy is, instead **much shorter**, especially when the project/programme design was **co-created** by researcher and policymakers (Q4.5) in the situation of the **co-production** research-policy relation, and **the collaboration did not start before the beginning of the project/programme** (2 years on average to complete the science-to-policy path).

In many cases, projects/programme results were used as part of policy-makers' decision-making (Q4.6 – Figure 3.9). In the co-production research-policy relation, the percentage of the inclusion of the results in the decision-making was higher than in the "knowledge shapes policy" -context (80% vs. 63%).

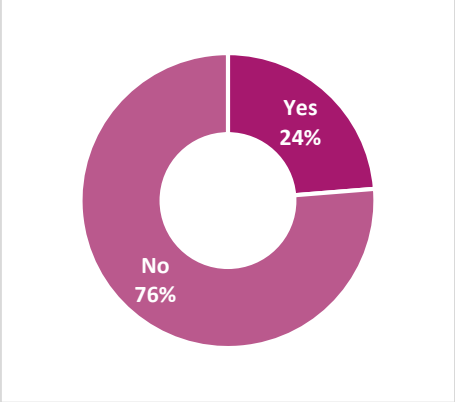
Figure 3.9: Fundamental evidence as basis for which the policymaker decision-making



Source: own elaboration Q4.6.

Knowledge brokers (Q4.8) were only involved in 24% of the cases (n=7) (Figure 3.10). Almost half of them were universities and/or research institutes, followed by community groups (n=4).

Figure 3.10: Was there a knowledge broker involved in assisting the transfer of knowledge?



Source: own elaboration Q4.8.

Key learnings and what happened next

The description of cases considers both **key contributing** (Q5.1) **and hindering factors** (Q5.2) affecting a successful translation of knowledge into practice.

The insights are expected to help in designing information flows between researchers and policymakers taking into account the specific context (in the present work the research policy relations “knowledge shapes policy” and “co-production”).

The respondents were requested to illustrate successful cases in transferring scientific results to policy, so were reported many more narratives for key contributing factors than hindering factors, but some obstacles occurred.

Factors extracted from survey participants' narratives are summarized in **Table 3.5**. The type of key contributing factors - that is, resources to facilitate the uptake of scientific results into policy, reported by the responders can be grouped into three sets: i) resources referring to a **structural level**; ii) resources concerning the personal level; iii) resources provided by **information systems** (platform, software tools, databases, etc.) afferent to the **knowledge area**; iv) other resources are available or acquirable through **funding**.

At the structural level, the first key contributing factor is creating communities resulting from aggregating and networking food system actors with researchers and policymakers where dialogue and co-creation are facilitated. In this context, issues that research projects /programmes can investigate to produce actionable science can be more easily identified, e.g., through living labs. Such communities need good organization, the capacity to maintain “relevance, pertinence, quality assurance, and scientific rigour” of research projects/programmes and stability to reproduce successful science-to-policy pathways within different contexts defined by the “political environment” (agri-food/rural policy, governmental goal, national directives, etc.) over time. In this context, participants competencies and abilities can be enhanced as their knowledge and experiences, their contacts, the motivation for co-creation greatly help in conducting activities in the communities. This include accessing and using the use of available information and tools (platforms, software, etc.). All the aspects above mentioned require supporting and/or funding.

Table 3.5: Key contributing factors to successful science-to-policy path grouped by category (structural level, personal level, knowledge area, resources/funding) and the type of research-policy relation

Structural level
Aggregating and networking different stakeholders/policymakers/researchers
Co-creation
Communication
Creating communities, involvement of public authorities/policy, institutional contacts
Identifying specific issues to work on (targeted measures, scaling up local experiences, small project well-focused)
Innovative space like living lab
Organization of the research team
Political environment (agri-food/rural policy; governmental goal; national directives, etc.)
Practice to science and finally to policy process
Relevance, pertinence, quality assurance, and scientific rigour of the project/programme
Stability/persistence of the research group
Personal level
Active participation
Competencies
Contacts
Dialogue
Knowledge and expertise of researchers and stakeholders/policymakers, including citizens
Motivation for co-creation
Networking skills
Knowledge area
Assessment of impacts
Good results (successful project)
Knowledge gaps to research on
Monitoring impacts
National nutrient/dietary database
Review of scientific knowledge
Resources/Funding
Funding instrument
Supporting development of regional sector
Supporting the participation of experts

Source: Own elaboration Q5.1.

The collected examples of successful science-to-policy path also encountered obstacles that are important to cope with. Hindering factors that were reported are summarized in **Table 3.6**.

"Bringing together the interests and perspectives of science, industry/industry association, policy makers, and consumer advocates" is a **challenge** in the complexity of the context so the systems could not be sufficiently adequate; "**lack of resources** always represent a limitation that can make the process fragmented when

moving from practice to policy"; whereas **uncertainties** deriving from changes at various levels during the implementation of projects/programmes and the transfer of knowledge to policy, but also disparities and differences between local and national/international situations, can hinder the science-to-policy process as "differences of context at local level create always an obstacle to move from practice to policy through research".

Table 3.6: Factors hindering the success of science-to-policy path grouped by category (challenges, lack of resources, uncertainty) and the type of research-policy relation

Challenges
Bureaucracy
Complex regulatory context
Different interests and perspectives
Practise esily evaluable by policymakers
System not adequately structured
The cultural beliefs
Lack of resources
Expertise/capacity
Funds
Interest
Knowledge
Suitable finance and business models
Time/short term perspective
Trust
Uncertainty
Changes in personnel
Changes in the political/managerial structure (interlocutors, priorities)
Differences of context at local level
Disparities among EU countries

Source: Own elaboration Q5.2.

Lastly, narratives reported in **Table 3.7** are based on the free comments that respondents were asked to leave at the end of the questionnaire (Q6). These comments have highlighted aspects for the compilers to take into account: Willingness to continue; European collaborations; Policy that is nested into research; Scaling-up an innovation from practice to policy; Capacity to rely on the right expertise to develop targeted research with a small amount of money; Innovation brokers, are elements to consider in implementing projects/programme aimed at transferring knowledge with the goal of fostering a long-term relationship between researcher stakeholders and policymakers (see, e.g., ES 05-06 Q4.4).

Table 3.7: Relevant Narratives based on respondents' free comments to the questionnaire

This is an example of how research can show policy efficacy and fine-tune policy. Currently there is a *plan to continue this funding instrument* for 2021-2023 with wider application as proposed in the study (source: FI 01.02)
The acknowledgement of the team led to several *European collaborations* (source: FR 07.01)
…Policy is at the beginning and at the end of the process. Local Administrations are the one involved in developing the practices, the Innovation Broker … put together existing experiences into a network and promoted the concept rather than the individual experience. This raised the interest of research and a specific methodology was developed in research projects….

