Info Note

Science – Policy Interactions in Climate Change Mitigation and Adaptation to Climate Change: Lessons from Latin America

Analyzing science – policy interactions in the climate change field through experiences in different sectors and countries in Latin America.

Paola Andrea Daza, Jean-François Le Coq

JULY 2021

Key Messages

- Science – policy interactions are exchanges among key stakeholders looking to reconcile value systems and interests to ultimately, influence decision making processes through knowledge exchange and generation.
- These interactions are the way in which climate science tries to reach policy to create feasible solutions, with properly addressed objectives and processes for implementation and evaluation.
- Knowledge uptake highly depends on adjusting scientific language and information to stakeholder capability and interests, and on communicating concrete inputs or recommendations for decision making.
- Science – policy interfaces legitimize collaborations between science and policy, by delimitating and coordinating stakeholder roles and enabling their participation in knowledge generation and problem-solving processes.

Background

For rural populations and food systems in Latin America, climate change presents a great challenge given their vulnerability to extreme climate events (Magrin, 2015; Ribera, 2012). Climate variability, exacerbated by climate change, has a dramatic impact on crop yields (Mbow et al., 2019) and risks the sustainability of food security in the region.

In this context, adequate policies are needed to address the complexity that comes from agriculture and food systems being at the intersection of three major challenges: food insecurity, adapting to climate change and reducing greenhouse gas emissions (Campbell & Vermeulen, 2015). To consolidate these policies, it is necessary to strengthen the role of science in decision-making processes. While science alone may not lead to overarching decisions, it is required for the proper assessment of climate issues and for the feasibility analysis of climate change mitigation and adaptation measures. (Gluckman, 2011).

However, the diversity of conditions and stakeholders that are involved in policy processes, make it complex to strengthen the role of science in decision-making. Indeed, there are continuous challenges related to confronted stakeholder values and interests as well as, issues of knowledge exchange and communication (Sokolovska et al., 2019). Although scholars have proposed different analytical frameworks and concepts to analyze science-policy interactions and outcomes (Dinesh et al., 2018; Hutton et al., 2017; Pregernig, 2014; Sokolovska et al., 2019; Van den Hove, 2007), more research is necessary. The causes of gaps between knowledge generation and implementation (Van Kerkhoff & Lebel, 2015); understanding how to assess the impact of these interactions in policy processes and results (Steenwerth et al., 2014); and developing principles to establish these interactions (Wynanda I. Van Enst et al., 2014); present areas for further research.

In this sense, this study analyzes experiences of science – policy interaction in Latin America, to identify the factors that enable and hinder the collaboration between science

CGIAR
RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security
CCAFS

and policy, in the different processes that take place in mitigation and adaptation policies[1].

Objectives and Methodology

Our methodology is qualitative and consisted in narrative analysis collected through semi-structured interviews carried out to scientists from research institutions and in managerial positions in the public sector, development aid practitioners, professionals in communities of practice, knowledge brokers[2], and NGO directives, who actively participated in science – policy processes regarding climate change mitigation and adaptation in Latin America. In this sense, our pool of respondent was narrowed to scientists and practitioners. However, counting with the participation of professionals in knowledge brokering roles and in communities of practice, allowed us to explore the policy community perspective of the science – policy interaction. Table 1 provides information regarding stakeholders and sectors involved in our interview process, policy process considered and output of the 18 cases of science – policy interaction on which we base this study.

The information gathered during the interviews was analyzed through a process of critical interpretation and systematization of experiences (Barnechea García & Morgan Tirado, 2010) to generate lessons learned regarding science – policy interaction practices and methods.

We draw from literature review and empirical observation a conceptual framework to frame the analysis of the case studies. Based on this framework our analysis focused on 1) the features of science – policy interactions and the roles of stakeholders; 2) limitations of science – policy interactions; 3) the dynamics of these interactions; and 4) the use of knowledge generated by science - policy interactions. In the following section, we explain in detail our analytical framework.

Finally, the analysis was implemented using the guidelines proposed by Cáceres (2003), to generate categories without quantification by linking the information to analytical framework.

A conceptual framework for Science Policy Interactions

Ideas about the role of science in decision-making come from ancient political philosophy. It was argued that in public policy, science "[speaks] truth to power" (Price, 1981) and thus, leads to fact-based decisions (Pregernig, 2014; Sokolovska et al., 2019; Van den Hove, 2007).

