



INTEGRATING CLIMATE CHANGE KNOWLEDGE WITH POLITICS AND SOCIETY. FROM TRANSLATION OF EXPERT KNOWLEDGE TO COLLECTIVE CONSTRUCTION OF PRACTICAL RESPONSES

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KEY POINTS

- ✔ Effective communication about climate change adaptation requires not only providing scientific evidence, climate models, and risk forecasting, but also practical knowledge related to experiences of resilience and risk prevention in threatened territories.
- ✔ Practical knowledge developed by communities and producers contributes to risk prevention, and therefore should be collected, disseminated, and adapted to other contexts, since it is a relevant resource for decision-making during climate change adaptation.

Executive summary

The problems with the communication of relevant knowledge related to climate change adaptation are usually approached with a scientific bias in the search for descriptive and accurate knowledge, focused on providing information and awareness to the population instead of offering practical solutions. This policy brief presents proposals to overcome these deficits in three main axes: generating spaces and practices for co-creation between science and politics, incorporating civil society actors and the communities' experience in the field; in addition to the translation of specialized knowledge, a survey of practical and traditional knowledge in how to face climatic challenges and extreme events is required; communication of practical knowledge should be added to the provision of information on risk scenarios in order to facilitate the consideration of opportunities for a change and the diffusion of solutions.

Resumen ejecutivo

Los problemas de comunicación del conocimiento relevante en materia de adaptación al cambio climático suelen abordarse con un sesgo científico que se basa más en la búsqueda de conocimiento descriptivo y certero, en brindar información y concientizar a la población; y menos en la difusión de soluciones prácticas. En este policy brief se ofrecen propuestas para superar estos déficits en tres ejes principales. El primero consiste en generar espacios y prácticas de co-creación entre ciencia y política que incorporen actores de la sociedad civil y la experiencia de comunidades en terreno. En segundo lugar, además de los procesos de traducción de conocimiento especializado, se requiere relevar saberes prácticos y tradicionales sobre el modo de enfrentar desafíos climáticos y eventos extremos. Por último, a la provisión de información sobre escenarios de riesgo se le debe sumar la comunicación de conocimiento práctico que facilite la ponderación de oportunidades de cambio y la difusión de soluciones.

Introduction

Based on the diagnosis of the *Latino Adapta Proyect. Strengthening the links between science and governments for the development of climate-related policies in Latin America* (1), regarding the Communication of the knowledge about Climate Change adaptation, there are several problems concerning the knowledge gap between specialists and decision-makers. These were mainly connected to issues with translation of knowledge and the coordination of priorities and incentives. Nevertheless, in our opinion there are other gaps, which are equally important, and that have to do with a specific bias on how the problem is raised (excessive scientism) or on how to deal with its solutions (providing information and raising awareness instead of acquiring practical experiences and implementing alternative mechanisms.)

Three big problems have been identified regarding the diagnosis about communication of knowledge related to climate change adaptation, and the following general proposals and specific recommendations are suggested:

1) The first problem that decision-makers and civil society experts in climate change adaptation have pointed out is the complexity of translation of the knowledge for developing co-creation processes between science and politics. The great majority of the existing research focuses on the climate system, and very few deal with the impacts and vulnerabilities of specific systems, either productive, social or environmental (2). To this effect, the priorities, needs, and temporalities of decision-makers and experts would differ significantly. Furthermore, mitigation allows for a greater communicability (efforts and achievements are more visible and concrete) with regards to adaptation (more diffuse and long-term, being more preventive). As a result, it is difficult to establish priority areas where to allocate resources and efforts in the adaptation policies.

2) Another problem is the attitude shared by specialists and decision-makers that demand and promote greater expertise. This bias usually ignores or at least devalues the practical and traditional knowledge that stems from the experiences of communities and producers that deal on a daily basis with the impact of climate change and variability in their territories and productive sectors. As a consequence, valuable knowledge that could be useful in other contexts, regardless of the specific application, is lost.

3) There is a third issue that arises from a preference towards a type of knowledge and communication focused on providing information, models and catastrophic scenarios, with little practical experiences in problem resolution and opportunities for change (3). According to the traditional approach of Environmental Education, learning and sustainability is achieved by raising awareness and providing the appropriate information. However, in many cases the process is the other way round: the contexts and infrastructure in which the involved parties and the beneficiaries move must be modified first and then the justifications and motivations will emerge on their own (4). Therefore, if the knowledge does not come from the involvement and planning of users, the information will be less useful and relevant for decision-makers and indirectly for the ultimate beneficiaries.

Proposal

Given the three main deficits in the communication of knowledge of climate change adaptation, the following recommendations are made:

1) Regarding the first deficit, the intention is to stimulate and test spaces of dialogue and confluence between institutions and relevant actors in science and politics in a flexible and dynamic way, but without losing regularity. In addition to promoting the translation of expert knowledge, these environments should encourage intersectoriality and go through the different levels of public policy. They should also encourage cultural and institutional innovation as well as being open to internalization (responsive to comparison and benchmarking —comparative search for the best practices— with other organizational models between science and politics).