	Finally, the policy process started from the regional level, with regional laws recognizing … and finally in 2017 a National Law (205/2017) allowed to have specific economic resources dedicated …. This process is a good example of scaling up an innovation from practice to policy through research (source: IT 03.01)
	The example … shows how with a small amount of money, if the right experts are identified, it is possible to develop targeted research in order to support a policy process. Another key aspect is to consider the possibility to include, as dissemination activity of research projects, the support to participate in expert groups created at EU level (source: IT 03.02)
	This example is including several projects, as they all are related to European regulation on Innovation and Organic Farming as an example, more than on national policies. However, Italian innovation brokers often played a key role on such projects and in the following years supported also the Italian Government in participating in the EU debate and be ready when such regulation need to be adopted at national level (source: IT 03.03)

Source: Respondents' comments to Q6.

4. Use of the data

A portfolio analysis was conducted for the identification of relevant national-and/or-EU programmes and funded projects working as good practices examples in enabling the translation of science/research output for future policy.

Specifically, a purposeful sample of 12 cases was selected and analysed in-depth, based on a participatory approach, involving SCAR FS SWG chairs, Action 3 leaders, Thematic Support team members and other experts.

The cases were selected according to a two-step process based on a set of co-identified criteria (Figure 4.1).

As shown in Figure 4.1, a first selection was made according to the following inclusion criteria:

1) All food chain sectors (i.e., production, processing, distribution, consumption, food waste, food safety)

2) Farm to Fork (production, processing, distribution, consumption)

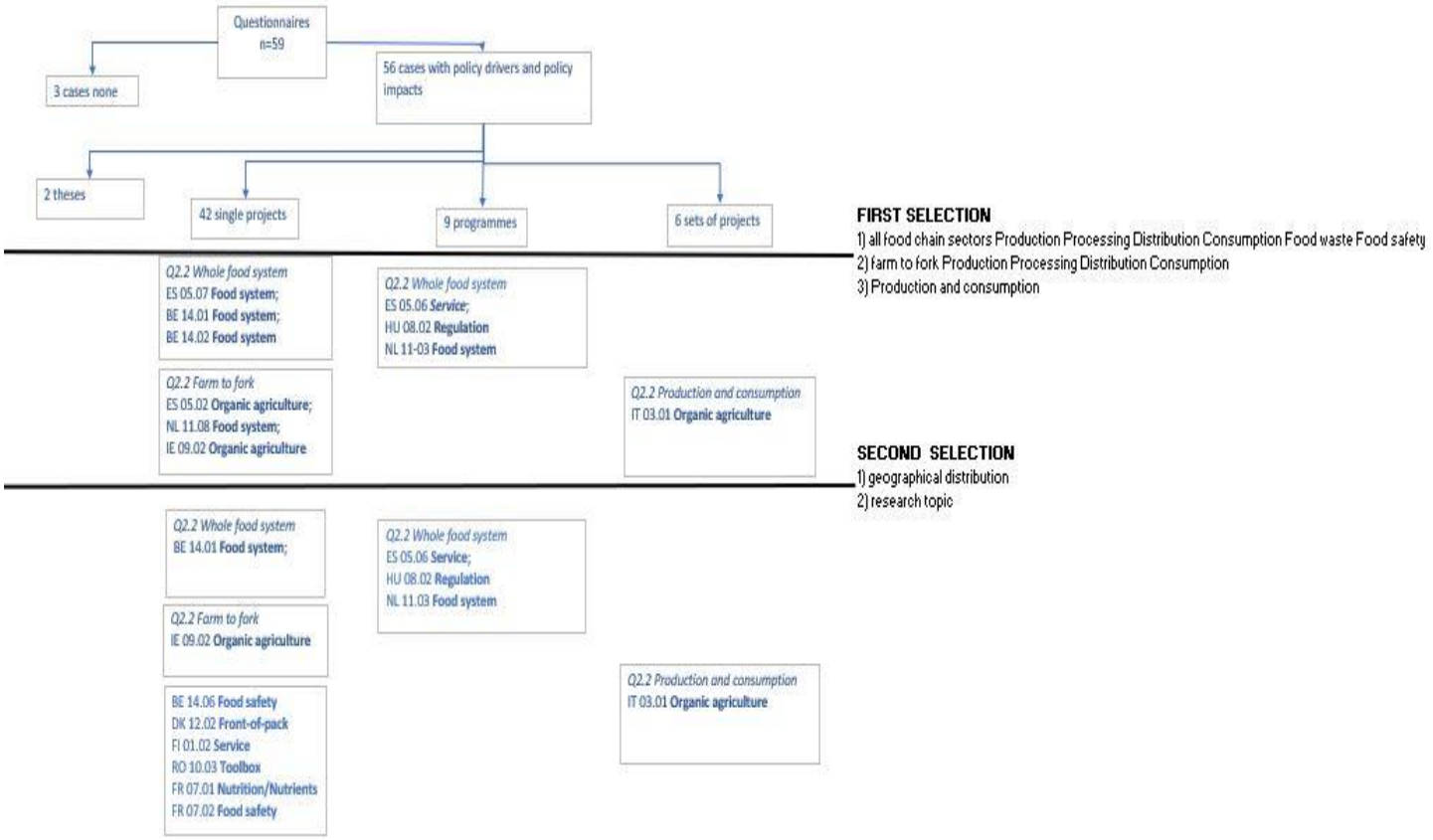
3) Production and consumption

Secondly, a further selection was carried out based on the following criteria:

1) Geographical distribution

2) Research topic

Figure 4.1: Process of portfolio selection



Source: own elaboration.

As an outcome of this process, Table 4.1 reports the twelve selected cases.

Table 4.1: Good practices examples of translating science into policy at both national and EU level

	Title of project/s included in the example	Country	Source of funding	Questionnaire Code
1	Evaluation of the implementation and impact of the Village Shops as Service Hubs pilot project - Village shop support in 2019 – 2021	Finland	Ministry of Agriculture and Forestry	FI 01.02*
2	Multi-project case – Project 1. BIODISTRICT Valorizzazione delle produzioni da agricoltura biologica: progetto pilota per lo sviluppo di distretti biologici ed ecocompatibili; Project 2. DIMECOBIO Progetto per la definizione delle dimensioni economiche del settore dell'agricoltura biologica ai diversi livelli della filiera; Project 3. BIOREG - Individuazione e sviluppo dei distretti biologici: casi applicativi della metodologia BIODISTRICT alla realtà italiana	Italy	Ministry of Agriculture, Food Sovereignty, and Forestry (MASAF) (former MiPAAF)	IT 03.01*
3	Andalusian Agrifood Campus of International Excellence as a successful example of dynamization of quadruple helix in Andalusian agrifood sector – ceiA3	Spain	European funds and regional funds	ES 05.06*
4	BioNutriNet	France	Agence Nationale de la recherche (ANR)	FR 07.01*
5	Risk associated with ingestion of food additive Titanium dioxide (E171)	France	French Agency for Food, Environmental and Occupational Health and Safety (ANSES)	FR 07.02*
6	Common Agricultural Policy (CAP) strategic planning in Hungary	Hungary	Ministry of Agriculture (MoA)	HU 08.02
7	An Evaluation of Development Opportunities, Policies, and Initiatives Shaping Ireland's Transformation to a Sustainable Low Carbon Bioeconomy – BIO-ÉIRE A Bio Economy for Ireland	Ireland	Department of Agriculture, Food and the Marine (DAFM)	IE 09.02*
8	Research Development and Innovation (RDI) project to develop a low-cost toolbox to correlate parameters of controlled atmosphere storage conditions of fresh fruits and vegetables and their quality parameters for human consumption (sensorial analysis, bio-physical-chemical properties, etc.)	Romania	Ministry of Education and Research – UEFISCDI	RO 10.03*
9	Towards a long-term Africa-EU partnership to raise sustainable food and nutrition security in Africa – PROIntensAfrica	Netherlands	European Commission (H2020)	NL 11.03*
10	Consumer practice, perceived risk, and self-efficacy - Date labels 2021	Denmark	Ministry of Food, Agriculture and Fisheries (FVM) and Aarhus University (AU)	DK 12.02*
11	FIT4FOOD policy lab	Belgium	European Commission (H2020)	BE 14.01*
12	Identification and risk characterization of moulds in fruit and sweetened foods – FUNGIFOOD	Belgium	N/A	BE 14.06*