[1] *The detailed results of this studies are available in the spanish report "Interacción Ciencia-Política en el Ámbito de las Políticas de Mitigación y Adaptación al Cambio Climático: Experiencias y Lecciones de América Latina", in: https://cgspace.cgiar.org/handle/10568/111259*

	Country or Sub region	Case Study	Stakeholders	Sector	Policy Process	Deliverable of Science Policy Interaction
E1	Mexico	Design of the Agenda for Climate Change, Agriculture and Food Systems	GIZ (Development aid) Secretariat of Agricultura and Rural Development (Public sector)	Agriculture	Agenda Setting	Agenda for Climate Change, Agriculture and Food Systems
E2	Colombia	Design and implementation of a Hydro - Sedimentological Model at the Ciénaga Grande in Santa Marta - Effects of Climate Variability on Water Bodies	INVEMAR (Research Institute) Corporación Autónoma Regional del Magdalena - CORPAMAG (Public sector)	Environment	Monitoring and Evaluation	Hydro - Sedimentological Model
E3	Sub Regional – Andes and Caribbean	Health in Climate Change Adaptation	Pan-American Health Organization (Development aid) Ministries of Health (Public sector)	Health	Agenda Setting	Climate Change Adaptation Plans S-PNAD
E4	Regional	Climate Knowledge Brokers Group Facilitating science - policy links for the development of climate policies in Latin America	Climate Knowledge Brokers Group Policy makers in different sectors (Public sector)	Climate Policy	Implementation	Reports assessing knowledge communication and use in climate policy
E5	Costa Rica	Alliance for Carbon Neutrality - SMEs towards Carbon Neutrality 2014 - 2018	Organization ALIARSE Ministries of Environment (Public sector)	Miscellaneous Products and Services	Implementation	Carbon footprint management systems for SMEs
E6	Guatemala	Guatemalan System of Science and Climate Change	Academia Ministry of Environment (Public sector)	Climate Change	Agenda Setting	Policy briefs that communicate scientific information about climate change to policy makers
E7	Brazil	Design of the MAIS System - Smart and Sustainable Agroclimatic Model	Adapta Group Ministry of Agriculture (Public sector)	Agriculture	Implementation	MAIS System - Smart and Sustainable Agroclimatic Model
E8	Panama	Review of Strategies for the Management of the Coffee Borer Beetle (CBB)	FONTAGRO (Development aid) Agricultural Research Institute of Panama (Public sector)	Agricultura	Monitoring and Evaluation	New Strategies for the Management of the Coffee Borer Beetle (CBB)
E9	El Salvador	Design of the REDD + Strategy: Ecosystem-Based Mitigation	GIZ (Development aid) and Academia Ministry of Environment and Natural Resources (Public sector)	Environment	Agenda Setting	REDD + Strategy: Ecosystem-Based Mitigation
E10	Bolivia	Organizing the National System for Forestry and Agricultural Innovation	World Bank (Development aid) National Institute of Agricultural and Forestry Innovation (Public sector)	Agriculture – Environment	Implementation	System for Forestry and Agricultural Innovation
E11	Nicaragua	Formulations of National Policy for Mitigation and Adaptation to Climate Change	Research institutions from different sectors Nicaraguan Institute of Territorial Studies (Public sector)	Climate Policy	Policy Design	National Policy for Mitigation and Adaptation to Climate Change
E12	Honduras/Guatemala	Agroclimas – Mesas Técnicas Agroclimáticas Participativas	International Center for Tropical Agriculture – CIAT (Development aid) Ministries of Agriculture (Public Sector)	Agriculture	Implementation	Agro Climate Bulletins
E13	Colombia	Livestock Plus	International Center for Tropical Agriculture – CIAT (Development aid) Ministries of Agriculture (Public Sector)	Agriculture	Implementation	Measurement, reporting and Verification (MRV) Methods to promote mitigation practices in Cattle Raising
E14	Honduras	Resilient Central America Program (ResCA)	International Center for Tropical Agriculture – CIAT (Development aid) Ministries of Agriculture (Public Sector)	Agriculture	Implementation	Integration of Agro climate Information Tools and Climate Smart Agriculture Practices
E15	Peru	Building a Legal Framework for Climate Change in Peru	Sociedad Peruana de Derecho Ambiental (NGO) Congress of Peru	Climate Policy	Policy Design	Guidelines to build the Legal Framework for Climate Change
E16	Argentina	Alliance for Rural Climate Resilience	Development Aid Organizations Ministries of different sectors	Agriculture	Agenda Setting & Policy Design	None
E17	Regional	LATINO ADAPTA – Strengthening science - policy links for the development of climate policies in Latin America	Research Institutions and Academia Ministries and other public institutions	Climate Policy	Monitoring and Evaluation	Policy briefs assessing knowledge communication and use in climate policy
E18	Sub Regional - Andes	Latin American Innovation Network for Potato Improvement and Dissemination – LATIN PAPA	International Potatoes Center – CIP (Development aid) Ministries and other public institutions	Agriculture	Implementation	Methods for Potato Improvement and Dissemination

Table 1. Case Description

However, new theories about science – policy interactions arisen, because of transformations in modern society and government influenced by science and technology. Since the 1960s, issues such as the credibility of scientific information; the role of science and technology in policy and political disputes for power; and how science relates to the embedded values, interests, and needs of society, gained significant attention in this research field (Pregernig, 2014; Sokolovska et al., 2019). As a result, different schools of thought were formed to explain the science – policy interaction.