Of course the translation of expert knowledge is crucial, but so is the possibility for decision-makers to express their demands and needs to specialized knowledge generators. Therefore, stimulating spaces and practices for co-creation and translation of adaptation knowledge between science and politics, requires incorporating civil society actors and the communities' experience for them to be able to express their own interests and demands. The needs or knowledge priorities should be defined collaboratively,

since it is a decision that should not be taken autonomously, neither by the scientific sector nor by the public policy sector.

2) In addition to the translation processes, an assessment of the practical and traditional knowledge about how to deal with climate challenges and extreme events should be carried out. This enables a two-fold movement: *top-down* in terms of scientific knowledge translation for decision-makers, and *bottom-up*, from communities towards those decision-makers (public or private).

The second axis is outlining mechanisms for the collection and systematization of practical and diffused knowledge, which is sometimes transmitted orally, in order to have a clear course of action when dealing with climate change challenges, such as extreme phenomena, catastrophes and long-term ecosystem alterations. Communities and producers' knowhow contributes to risk prevention, and therefore must be collected, shared, and adapted to different contexts, since it is extremely relevant for the decision-making process of climate change adaptation.

3) A revision of the type of knowledge that is disseminated (or should be disseminated) is necessary, not only by decision-makers but also to develop effective strategies for communicating information on climate change adaptation. This requires the combination of communicating scientific evidence, climate models and risk preventions, as well as practical knowledge concerning experiences of resilience and risk prevention in threatened areas. «We need ways to communicate climate change which do not limit to describing it, but also seek to develop ethical and practical alternatives» (5). Communicating effectively about climate change adaptation requires establishing different types of audiences, register and discursive genres, media and contents. It is essential to combine awareness with the promotion of changes in behavior without causing extreme fear. The provision of information on risk scenarios must be combined with the weighting of exchange opportunities and the dissemination of solutions. The practical knowledge that should be disseminated is more focused on technical and practical competences and less on information and moral and regulative convictions.

Recommendations

For axis 1, which refers to the co-creation of knowledge between science and politics, the translation of expert knowledge to decision makers, and also to the way in which the needs of the latter are collected and perceived by researchers and specialists, at least three fundamental issues are recommended.

First, develop platforms and spaces for dialogue that enable the sharing of attainable expert knowledge, for example, in scenario building, vulnerability and risk maps, climate models which use accessible and interactive formats, but that also include traditional language and media. The objective is not only «simplifying» expert knowledge, but also opening «black boxes» to the world and other opinions and perspectives (6). Communication could be differentiated by socioeconomic level, education and gender, since in many cases the «Green responses» will create higher demands on vulnerable populations which are already dealing with their own survival (7).

Second, co-creation aims at reducing asymmetries between those involved. The term *capacity-building* is usually employed, but more precisely it has to do with professionalization and training. It is important to strive for the stability of professional positions and the maintenance of initiatives and programs that enable the preservation of institutional memory. There is much to do, especially at a sub national level. Having stable staff members who use the same language makes «translation»

efforts less necessary. However, to avoid scientific bias it is important to highlight that training should not be conducted exclusively by academic experts, but also by the so-called bridge-organizations and people in civil society, which also have consolidated knowledge about the subject, and bring together or involve several actors, and are responsive to the collaboration between science and politics.

Third, it is not only that specialized knowledge should be made more accessible and simple, but that decision makers also have their valid knowledge and their own rationality. They should be able to express their demands to those producing expert knowledge, establishing the elements required for certain decisions, defining priority areas, applying vulnerability indicators, etc.

This requires aligning the majority of scientific research policies with strategic and priority pillars at a country and regional level, such as adaptation to climate change. How can this be achieved? Firstly, through a greater collaboration between those responsible for Adaptation (generally in the Environment Area) with the Ministry or Agencies of Science, Technology and Innovation. Secondly, by creating mechanisms that assess the performance of scientists who outdo or exceed the entropic evaluation of disciplinary specialization (where other peers and specialized journals validate the achievements), and incorporate performance evaluation criteria that generate practical and applied knowledge. This is more than simply

transferring; the idea that a certain type of knowledge is superior to another, and therefore must be made simpler or move to the undeveloped area. Thirdly, by promoting funds and research competitions that encourage co-creation (for example, the requirement of having partners in public administration, in civil society or the private world) specific to climate change, or even better, in Global Change, as a more comprehensive topic that enables synergies between relevant issues.

Several countries are on the right track, such as Costa Rica's SINAMECC (National Metrics System for Climate Change), a climate change metric system for data collection, monitoring and reporting; the development of interactive maps for climate change risk in Argentina's SIMARCC (Climate Change Risk Map System); the Graceful program, a European Union initiative for the creation of monitoring and evaluation tools, designed to facilitate the decision-making process, in order to bridge the gap between science and politics. Even though digital formats and communication through social media and internet can be overused; not everyone has access to or uses these media for such purposes and, in certain areas, more classic formats and media such as community radios, information brochures and face-to-face meetings / workshops continue to be important.