**The survey code is the code received by the project once scheduled in the survey database. Projects codes are sometimes used instead of projects titles or acronyms within following project fiches.*

N/A= not available

Then the 12 cases where overlaps and gaps were identified (SCAR_FS_MS Survey Science to Policy_Final) and examined to extract a small sample for the discussion in the workshop (SCAR, 2022).

Successful cases reported by fourteen European Countries provided helpful insights and the experts that attended the workshop confirmed the elements found as interesting factors highlighted in the survey. Participants in the workshop also elicited aspects in a more general view as for example the necessity to adopt the principle of transparency.

Workshop outcomes (D.1.6 SCAR FS SWG A3 Workshop minutes; D.1.8 SCAR FS SWG Workshop A3 PowerPoint (summary of the main inputs)) combined with the results from the survey can be summarized as following.

The **success factors** that lead to evidence-based decision and policymaking are:

- **Policy-driven** and **demand led** cases
- **Co-production** relationship between research and policy, co-creating project design and expected impacts
- **Public-funded** research
- **Involvement of multiple stakeholders** (researchers, policymakers, practitioners & consumers organization) in **co-designing and co-producing** the formulation of national research programmes

  Use of **platforms** and **tools** to elaborate the results to produce actionable science

The **needs and gaps** to reach an adequate science to policy interface are:

- Work on the relationship between the value of **consumption** and the value of **production**
- Deeper **understanding** from the science/research side of how the policy word ticks
- Need to consider **market actors** in the translation of science
- Need to consider civil servants working for the operationalisation of policy packages
- Evaluating the scale international, national, sub-national level
- A **platform** that 'forces' food system stakeholders to work together
- **Metrics** for universities/institutes involvement in the policy process & impact
- Maintaining **scientific independence** for researchers
- Consideration of the **longer time** research needs to address questions

The **actions** needed to reach an adequate science to policy interface are:

- The use of **knowledge brokers** who understand the realms of policy and research
- The development of a **programme** to help bridge both sides together
- **Flexible landscapes** of more formalized and **ad hoc interfaces**
- **Incentives** to facilitate the application of policy decisions and actions
- Researchers and policy makers should **engage society** in the dialogue
- **Living labs** at country level are an opportunity to experiment the science policy interface process
- Aggregating and networking researchers, policymakers and food system stakeholders is a fundamental action to allow for dialoguing between all the actors, creating SPSIs
- Identifying issues the communities can to work on for the food system transformation considering different scenarios
- The **Food System Partnership** should play an important role in the SPI where policy makers and stakeholders acting as **funders** should not only play the role of distributors of funds, but being co-planners of research programmes, building together actionable science for policy

5. Conclusions

The collected cases that were successful in the policy-to-science cases have provided helpful insights that can help to tailor adequate infrastructures that better support the activities aimed at transforming the food system in all the environmental, health, economic, and societal dimensions without neglecting the contribution by different cultures.

The reflections on the presented projects/programmes also led to further aspects to consider. Then, an expanded survey including more countries and maybe involving the existing SPIs would likely help think of a generalized model scaled up from the local to the global as recommended.

6. References

Baungaard, C., Kok, K.P.W., den Boer, A.C.L., Brierley, C., van der Meij, M., Gjefsen, M.D.Broerse, J.E.W. …, 2021. FIT4FOOD2030: Future-proffing Europe´s food systems with tools for transformation and a sustainable food systems network. Nutrition Bulletin, 46, 172–184. https://doi.org/10.1111/nbu.12502

Boswell, C., Smith, K. Rethinking policy 'impact': four models of research-policy relations. Palgrave Commun 3, 44 (2017). https://doi.org/10.1057/s41599-017-0042-z

von Braun J, Afsana K, Fresco L, Hassan M, Torero M. Food Systems – Definition, Concept and Application for the UN Food Systems Summit. UN – United Nations Food Systems Summit 2021 Scientific Group. 2021. Leadership | United Nations.
https://knowledge4policy.ec.europa.eu/sites/default/files/food_systems_concept_paper_scientific_group_-_draft_oct_261.pdf

Collins English Dictionary, Definition of Policy. Available online
https://www.collinsdictionary.com/dictionary/english/policy

Cummings S, Kiwanuka S, Gillman H, Regeer B. The future of knowledge brokering: perspectives from a generational framework of knowledge management for international development. Information Development. 2019;35(5):781-794. doi:10.1177/0266666918800174

Cvitanovic, C. Three ways that knowledge brokers can strengthen the impact of scientific research. Research to Action: The Global Guide to Research Impact, April 2017. Available onlinehttps://www.researchtoaction.org/2017/04/three-ways-knowledge-brokers-can-strengthen-impact-scientific-research/ de Boer, A.C.L., Van der Valk, A. J.J., Regeer, B.J., Broerse, J.E.W., Food policy networks and their potential to stimulate systemic intermediation for food system transformation. Cities 135 (2023) 104239

Emery, M.; Gutierrez-Montes, I.; Fernandez-Baca, E. Sustainable Rural Development: Sustainable Livelihoods and the Community Capitals Framework, 1st ed.; Routledge: Abingdon, UK, 2013.