Within these schools, three models conceptualizing science-policy interaction emerged (Figure 1): 1) a linear model (1960 – 1970) where scientific information is transferred to policy, leading to evidence-based decisions; 2) an interactive model (1970 – 1990) where

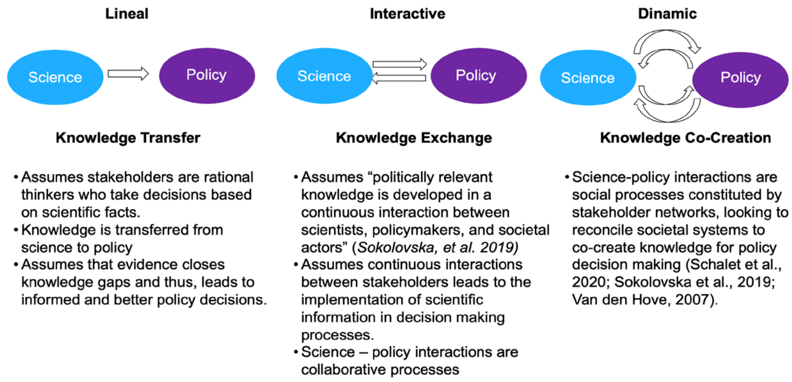
[2] "People [or organizations] whose job it is to move knowledge around and create connections between researchers and their various audiences" (Meyer, 2010)

"politically relevant knowledge is developed in a continuous interaction between scientists, policymakers, and societal actors" (Sokolovska et al., 2019, p. 8); and 3) a dynamic model (since 2000) "marked by the attempt to find an adequate mode of communication [between scientists, policy makers and] different societal actors[, to co-create knowledge] without compromising on quality and political robustness […]" (Sokolovska et al., 2019, p. 8).

Based on existing literature and considering information from the interviews, we consolidated an analytical framework to analyze and systematize lessons learned from science – policy interaction experiences (Figure 2). In this framework, we conceptualize science – policy interactions as social processes (Schalet et al., 2020; Van den Hove, 2007) that intertwine different stakeholder networks (scientific community and policy community) (Caplan, 1979; Schalet et al., 2020; Van den Hove, 2007). In these processes, stakeholder relationships are dynamic (Court & Young, 2006; Schalet et al., 2020; Van den Hove, 2007) and influenced by differences between social and value systems (Van Enst et al., 2014).

Likewise, it is understood that science – policy interactions mobilize knowledge for decision-making (Schalet et al., 2020; Sokolovska et al., 2019; Van den Hove, 2007). As seen in Figure 1, this process can be linear (Boswell & Smith, 2017; Hutton et al., 2017; Pregernig, 2014; Price, 1981), interactive (Gluckman, 2011; Van den Hove, 2007; Weingart, 1999), or dynamic (Court & Young, 2006; Schalet et al., 2020; Van den Hove, 2007). On the other hand, Science-policy interactions are enabled by science – policy interfaces that take the form of facilitators (Meyer, 2010), participatory processes of knowledge generation (Glucker et al., 2013), and/or boundary organizations (Ryan, 2019). Regardless of their form, these interfaces "encompass relations between scientists and other actors in the policy process, [to facilitate] exchanges, co-evolution, and joint construction of knowledge…" (Van den Hove, 2007. p 807).

On its part, it is expected that knowledge generated in science – policy interactions is used for policy decision making. However, the use of information takes different forms according to stakeholder interests (Hoppe, 2005; Weible, 2008; Weiss, 1979). Information can be used for political and strategic purposes or it can trigger long term learning processes leading to changes in decision-making and policy outcomes (Weible, 2008; Weiss, 1979). These forms depend on how stakeholder relationships evolve within the interaction and on identifying the applicability of knowledge for next users (Dilling & Lemos, 2011; Schalet et al., 2020; Van den Hove, 2007).



Source: Developed by authors based on Boswell y Smith (2017); Hutton et al. (2017); Pregernig (2014)); Sokolovska, et al. (2019); Van den Hove (2007)

Figure 1. Models of Science – Policy Interaction

Finally, the outcome of these interactions is heavily influenced by context conditions (Jasanoff, 2004; Weible, 2008; Weiss, 1979), which are also decisive for their sustainability and for opening opportunities for new interactions.