Regarding the second axis, related to the recovery and learning that comes from practical, tactical and traditional knowledge, also known as «lay», it is key to develop mechanisms that collect resilience and adaptation practices, since otherwise they would be lost, instead of being shared in other areas where they can also be useful. The challenge that this presents has to do with upscaling; in other words, how the local and dispersed knowledge increases and improves and is later generalized and incorporated to public policies and the broadest collective decisions.¹

A national repository would be a simple initiative to slowly collect this knowledge. Nevertheless, a slightly more ambitious idea, which does not require huge efforts, is setting up national competition for good practices in climate change adaptation, that rewards neighbourhood and community organization initiatives. In this way, some money or inputs could be allocated to their maintenance over time and to support its dissemination in other contexts. One of the outgoing examples, which not only gathers dispersed knowledge but also creates policies and legislation (hierarchical *upscaling*), is the Chilean Network of Municipalities, which brings together local initiatives, and consequently influences national policies (suitable in countries with limited intermediate structures of government).

Regarding the inclusion of other types of knowledge and overcoming a catastrophist communication style, the recommendation is to segment communication by productive sectors, as well as informing and identifying not only risk scenarios but also opportunities. In some productive sectors, climatic transformations expand cultivation areas and that results in an increase of precipitations. As stated above, in some situations it is better to focus efforts on modifying infrastructure and making instruments of change available. Moreover, the reasons and values that justify and promote them must be disseminated before, instead of going the opposite and traditional way suggested by Environmental Education, that is, raising awareness through information, convincing through accountability, and changing by persuasion.

One way to combine the communication of probable scenarios and trends with the weighting of opportunities for change could be through the creation of hybrid forums between diverse actors (9), where experts do not necessarily hold the monopoly of rationality and there are spaces for a dialogic or deliberative democracy. According to these authors, forums enable the shift from «limited» research to «free» research, open to the world and to collective learning. Consequently, this would create spaces for the co-creation of adaptation strategies and integration of experts, where forecasting (prediction of probable scenarios) and *backcasting* (investigation of desirable scenarios) would be combined. In this way, the future is not planned linearly, but based on a desirable perspective to which changes are being made in order to make it more likely. Collective learning focuses less in repeating the past and more in anticipation –and using the future in the present- to strengthen adaptive capacities (10, 11). These environments should not have a national approach, due to its broadness and complexity, but should be limited to specific territories. Thus, they can help to define priority areas in adaptation plans. As long as they involve different actors, they will bring about the dialogue between different rationalities (scientific, politic and that of those involved and potentially affected) facilitating crossed accountability and justification of decisions and interests.

The last recommendation focuses on the scale of adaptation programs. Trends seem to determine the development of national plans which extend to productive sectors and later to smaller regions and administrative units. This is clearly a very commendable and necessary effort. However, it can be questioned whether this jurisdictional disaggregation is the most suitable for reducing territorial vulnerability to socio-environmental risks. Considering this trend, each municipality, however small, should be able to develop its own adaptation plan. On the other hand, the scale unit that should be

¹ See Policy Brief "Territorial Knowledge for Decision-Making at a local level in Latin America: System of Local Climate Observatories for Information and Action".

disaggregated would be the ecosystems, rather than the administrative jurisdictions. In this way, priority areas, expert and practical knowledge, and the forecasting of probable and desirable scenarios, are connected to the specific problems of a natural, particular environment and to its productive activities, as well as to the value of the unique cultural heritage of that territory.

It is also important to consider that ecosystems do not end at national borders, but rather have a transnational dimension. To what extent are provincial plans the most appropriate mechanisms for dealing with adaptation plans for ecosystems such as the Chaco, the Puna grassland, the Andean-Patagonian Forest, the Pantanal or the Caribbean mangroves?

Diagnostic study, proposals and recommendations to improve the integration of knowledge on adaptation

Diagnosis	Proposal	Recommendations
Difficulties in translation between expert knowledge and decision-makers	Promote spaces and practices for co-creation and knowledge translation, involving civil society actors and community experience, reducing information asymmetries.	<ol style="list-style-type: none"> 1) Develop dialogue platforms and spaces in accessible and interactive formats, which also include more traditional languages and media. 2) Professionalization and training of staff members at a local level. 3) Promote funds and research competitions that encourage creations
Preference towards expert knowledge with regards to practical and traditional knowledge	Assess practical and traditional knowledge for facing climate challenges and extreme events.	Collection of resilience and adaptation practices: repository, national competition, upscaling.
Communication focused on providing information, models and catastrophic scenarios	Include the communication of practical knowledge related to resilience and risk prevention experiences in threatened territories.	<ul style="list-style-type: none"> - Audience segmentation - Create hybrid forums with different actors - Combine forecasting and backcasting

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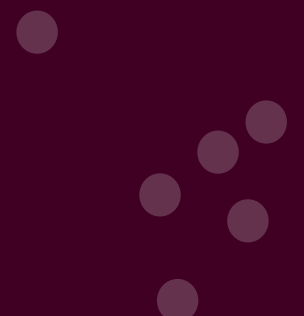
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