European Commission, Directorate-General for Research and Innovation, Webb, P., Sonnino, R., Everyone at the table: co-creating knowledge for food systems transformation, Webb, P. (editor), Sonnino, R. (editor), Publications Office of the European Union, 2021, https://data.europa.eu/doi/10.2760/21968

European Commission, Directorate-General for Research and Innovation, Webb, P., Sonnino, R., Fraser, E. et al., Everyone at the table – Transforming food systems by connecting science, policy and society, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2777/440690

European Environment Agency (EAA) (2022) Transforming Europe's food system — Assessing the EU policy mix. https://www.eea.europa.eu/publications/transforming-europes-food-system

FAO – Food and Agriculture Organization of the United Nations. Sustainable food systems - Concept and framework. 2018. https://www.fao.org/3/ca2079en/CA2079EN.pdf

Fazey, I., Schäpke, N., Caniglia, G., Patterson, J., Hultman, J., van Mierlo, B.Wyborn, C., … (2018). Ten essentials for action-oriented and second order energy transitions, transformations and climate change research. Energy Research & Social Science, 40, 54–70. https://doi.org/10.1016/j.erss.2017.11.026

Gill, M., Den Boer, A. C. L., Kok, K. P. W., Breda, J., Cahill, J., Callenius, C., ... & Broerse, J. E. W. (2018). A systems approach to research and innovation for food systems transformation. https://orca.cardiff.ac.uk/id/eprint/131581/

Godfrey, L., Funk, N., and Mbizvo, C. (2010). Bridging the science-policy interface: a new era for South African research and the role of knowledge brokering. S. Afr. J. Sci. 106, 1–8. doi: 10.4102/sajs.v106i5/6.247

Hilger, A., Rose, M., & Kell, A. (2021). Beyond practitioner and researcher: 15 roles adopted by actors in transdisciplinary and transformative research processes. Sustainability Science, 16, 2049–2068. https://doi.org/10.1007/s11625-021-01028-4

Kok, K. P. W., Gjefsen, M. D., Regeer, B. J., & Broerse, J. E. W. (2021). Unraveling the politics of “doing inclusion” in transdisciplinarity for sustainable transformation. Sustainability Science, 16, 1811–1826. https://doi.org/10.1007/s11625-021-01033-7

Kilpatrick, D.G. Definitions of Public Policy and the Law. National Violence Against Women Prevention Research Center, 2000. Available online https://mainweb-v.musc.edu/vawprevention/policy/definition.shtml

Klerkx, L. (2012), "The role of innovation brokers in the agricultural innovation system", in *Improving Agricultural Knowledge and Innovation Systems: OECD Conference Proceedings*, OECD Publishing, Paris, https://doi.org/10.1787/9789264167445-19-en.

Mair, D., Smillie, L., La Placa, G., Schwendinger, F., Raykovska, M., Pasztor, Z. and Van Bavel, R., Understanding our Political Nature: How to put knowledge and reason at the heart of political decision-making, EUR 29783 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-08621-5, doi:10.2760/374191, JRC117161. https://publications.jrc.ec.europa.eu/repository/handle/JRC117161

McGonigle, D. et al. “A Knowledge Brokering Framework for Integrated Landscape Management.” *Frontiers in Sustainable Food Systems* (2020) https://doi.org/10.3389/fsufs.2020.00013

van Mierlo, B., Regeer, B., van Amstel, M., Arkesteijn, M., Beekman, V., Bunders, J., … Leeuwis, C. (2010). Reflexive monitoring in action. A guide for monitoring system innovation projects. Retrieved from https://edepot.wur.nl/149471

Padilla, M.C.; Ramos Filho, L.O. Participatory Action Research initiatives to generate innovations towards a sustainable agriculture: A case study in Southern Spain. In System Innovations, Knowledge Regimes, and Design Practices towards Transitions for Sustainable Agriculture; Barbier, M., Elzen, B., Eds.; INRA Département Sciences pour l’Action et le Développement (SAD): Paris, France, 2012; Available online https://hal.archivesouvertes.fr/hal-01191290 (accessed 6/05/2023).

SCAR – Standing Committee on Agricultural Research. Terms of Reference SCAR FOOD SYSTEMS Strategic Working Group – (SCAR FOOD SYSTEMS SWG). 2016. Document: TOR_Food-systems_SWG-final.pdf (scar-europe.org) https://scar-europe.org/images/FOOD/Documents/TOR_Food-systems_SWG-final.pdf

SCAR – Standing Committee on Agricultural Research. Programming research and innovation (R&I) for improved impact, 2018 https://scar-europe.org/programming-research-and-innovation-for-improved-impact ;

https://knowledge4food.net/wp-content/uploads/2018/10/181031_scar_policybrief-programming_research_innovation.pdf

SCAR – Standing Committee on Agricultural Research. 20.10.2022 SCAR Food Systems SWG Workshop "Translating science into policy: best practices and challenges" https://scar-europe.org/food-events/eventdetail/157/-/workshop-on-translating-science-into-policy-best-practices-and-challenges, also available at https://ec.europa.eu/eip/agriculture/en/event/scar-food-systems-swg-workshop-%E2%80%9Ctranslating.html"

Singh, B.K., Arnold, T., Biermayr-Jenzano, P. et al. Enhancing science–policy interfaces for food systems transformation. Nat Food 2, 838–842 (2021). https://doi.org/10.1038/s43016-021-00406-6

Snyder, H. Literature review as a research methodology: An overview and guidelines. J. Bus. Res. 2019, 104, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Tuomisto HL. The complexity of sustainable diets. Nat Ecol Evol. 2019 May;3(5):720-721. doi: 10.1038/s41559-019-0875-5. PMID: 30988495. https://pubmed.ncbi.nlm.nih.gov/30988495/

Turnhout, E., Stuiver, M., Klostermann, J., Harms, B., and Leeuwis, C. (2013). New roles of science in society: different repertoires of knowledge brokering. Sci. Public Policy 40, 354–365. doi: 10.1093/scipol/scs114

von Braun J, Afsana K, Fresco L, Hassan M, Torero M. Food Systems – Definition, Concept and Application for the UN Food Systems Summit. UN – United Nations Food Systems Summit 2021 Scientific Group. 2021. Leadership | United Nations. https://knowledge4policy.ec.europa.eu/sites/default/files/food_systems_concept_paper_scientific_group_-_draft_oct_261.pdf

Ward, V., House, A., & Hamer, S. (2009). Knowledge Brokering: The missing link in the evidence to action chain?. Evidence & policy : a journal of research, debate and practice, 5(3), 267–279. https://doi.org/10.1332/174426409X463811

Wellstead, A., Stedman, R. Mainstreaming and Beyond: Policy Capacity and Climate Change Decision-Making. Michigan Journal of Sustainability, Palgrave Commun 44, (2015) http://dx.doi.org/10.3998/mjs.12333712.0003.003

Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., Tilman, D., DeClerck, F., Wood, A., et al. Food in the anthropocene: The EAT–lancet commission on healthy diets from sustainable food systems. *Lancet* 2019, *393*, 447–492. https://doi.org/10.1016/S0140-6736(18)31788-4

Wittmayer, J. M., & Schäpke, N. (2014). Action, research and participation: Roles of researchers in sustainability transitions. Sustainability Science, 9, 483–496. https://doi.org/10.1007/s11625-014-0258-4T

Annexes

Annex A - Survey: Examples of Science Translated into Policy SCAR Food Systems SWG Action

Contents

Introduction 24

Background 25

Questionnaire 29

1. General questions 29
2. Background details of the R&I example that translated to policy 29
3. Background details of the drivers and impacted public policy and services 31
4. The research and policy relationships of the example 32
5. Key learning's and what happened next 35
6. Any other comments to provide: 35

Introduction

Purpose: The aim of this survey/questionnaire is to identify examples from across all member states and other participating countries of where food systems research has translated into policy.