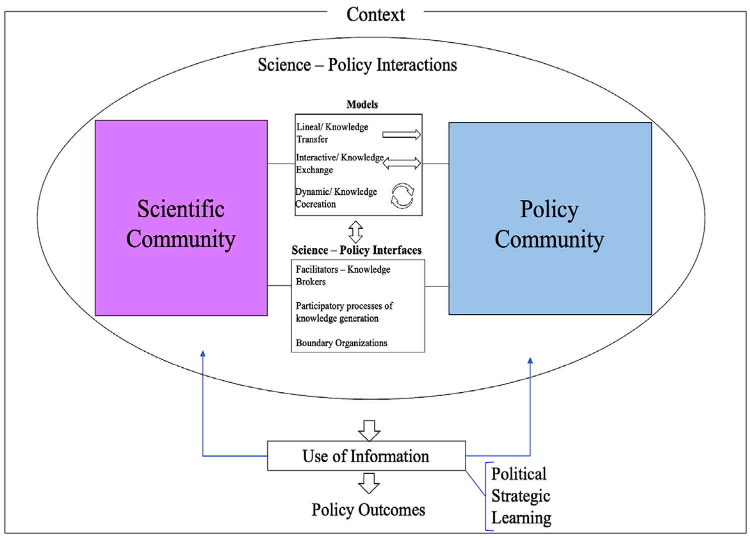


Figure 2. Conceptual framework for the analysis of Science – Policy Interactions

Results

According to the areas of analysis we delimitated through our analytical framework, the 18 cases yielded in identifying factors of science – policy interactions in the Latin American context.

1. Features of Science – Policy Interactions

Informants agree science – policy interactions are how science validates policy, as they streamline information and increase its reach in decision-making processes. The characteristics (figure 3) of these interactions include the supply and demand of knowledge where, ideally, science fulfills knowledge generation (n= 3: E4, E11, E16), problem analysis (n=1: E2) and the feasibility analysis of policy solutions (n=2: E13, E17). On its part, policy generates clear knowledge demand (n=1: E2), enables the use of information (n=2: E8, E10) and facilitates

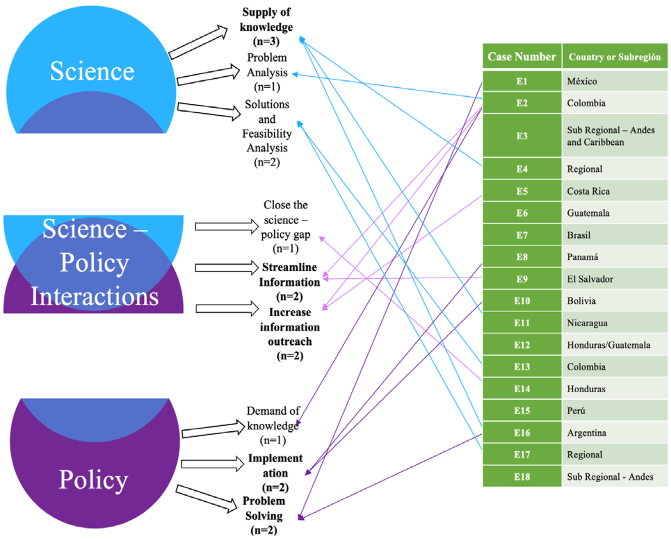


Figure 3. Features of Science – Policy Interactions

problem solving processes (n=2: E1, E16). In climate change policy, these interactions are the way in which climate science reaches policy to create feasible solutions, with objectives and mechanisms for implementation and evaluation, that are well designed and addressed.

2. Limiting factors of science – policy interactions

However, our interviews indicate that, in practice, science-policy interactions have limitations associated to the social systems that characterize policy and scientific communities (Figure 4). Regarding the policy community, scientists highlight that policy processes are hindered by the lack of capacity and political will in public management to push scientific development and stimulate the use of information and evidence in these processes (n=6); by inadequate institutional structures and coordination (n=2: E2, E5); and by the short-term development mindset that shapes public policy in the Latin American context (n=1: E7)

On the other hand, knowledge brokers and community of practice professionals suggested that the scientific community is disengaged from public management and does not relate to the political conditions under which it operates (n=1: E4). This presents issues like supply of knowledge falling short in policy relevance and robustness (n=1: E4) and evidence being presented in a complicated technical language that loses the interest of policy makers (n=1: E17). Interviewees also highlight that is complicated to navigate the high volume of available information. Here, scientist also agree there is disciplinary and methodological fragmentation (n=3: E4, E6, E17) while the applicability of information is not clearly communicated to policy makers and other next users (n=2: E4, E17).