Food systems (FS) research covers the entire value chain in its widest form and their interactions; from ecosystems services, primary production (agriculture, aquaculture & fisheries), harvesting, storage, processing, packaging, distribution, retailing, service sector, waste stream management and recycling, food and feed safety, to consumers, nutrition for citizens' health & well-being, and diet related diseases[1]. The term research, in this case, also covers science-based policy advice.

The answers from this survey are designed to be able to address four key objectives of this SCAR Food Systems SWG action:

[1] Description food Systems is provided in 1st Terms of Reference of the SCAR Food Systems SWG 2016-2019 . Further definitions of the food system are provided in by the FAO, 2018 and the Scientific Group of the UN Food Systems Summit, 2020.

5. Explore, within member states (MS) and at European level, the links between government ministries (departments) and independent research bodies (e.g. research centres and universities) where research outcomes are considered as part of policy formation.

6. Evaluate and identify examples within MS and at European level of existing policies where scientific/research outcomes that have influenced policy, focusing on the key contributing and hindering elements in the translation of science into policy.

7. Identify key requirements e.g. piloting, demonstration, knowledge transfer, training, funding, and the strategic areas along the system from science to policy, where such provision of key resources would benefit uptake of research by policymakers.

8. Establish a set of best practice principles that enables effective translation of science/research outputs for future policy.

To maximise the observations and learning's from this survey, **we request examples of where there has been evidence of impact on policy.** We are seeking to try to avoid examples of where there currently is an intention to translate into policy. However, where the full potential impact on policy did not or has yet to fully occur, we would encourage you to include these examples and will request more information as to the hindering factors that prevented the full realisation of impact. Examples are encouraged from national and European funded projects, including innovation programmes such as EIP-Agri.

It is envisaged that representatives and/or contacts within national or European funder groups of food systems research and knowledge brokers (see definition below) may be best suited to guide the completion of this survey, as it is envisaged that input from researchers and policymakers may be required. Therefore, as much as possible the survey has been designed into sections, where questions could be completed from the perspective of the researcher, policymaker and if applicable the knowledge broker. A guide is provided at the start of each section for the role groups that could be best placed to address the questions set.

Therefore, an estimate of the time required to complete the survey cannot be provided due to the potential need for follow up interview(s) and contact with the relevant personnel.

The deadline to provide examples through the completion of the questionnaire template is **28th February 2022. Please complete a new questionnaire for each new example.**

Please return completed questionnaire(s) to *anastasiya.terzieva@inrae.fr* *(and cc. Noeleen.McDonald@agriculture.gov.ie)*

For questions about this survey, please contact Noeleen.mcdonald@agriculture.gov.ie

Background

What is meant by policy?

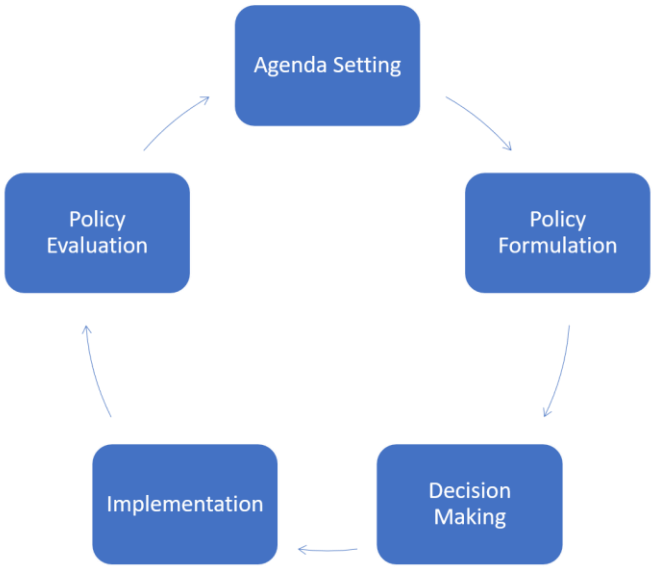
According to the Collins English dictionary policy is a *set of ideas or plans that is used as a basis for making decisions, especially in politics, economics, or business.* In the context of this survey we seek examples from public policy. Public Policy can be generally defined as *a system of laws, regulatory measures, courses of action and funding priorities concerning a given topic promulgated by a governmental entity or its representatives*[2].

Within this questionnaire we seek examples of national and/or European funded research and innovation (R&I) /research and development (R&D) projects that had an impact on **public policy and services**. Critically in these examples we seek to identify **how the research findings/outcomes were effective in raising**

[2] https://mainweb-v.musc.edu/vawprevention/policy/definition.shtml

awareness to the intended policymaker and stakeholder and were subsequently incorporated into the policy cycle (Figure 1).

Figure 1: The Classic Policy Cycle[3]



The example could be of a research project that informed the **development of a new (or part of a new) policy development /scheme or service, or the revision /verification of an existing policy/scheme.**

Impacts may be where the beneficiaries include government departments and their agencies, non-governmental organizations (NGOs) and other public sector organizations and society. Delivery of these impacts may occur through top-down changes to policy or public schemes, from the bottom up changes to behaviors or a combination of both. Some general examples of public policy and service impacts are as follows[4]:

- Implementation of a new policy or revision/verification of an existing policy to improve the effectiveness, efficiency and/or responsiveness of public services or action and/or government regulation,
- Improvements in best practice that have been made based on the research project influence to public services/schemes,
- Changes to sectors within the food system that have been informed by research,
- Changes to legislation, regulations, guidelines or policies that have been informed by evidence from research

Within the policy cycle, 'Agenda Setting' could also be considered as a policy-driver e.g. a strategy/action/agenda for scientific research to be funded to enable new policy/scheme or the revision /verification of an existing policy/scheme to occur. Therefore, this survey also seeks to capture what policy/polices and or Strategic Research and Innovation Agenda (SRIA) acted as drivers. It may be the case

[3] Wellstead, A., Stedman, R. Mainstreaming and Beyond: Policy Capacity and Climate Change Decision-Making. Michigan Journal of Sustainability, Palgrave Commun 44, (2015) http://dx.doi.org/10.3998/mjs.12333712.0003.003

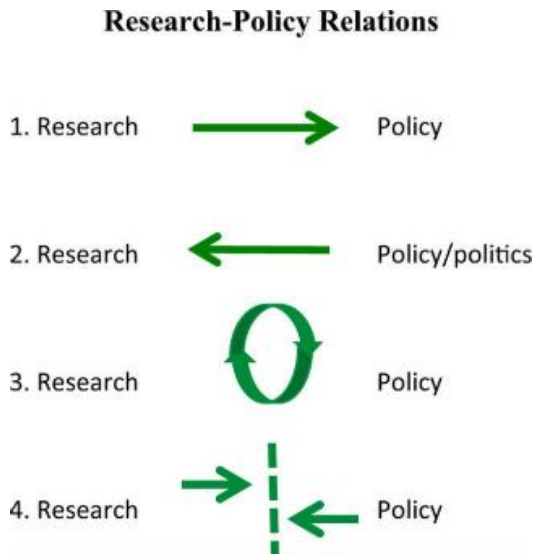
[4] Research Impact Guidance pdf, accessed at https://www.gov.ie/en/publication/3d715-dafm-announces-2021-call-for-research-proposals/

that the original policy-driver for a project provided outcomes that subsequently influenced a revision/verification of the original policy-driver or updates to SRIA's, e.g. inclusion of thematic priorities in national and/or European R&I SRIA.

To understand why the example provided may have been successful, we seek to understand the science to policy relations that operated during the research cycle and subsequent translation into policy. In addition to identifying if and what frameworks, principles and or practices were present to allow for these relations to operate in the example(s) provided.

There are four different frameworks that could be used to theorise research-policy relations that are drawn from wider social science literature. (1) Knowledge shapes policy; (2) politics shapes knowledge; (3) co-production; and (4) autonomous sphere. Figure 2 is a simplified representation of these four frameworks that are taken from and further explained in a UK research paper by Boswell & Smith (2017)[5].

Figure 2



The influence of a knowledge broker as a solution to bridge the gap between science and policy relations has been increasing highlighted in many scientific fields[6]. A knowledge broker is considered as an agent/ intermediary, who can facilitate interaction and engagement among researchers and end-users to enhance knowledge exchange, enable the use of scientific knowledge in decision-making processes and strengthen research impact[7].

[5] Boswell, C., Smith, K. Rethinking policy 'impact': four models of research-policy relations. Palgrave Commun 3, 44 (2017). https://doi.org/10.1057/s41599-017-0042-z

[6] Ward, V., House, A., & Hamer, S. (2009). Knowledge Brokering: The missing link in the evidence to action chain?. *Evidence & policy : a journal of research, debate and practice*, *5*(3), 267–279. **https://doi.org/10.1332/174426409X463811**

[7] **Three ways that knowledge brokers can strengthen the impact of scientific research - Research to Action**

Many people engage in knowledge brokering activities but do not hold the formal title of a 'knowledge broker'. It is acknowledged that models of knowledge brokering vary considerably but there are a number of key discernible features of a knowledge broker[8]:

- Makes connections between groups of people to facilitate the use of research evidence in policy making,
- Builds up relationships and networks, and are well informed,
- Keeps up to date on what is happening in their domain,
- Are trustworthy subject experts with a high level of credibility,
- Are not advocates or lobbyists for a cause.

In a recent paper by McGonigle. et al (2020) published in the journal of frontiers in sustainable food systems[9] they state that "*Knowledge brokering is considered to cover a range of activities including supplying knowledge (linking policymakers to experts), bridging (mediating and translating between science and policy), and facilitating interaction and collaboration between researchers and policymakers to co-produce knowledge[10]. Knowledge brokers can include applied researchers, technical policy advisers (e.g., in government departments or NGOs, or the staff of third party institutions (e.g., think tanks or consultancies). In some cases, specific institutional structures either in research or policy organisations can fulfil this function[11]*.

In the broader interest of the wider impact of science to various actors and end-users, e.g. industry, this role is also be referred to as a "Innovation broker"[12]

[8] Cummings S, Kiwanuka S, Gillman H, Regeer B. The future of knowledge brokering: perspectives from a generational framework of knowledge management for international development. *Information Development*. 2019;35(5):781-794. doi:10.1177/0266666918800174

[9] McGonigle, D. et al. "A Knowledge Brokering Framework for Integrated Landscape Management." *Frontiers in Sustainable Food Systems* (2020) https://doi.org/10.3389/fsufs.2020.00013

[10] Turnhout, E., Stuiver, M., Klostermann, J., Harms, B., and Leeuwis, C. (2013). New roles of science in society: different repertoires of knowledge brokering. *Sci. Public Policy* 40, 354–365. doi: 10.1093/scipol/scs114

[11] Godfrey, L., Funk, N., and Mbizvo, C. (2010). Bridging the science-policy interface: a new era for South African research and the role of knowledge brokering. *S. Afr. J. Sci.* 106, 1–8. doi: 10.4102/sajs.v106i5/6.247

[12] Klerkx, L. (2012), "The role of innovation brokers in the agricultural innovation system", in *Improving Agricultural Knowledge and Innovation Systems: OECD Conference Proceedings*, OECD Publishing, Paris, https://doi.org/10.1787/9789264167445-19-en.

Questionnaire

If you are providing more than one example please complete a new questionnaire for each

1. General questions

Name and contact details of person providing and reporting the example

Q1.1: First Name:	
Q1.2: Last Name:	
Q1.3: Email:	
Q1.4: Name of the organisation/institution	

Q1.5: Please select the type of organisation (**tick box** √)

Public authority	
Private sector	
Research organisation/ academia	
NGO	
Civil society organisation	
Other	

2. Background details of the R&I example that translated to policy

Input into this section could be from the funder, researcher, and knowledge broker

Q2.1: In what Country/Countries did the research take place?	

Q2.2: What category/ part of the food system does the example represent? (**tick box** √)

Production: Primary production	
Processing: Includes food packaging	
Distribution: includes logistics, trade, catering	
Consumption: Includes consumer and consumer related activates	
Food waste	
Food safety	

Q2.3: What sub-category of the food system does the example represent: (**tick box** √)

Production		**Processing**		**Distribution**		**Consumption**		**Food waste**		**Food safety**	
Aquaculture		Feed		Retailing		Consumer research		Production		Production	
Crops		Food		hotel-restaurant-canteen-catering		Nutrition research for health		Processing		Processing	
Fishers		Transformation-ingredients		Logistics-transport-storage				Distribution		Distribution	
Inputs		Packaging						Consumption		Consumption	
Livestock											

Q2.4: What was the name/title of the research project(s)	
Q2.5: Briefly describe the research project(s) outlining what were the purpose/aims and objectives (the projects abstract could be provided here).	
Q2.6: Names of the research institutes/university leads and partners	
Q2.7: The duration of the research project (start and end dates)	
Q2.8: Was the research project(s) public funded? **Yes/No** **If yes,** please provide name of the funder and the amount (total € for the duration of the project)	
Q2.9: Did the project(s) receive additional supports, i.e. private/industry funding? **Yes/No** **If yes**, please provide name of the funder and the amount (total € for the duration of the project(s)	
Q2.10: Did the project(s) have a knowledge transfer plan for dissemination of its findings? **Yes/No** **If yes**, was this part of the funding requirement of the project(s)?	

3. Background details of the drivers and impacted public policy and services

Input into this section could be from the funder and policymaker

Q3.1: In what Country/Countries was policy influenced by the translated research ?	