Scientists and practitioners agree other limitations relate to context conditions. Here, science – policy interactions are limited by the incidence of climate change uncertainty on public opinion, which affects the interest of decision-makers in implementing mitigation and adaptation measures (n=3: E4, E6, E7); the differences between the timing of political and research cycles (n=2: E3, E7); and a general poor awareness of the impact of climate change in socio-economic development and the actual focus on the COVID19 pandemic (n=1: E5).

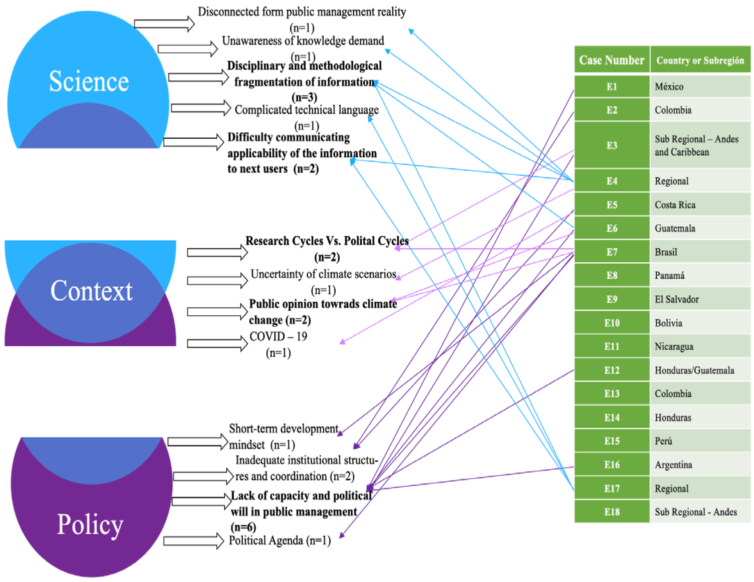


Figure 4. Limiting factors of science – policy interactions

3. Favorable practices to stimulate dynamics of science – policy interactions

Despite the foregoing limitations, interviews revealed a set of actions and practices that are favorable and foster collaborative relationships between science, policy, and other stakeholders. These actions included the generation of 'formal' agreements of collaboration as well as, the implementation of participation, capacity building and communication methods, leading to inclusive processes of knowledge exchange and generation (Figure 4).

Participation and capacity building have been mentioned by both scientists and practitioners, as fundamental means to enable interactions between key stakeholders in almost all the cases (n= 15). Particularly, in order to strengthen institutional capacity and raise awareness about climate change impacts in different development sectors. On its part, the use of adequate language and communication formats that express the use of scientific information, is considered by experts in knowledge brokering and communities of practice, as key to bring next users closer to information and build trust between stakeholders and towards the knowledge they exchange. In this sense, the interviews reveal three key elements of communication: 1) streamline dialogue through interfaces with the capacity to 'smooth' knowledge exchange between scientists and decision makers (n=6); 2) clear messaging of knowledge applicability and user capacity building to receive and interpret information (n=5); and 3) adaptation of technical language to stakeholder needs and capabilities (n=3: E5, E12, E18).

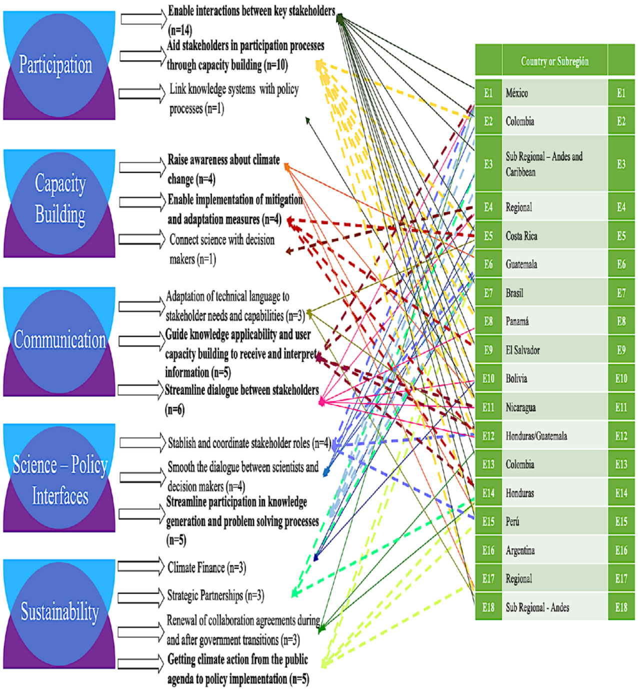


Figure 5. Favorable practices and Dynamics of science – policy interactions

The need to coordinate the dialogue between scientists and decision makers, makes science – policy interfaces a main element in science – policy interactions. Scientists and practitioners consider these interfaces legitimize science – policy collaborations by stablishing and coordinating stakeholder roles (n=4: E1, E6, E12, E14) and enabling their participation in knowledge generation and problem-solving processes (n=5). Among the case studies, we identified different types of interfaces, which concurred with those of our analytical framework. These took the form mainly of facilitators (n=6); but also, of boundary organizations (n=2: E6, E12) and in lesser extent, of participatory processes of knowledge generation (n=1: E1).