Q3.2: Was there a policy-driver *for the research project? **Yes/No** **If yes**, please provide the policy type and name of the policy	
Q3.3: **If yes to question 3.1**, if there was a policy-driver, please provide the name of the ministries/departments/agency(s) associated.	
Q3.4: **If Yes to questions 3.1 & answer to 3.2,** were these ministries/departments/agencies responsible for providing funding for the research project? **Yes/No** **If yes,** please provide the amount (total € for the duration of the project)	
Q3.5: What specific public policy and/or service was impacted by the scientific research? Please provide name and brief details and **links to any relevant documents.**	

**See introduction describing policy-driver*

Q3.6: How would you describe the example: **(tick one box √)**

1. Informing/contributing to new policy/schemes	
2. Verification of an existing policy/scheme	

Q3.7: Please select which of the following best describes the driver/ formulation of the research example (**tick one box √)**

	(tick one box √)	**Additional Information/Comment**
Demand Led- sometimes referred to as applied or strategic research undertaken to address a specific identified problem, e.g. knowledge gap or maintenance of a policy's relevance.		
Supply led -"Blue Skies"- sometimes referred to as basic/fundamental research,		

that is flexible and curious-driven research that leads to outcomes not envisaged at the outset. Implementation of this type of research outcomes/findings could have lead to the development of new policy.		

4. The research and policy relationships of the example

Background on the cooperation/relationship that enabled the change

Input into this section could be from the funder, policymaker, researcher and knowledge broker

Q4.1: Please select one of the 4 research-policy relations that best describes the framework and collaboration that existed for this example **(tick one box √)**

1. Research ⟹ Policy *Knowledge shapes policy*	
2. Research ⟸ Policy *Politics shapes knowledge*	
3. Research ⟳ Policy *Co-production*	
4. Research ⟹ ⟸ Policy *Autonomous spheres*	

Q4.2: Were there formal structures and/or procedures in place between the research agency & /or scientist and the ministry/department/agency to aid transfer of knowledge? **Yes/No** **If yes**, please provide details as to what these structures were e.g. principles, piloting, demonstration, operating procedures, training for the agency/scientist and/or ministry/department/agency, formal connecting activities	
Q4.3: Was the transfer of knowledge between research and policy (even vice-versa) informal? E.g. personal consultation **Yes/No** **If yes**, please provide details of what key informal connecting activities enabled the transfer.	
Q4.4: Was the cooperation /relationship between the researcher and/or institute and the policymaker established before the project began? **Yes/No** **If yes**, please provide information, such as when and how it was established and maintained	
Q4.5: Was the research objective/idea a co-creation with the policymaker? **Yes/No** **If yes,** please provide details of why and how the co-creation occurred.	
Q4.6: Were there fundamental evidence dissemination activities e.g. event/publication/policy brief etc, that was the basis for which the policymaker used as part of their decision making? **Yes/No** **If yes**, please provide the relevant details of the dissemination activity e.g. references **and if online the links to access.**	
Q4.7: Please provide an approximate timeline of when research was carried out, was translated and informed public policy.	
Q4.8: Was there a knowledge broker involved in assisting the transfer of knowledge? **Yes/No.** **If Yes,** please provide details:	

Q4.9: **If yes,** to question **4.8**, please select the following from which the knowledge broker was associated. Under additional information, where possible please provide the name of the associated organisation and indicate if they were from the home research institute or the government ministry/agency/department or other.

	(tick one box √)	**Additional Information/Comment**
Government		
Ministry/agency/department		
Natural resource management group		
University and/or research institute		
Community group		
Industry representative		
Other		

Q4.10: Was the knowledge broker funded by the project? **Yes/No** **If yes**, how much funding (total contribution in €). *If providing estimate/approx. figure, please state this in the answer*	
Q4.11: What key activities did the knowledge broker use to help the translation of research to science?	
Q4.12: Did the knowledge broker have established relationships and/or networks to allow transfer of knowledge? **Yes/No.** If **Yes**, please provide details of what those relationships and/or networks were	

5. Key learning's and what happened next

Input into this section could be from the funder, researcher, policymaker and knowledge broker

Q5.1: Overall what were the key contributing factors that lead to this example of research influencing policy? If possible, rank in order of importance, with one being the highest order of importance.	
Q5.2: Was there hindering factors in this example of research influencing policy? **Yes/No** **If yes**, please provide details E.g. language barriers, lack of expertise, changes in personnel, lack of resources, change in government, change in national or European priorities, etc. If possible, rank in order of importance, with one being the highest order importance.	
Q5.3: Did this example lead to other research-policy collaborations that have occurred/ on-going or planned? **Yes/No** **If yes**, please provide details	
Q5.4: Are the institutes and/or ministries part of a network to promote science activities into policy example European Science Advisory Forum?	

6. Any other comments to provide:

Annex B – List of the science-policy translation examples included in the SCAR FS SWG Action 3 International Survey

The International Survey led to the identification of **59 examples of successful science-policy translation**, gathered from different countries. A list of these examples is presented in Table B1.

For each of the examples, the Table reports: i. the title of the included project(s), ii. the country from which the example was proposed, and iii. the questionnaire code used for the project identification in the database and the analysis.

Table B1. List of the 59 science-policy translation examples included in the International Survey

Title of project/s included in the example	Country	Questionnaire Code
Vitamin D fortification of liquid dairy and spreads to improve vitamin D status in Finland	Finland	FI 01.01
Evaluation of the implementation and impact of the Village Shops as Service Hubs pilot project - Village shop support in 2019 – 2021	Finland	FI 01.02*
Product monitoring accompanying the National Reduction and Innovation strategy for sugar, fats, and salt in processed foods (NRI)	Germany	DE 02.01
German Nutrient Database	Germany	DE 02.02
Second German National Nutrition Survey (NVS II)	Germany	DE 02.03
Description and appraisal of selected front-of-pack nutrition labelling schemes and MRI proposal for a front-of-pack nutrition labelling scheme	Germany	DE 02.04
Multi-project case – Project 1. BIODISTRICT Valorizzazione delle produzioni da agricoltura biologica: progetto pilota per lo sviluppo di distretti biologici ed ecocompatibili; Project 2. DIMECOBIO Progetto per la definizione delle dimensioni economiche del settore dell'agricoltura biologica ai diversi livelli della filiera; Project 3. BIOREG - Individuazione e sviluppo dei distretti biologici: casi applicativi della metodologia BIODISTRICT alla realtà italiana	Italy	IT 03.01*
VIVAINBIO - Activity of technical support to Ministry of Agriculture on organic vegetable production in greenhouses and identification of innovative technologies in organic vegetable seedlings.	Italy	IT 03.02
Multi-project case – Project 1. ORWINE Regulation on Organic Wine production; Project 2. SOLIBAM (2010-2014) and Project 3. DIVERSIFOOD (2015-2019) – Inclusion of heterogenous genetic material within the EU organic regulation; Project 4. AGRILINK AKIS model and Living labs in agricultural innovation; Project 5. NEFERTITI AKIS and Demofarms; Project 6. LIAISON (2018-2022) – AKIS; Project 7. DESIRA digitalization in agriculture and rural areas	Italy	IT 03.03
Analysis of epidemiological and laboratory studies of African swine fever (ASF), diseases spread forecast, risk analysis and disease management strategy in wildlife and pig houses in the Republic of Lithuania	Lithuania	LT 04.01
Royal decree of sustainable nutrition in agricultural soils (from a Fertilization Expert Panel)	Spain	ES 05.01
INTERREG EUROPE SME- ORGANICS Enhancing SME competitiveness and sustainability in the organic sector	Spain	ES 05.02
Bases zootécnicas para el cálculo del balance alimentario de nitrógeno y de fósforozootechnical bases for the calculation of the nitrogen and phosphorus feed balance	Spain	ES 05.03
Standardisation of pig carcass classification in the EU through improved statistical procedures and new technological developments (EUPIGCLASS)	Spain	ES 05.04