However, in the context of each case studied, processes and interfaces of science – policy interaction do not have a framework that ensures their stability. Informants put forward the need to foster the necessary institutional conditions and collaboration arrangements, for science to have an impact in policy and in policy results (Figure 4). They mention that action is needed to improve aspects such as 1) accessibility to climate finance (n=3: E4, E6, E10); 2) diversify and encourage strategic partnerships between scientists and other stakeholders (n=3: E3, E6, E14); 3) the renewal of collaboration agreements during and after government transitions (n=3: E1, E12, E14); and 4) getting climate action from the public agenda to policy implementation (n=5).

The latter stands out, given that our analysis shows that, in most cases, the use of knowledge in policy seems limited to instrumental purposes. Here, scientific knowledge reaches policy, but with not enough influence on secure adequate public resources to further knowledge and have better outreach in policy implementation.

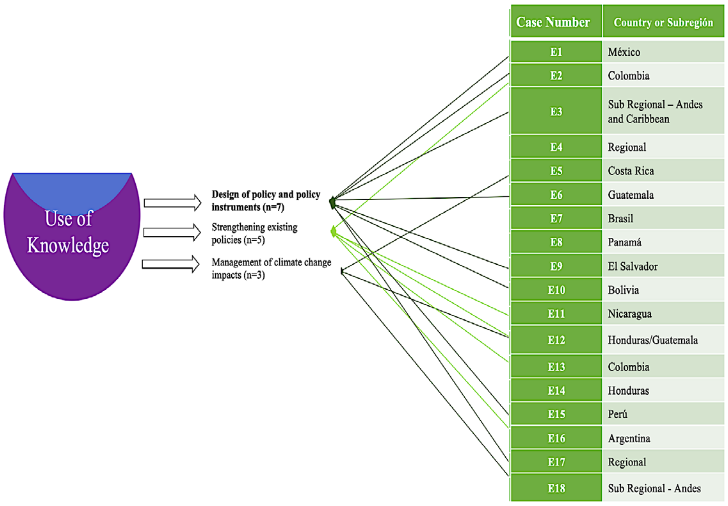


Figure 6. Use of knowledge in policy

4. Use of knowledge in policy

According to our analytical framework, the use of knowledge in policy processes takes different forms. These range from a rational - 'instrumental' and concrete use of knowledge (Weible, 2008), to knowledge being embraced in learning processes that change decision-making over time (Weiss, 1979). The analysis of the cases we documented, revealed that knowledge generated through science – policy interactions was mainly mobilized to produce technical recommendations (Figure 6). These recommendations address the design of policy and policy instruments such as climate change agendas at the national and sectorial levels (n=3: E1, E3, E6) and the formulation of mitigation and adaptation strategies (n=4: E9, E10, E15, E17). Others were oriented to strengthen existing policies, by innovating monitoring and evaluation methods in areas such as greenhouse gas emissions (n=1: E13) and climate impact on ecosystems (n=1: E2). On the other hand, these recommendations also focused on strengthening policy through capacity building at the institutional level (n=3: E11, E12, E16).

However, in some cases, science – policy interactions led to public and private management of climate change impacts. This is evidenced in the consolidation of partnerships to promote the certification of enterprises in carbon footprint management (n=1: E5); in capacity building processes for the implementation of climate smart agriculture practices (n=1: E12); and in working on seed innovation and climate adaptation with small potato producers (n=1: E18).

Conclusions and Perspectives

Our study analyzed 18 experiences of science-policy interaction from countries including Mexico, Colombia, Costa Rica, Guatemala, Brazil, Panama, El Salvador, Bolivia, Nicaragua, Honduras, Peru, and Argentina as well as, from the regional and sub-regional levels. Findings show that science – policy interactions come together through the implementation of participation and capacity building processes, which are articulated through knowledge management and communication. Here communication needs to address stakeholder needs, abilities, and value systems, and have awareness about expressing how knowledge is useful to decision makers. Within the framework of these interactions, science-policy interfaces appear in different forms and are valued as an element that legitimizes science – policy interactions.

Knowledge and knowledge products of these interactions are used in an instrumental manner. They are implemented in policy design processes and as technical inputs for laws or policy implementation instruments, such as mitigation and adaptation agendas at the sectorial level. However, practitioners highlight that for knowledge to have better outreach towards decision - making processes, iterative processes of capacity building where next users gain abilities to interpret and use information, become essential.

In most of the case studies, science – policy interactions do not take place in a stable institutional framework. Indeed, Governments don't offer sufficient institutional and financial structures or frameworks to foster continuity for these collaborations. Additionally, the scientific community seems disconnected from knowledge demand. Information and evidence fall short in policy relevance, are complicated to interpret and ultimately, lose interest of decision makers. Finally, climate change uncertainty still a major challenge for raising stakeholder awareness and impact public opinion. According to knowledge brokering experts, it affects the political will to push forward the climate agenda and thus, favor collaborations between science and policy.

These circumstances call for efforts to innovate and strengthen science – policy interactions. Such efforts can focus on exploring alternative alliances with key stakeholders in the private sector, to generate demand-based products and services for the public sector; and on securing self-sustainability by identifying additional resource alternatives to grant based funding and public procurement. Also, it is necessary to better connect science with policy in a more stable way. This can be achieved by creating institutionalized spaces that articulate supply and demand of knowledge from problem analysis to problem solving and by reforming incentive and accountability systems for both scientific and policy communities. Finally, further research on science – policy may lead to innovative solutions by focusing on 1) discovering pathways to reconcile stakeholder values and interests in a context of climate uncertainty; 2) analyzing ways to discover the political viability of implementing mitigation and adaptation measures and thus, motivate political interest; 3) improving methods to monitor knowledge implementation; and 4) proposing new assessments for the impact of these interactions and of their outputs and services, in policy and policy results.

Recommended Reading

Dinesh, D., Zougmore, R. B., Vervoort, J., Totin, E., Thornton, P. K., Solomon, D., Shirsath, P. B., Pede, V. O., Noriega, I. L., Läderach, P., Körner, J., Hegger, D., Girvetz, E. H., Friis, A. E., Driessen, P. P. J., & Campbell, B. M. (2018). Facilitating change for climate-smart agriculture through science-policy engagement. Sustainability (Switzerland), 10(8). https://doi.org/10.3390/su10082616

Daza Arango P, Le Coq JF. 2021. Interacción Ciencia-Política en el Ámbito de las Políticas de Mitigación y Adaptación al Cambio Climático Experiencias y Lecciones de América Latina. CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS). https://cgspace.cgiar.org/handle/10568/111259

Daza Arango P, Le Coq JF. 2020. Reporte de Actividades del Seminario Virtual Regional "Interacción Ciencia-Política Pública frente a los Desafíos del Cambio Climático: Experiencias y Lecciones Aprendidas para Sistemas Alimentarios Sostenibles en América Latina". Cali, Colombia: CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS). https://hdl.handle.net/10568/110562.

Hutton, J., Ryan, M., Montana, J., & Gallagher, L. (2017). the Science, Policy and Practice Interface Synthesis Paper.

Pregernig, M. (2014). Framings of science-policy interactions and their discursive and institutional effects: examples from conservation and environmental policy. Biodiversity and Conservation, 23(14), 3615–3639. https://doi.org/10.1007/s10531-014-0806-3

Schalet, A. T., Tropp, L. R., & Troy, L. M. (2020). Making Research Usable Beyond Academic Circles: A Relational Model of Public Engagement. Analyses of Social Issues and Public Policy. https://doi.org/10.1111/asap.12204

Sokolovska, N., Fecher, B., & Wagner, G. G. (2019). Communication on the science-policy interface: An overview of conceptual models. Publications, 7(4). https://doi.org/10.3390/publications7040064

UNESCO. (2016). Toma de decisiones y cambio climático: acercando la ciencia y la política en América Latina y el Caribe

Van den Hove, S. (2007). A rationale for science-policy interfaces. Futures, 39(7), 807–826. https://doi.org/10.1016/j.futures.2006.12.004

Van Kerkhoff, L., & Lebel, L. (2015). Coproductive capacities: Rethinking science-governance relations in a diverse world. ECOLOGY AND SOCIETY, 20, 14. https://doi.org/10.5751/ES-07188-200114

Vermeulen, Sonja & Campbell, Bruce Morgan. (2015). Ten principles for effective AR4D programs.

References

Barnechea García, M., & Morgan Tirado, M. (2010). La sistematización de experiencias: producción de conocimientos desde y para la práctica. Tendencias & Retos, 15, 97–107.