Appearance of a new weed in the maize crop in the Ebro valley (Spain): teosinte. Biological characterization and study of control methods.	Spain	ES 05.05
Andalusian Agrifood Campus of International Excellence as a successful example of dynamization of quadruple helix in Andalusian agrifood sector – ceiA3	Spain	ES 05.06*
AgroMIS singular project: ceiA3 as strategic instrument towards a modern, innovative, and sustainable agro-food production: motor of the rural Andalusian territory	Spain	ES 05.07
Eating crickets – an appetising solution for today's global problems	Sweden	SE 06.01
BioNutriNet	France	FR 07.01*
Risk associated with ingestion of food additive Titanium dioxide (E171)	France	FR 07.02*
Ammonia emission research in the pig sector	Hungary	HU 08.01
Common Agricultural Policy (CAP) strategic planning in Hungary	Hungary	HU 08.02
Strategies for controlling cadmium contamination in Irish Food Production (RED-Cd-IRL)	Ireland	IE 09.01
An Evaluation of Development Opportunities, Policies, and Initiatives Shaping Ireland's Transformation to a Sustainable Low Carbon Bioeconomy – BIO-ÉIRE A Bio Economy for Ireland	Ireland	IE 09.02*
Multi-project case – Project 1. ADER 15.1.1. Socio-economic impact of food waste at national level in the current context of crisis related to food security and climatic changes; Project 2. ADER 18.1.2. Methods for reducing food waste in the agri-food chain, at national level, in order to prevent and reduce the socio-economic impact, by 2030	Romania	RO 10.01
Multi-project case – Project 1. Research on the influence of wheat flour extraction degree on bread acrylamide level (2012- 2015); Project 2. Research regarding the influence of some technological factors on the acrylamide level in fried potatoes and coffee (2019 – present)	Romania	RO 10.02
Research Development and Innovation (RDI) project to develop a low-cost toolbox to correlate parameters of controlled atmosphere storage conditions of fresh fruits and vegetables and their quality parameters for human consumption (sensorial analysis, bio-physical-chemical properties, etc.)	Romania	RO 10.03*
Optimization of sturgeon-intensive technology by using feed added with plant bioactive compounds (FITOBIOACVA).	Romania	RO 10.04
Multi-project case – Project 1. Research on intensive fish farming in the polyculture system and the complex valorisation of aquatic bioresources; Project 2. Recirculating aquaculture systems used in the pre-repopulation stage of natural waters with fish material	Romania	RO 10.05
Manunet III- Non-Act. NOvel Natural Antimicrobial CoaTings for food production chain. 2018-2020	Romania	RO 10.06
Ensuring quality and safety of organic food along the processing chain	Romania	RO 10.07
Multi-project case – Project 1. COST Action FA1003: East-West Collaboration for Grapevine Diversity Exploration and Mobilization of Adaptive Traits for Breeding; Project 2. COST CA17111 - Data integration to maximise the power of omics for grapevine improvement	Romania	RO 10.08
SafeConsume - Safer food through changed consumer behaviour: Effective tools and products, communication strategies, education and a food safety policy reducing health burden from foodborne illnesses	Romania	RO 10.09
PhD thesis: Quality of Romanian Agri-Food Products in an European Context, author: Decebal Ștefăniță Pădure, Dunărea de Jos University of Galați, Romania, coordinators Prof. Petru Alexe and prof. Nicoleta Stănciuc	Romania	RO 10.10
PhD thesis: Research Related Nutrition Labelling Extension with Support of QR-Code author: Adriana Elena Radu (Balaban), Dunărea de Jos University of Galați, Romania, coordinator Prof. Petru Alexe	Romania	RO 10.11

Circular Agriculture	The Netherlands	NL 11.01
FUSIONS	The Netherlands	NL 11.02
Towards a long-term Africa-EU partnership to raise sustainable food and nutrition security in Africa – PROIntensAfrica	The Netherlands	NL 11.03*
Cooperative Support Action LEAP4FNSSA. Leap4fnssa | Food and Nutrition Security and Sustainable Agriculture	The Netherlands	NL 11.04
Food Waste Programme	The Netherlands	NL 11.05
Food waste monitor	The Netherlands	NL 11.06
SLIMMER	The Netherlands	NL 11.07
Fostering Integration and Transformation for FOOD 2030 (FIT4FOOD2030)	The Netherlands	NL 11.08
Datomærker 2020	Denmark	DK 12.01
Consumer practice, perceived risk, and self-efficacy - Date labels 2021	Denmark	DK 12.02*
Influence of cultivars and growing season on chemical parameters of pumpkin seed oil	Croatia	HR 13.01
Fostering Integration and Transformation for FOOD 2030 - FIT4FOOD2030 policy lab	Belgium	BE 14.01*
GO4FOOD call	Belgium	BE 14.02
Listeria guidance project of Fenavian representing the Belgian meat processing industry were used as practical knowledge to draft the guideline	Belgium	BE 14.03
Moulds and mycotoxins in silage (PhD research project)	Belgium	BE 14.04
MYCOTOXPLUIM – Detection of Fusarium mycotoxins and transfer to animals and humans: a poultry case study	Belgium	BE 14.05
Identification and risk characterization of moulds in fruit and sweetened foods – FUNGIFOOD	Belgium	BE 14.06*
PATULINE – Development of molecular identification and detection techniques of patulin producing moulds for studying the influence of storage conditions of apples on the expression of patulin producing genes.	Belgium	BE 14.07
PATPOM project – Patulin in apple products: elucidation of its biosynthetic pathway and development of preventive measures.	Belgium	BE 14.08
ANAPLANTOX: Development of a multi-target method for the analysis of plant toxins in food supplements	Belgium	BE 14.09
Reference working via desktop literature studies and measurement campaigns concerning the emission problems in the Flemish livestock sector	Belgium	BE 14.10
MIGRINKT: Study of the stability and reactivity of migrating components from printing inks and adhesives used in food packaging	Belgium	BE 14.11
QPCRGMOFOOD, SIGMEA, Co-EXTRA, Ministerie van Middenstand en Landbouw - Ontwikkeling van een routinetest voor een lijn-specifieke detectie van GMO's in plantaardige producten.	Belgium	BE 14.12
Antimicrobial resistant microbiota in broilers: evaluation of the risk for public health (Abrisk) Optimalisation of cleaning and disinfection in livestock (Cleandesopt) Use of biocides on pig and poultry farms and relation to the problem of antimicrobial resistance (BIOCAMRISK) Antibiotic residues, antibiotic resistant bacteria and antibiotic resistance genes in manure, soil and plants and the potential exposure of humans (Amresman)	Belgium	BE 14.13

(*) Case selected for the portfolio analysis.

Source: TST elaboration on SCAR FS SWG Action 3 International Survey database. The database is available as an external annex to this document.