Boswell, C., & Smith, K. (2017). Rethinking policy “impact”: Four models of research-policy relations. Palgrave Communications, 3(1). https://doi.org/10.1057/s41599-017-0042-z

Cáceres, P. (2003). Análisis de contenido: una alternativa metodológica alcanzable. Psicoperspectivas. Psicoperspectivas, 2(1), 53–82. https://doi.org/10.5027/psicoperspectivas-vol2-issue1-fulltext-3

Campbell, & Vermeulen. (2015). Ten principles for effective AR4D programs. https://www.researchgate.net/publication/309410406

Caplan, N. (1979). The Two-Communities Theory and Knowledge Utilization. American Behavioral Scientist, 22. https://doi.org/10.1177/000276427902200308

Court, J., & Young, J. (2006). Bridging Research and Policy: Insights From 50 Case Studies. Evidence & Policy: A Journal of Research, Debate and Practice, 2, 439–462. https://doi.org/10.1332/174426406778881764

Dilling, L., & Lemos, M. C. (2011). Creating usable science: Opportunities and constraints for climate knowledge use and their implications for science policy. Global Environmental Change, 21(2), 680–689. https://doi.org/10.1016/j.gloenvcha.2010.11.006

Glucker, A., Driessen, P. P. J., Kolhoff, A., & Runhaar, H. (2013). Public participation in environmental impact assessment: Why, who and how? Environmental Impact Assessment Review, 43, 104–111. https://doi.org/10.1016/j.eiar.2013.06.003

Gluckman, P. (2011). Towards better use of evidence in policy formation: A discussion paper. Office of the Prime Minister’s Science Advisory Committee, April, 1–17. www.pmcsa.org.nz

Hoppe, R. (2005). Rethinking the science-policy nexus: From knowledge utilization and science technology studies to types of boundary arrangements. Poiesis & Praxis, 3, 199–215. https://doi.org/10.1007/s10202-005-0074-0

Hutton, J., Ryan, M., Montana, J., & Gallagher, L. (2017). the Science, Policy and Practice Interface Synthesis Paper.

Jasanoff, S. (2004). States of Knowledge. Routledge. https://doi.org/10.4324/9780203413845

Meyer, M. (2010). The Rise of the Knowledge Broker. Science Communication - SCI COMMUN, 32, 118–127. https://doi.org/10.1177/1075547009359797

Pregernig, M. (2014). Framings of science-policy interactions and their discursive and institutional effects: examples from conservation and environmental policy. Biodiversity and Conservation, 23(14), 3615–3639. https://doi.org/10.1007/s10531-014-0806-3

Price, D. (1981). The spectrum from truth to power. In Science, technology, and national policy (pp. 95–131). Cornell University Press.

Ryan, D. (2019). Relación Ciencia-Política : Mecanismos e Instituciones de Vinculación en Temas de Adaptación al Cambio Climático. Resumen ejecutivo Introducción Mecanismos e instituciones “ puente .” 1–8.

Schalet, A. T., Tropp, L. R., & Troy, L. M. (2020). Making Research Usable Beyond Academic Circles: A Relational Model of Public Engagement. Analyses of Social Issues and Public Policy. https://doi.org/10.1111/asap.12204

Sokolovska, N., Fecher, B., & Wagner, G. G. (2019). Communication on the science-policy interface: An overview of conceptual models. Publications, 7(4). https://doi.org/10.3390/publications7040064

Van den Hove, S. (2007). A rationale for science-policy interfaces. Futures, 39(7), 807–826. https://doi.org/10.1016/j.futures.2006.12.004

Van Enst, W. I., Driessen, P. P. J., & Runhaar, H. A. C. (2014). Towards productive science-policy interfaces: A research agenda. Journal of Environmental Assessment Policy and Management, 16(1). https://doi.org/10.1142/S1464333214500070

Weible, C. M. (2008). Expert-based information and policy subsystems: A review and synthesis. In Policy Studies Journal (Vol. 36, Issue 4, pp. 615–635). https://doi.org/10.1111/j.1541-0072.2008.00287.x

Weingart, P. (1999). Scientific expertise and political accountability: Paradoxes of science in politics. Science & Public Policy - SCI PUBLIC POLICY, 26, 151–161. https://doi.org/10.3152/147154399781782437

Weiss, C. H. (1979). The Many Meanings of Research Utilization. Public Administration Review, 39(5). https://doi.org/10.2307/3109916

This document has been produced within the framework of the project "Shaping equitable climate change policies for resilient food systems across Central America and the Caribbean"" (FP1 LAM) of the CCAFS program in Latin America. The opinions expressed in this document are those of the authors and are not necessarily endorsed by CCAFS, the Alliance Biodiversity – CIAT, or any of the funding organizations.
Paola Andrea Daza (p.daza@cgiar.org)
Is master in International Development and Research Associate at the Alliance – Biodiversity – CIAT, for the Flagship Program 1 (FP1) of CCAFS Latin America
Jean-François Le Coq (jf.lecoq@cgiar.org)
Is PhD in agro-economy and HdR in ecological economics. Researcher for CIRAD and associate researcher at the Alliance – Biodiversity – CIAT. Leader of the Flagship Program 1 (FP1) of CCAFS in Latin America