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SCOPE - Results

An integrated assessment frame as science policy interface for decisions on (environment-related) risks

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Precautionary, socio-technical, across policies domains, comparative, alternatives, evaluation, communication

CONTEXT

This research report has its origin in the notion that classical risk assessment paradigms no longer suffice to deal with complex, uncertain and ambiguous risks. Risk assessment was developed as a scientific tool to tackle uncertain consequences of human activities by organizing, evaluating, integrating and presenting scientific information to inform decision-making. Over the years, this type of risk assessment has proved effective in protecting public health and the environment from major environmental hazards with high relative risks. In the modern 'risk society' classical risk assessment fails to handle complex risks characterized by radical uncertainty and a plurality of legitimate perspectives and values. Public authorities have to deal with issues/risks were facts are uncertain and values are contested. To answer to the increased demands of policymakers and the public for guidance on risk management new processes for the governance of these risks need to be developed.

Weberian bureaucratic structures and forms of cooperation are working in a logic of specialisation of work, where distribution of information and knowledge, structures of decisions and allocation of responsibilities are organised ab initio in a stable organisational frame. Such a structure is not capable of resisting to the emergence of new risks which are often not identified as such at start and require a more integrative form of assessment, integrating inter-disciplinary collaboration on a specific policy problem that is complex, uncertain, perhaps unlimited in temporal and spatial scale, and interlinked with other phenomena.

If the frame of reflexivity (Beck, 2003) is adopted, we thus have to recognise that a global mastering of these risks is not possible. What is now requested is the settlement of conditions for another type of **open debate.** Experiments in new forms of public participation in the management of technological developments (like e.g. citizen panels on long-term storage of nuclear waste[1], or on cars and health[1]) already inspired the public administrators in their search for new procedural forms of decision making in areas of uncertainty.

[1] King Baudoin foundation, 1/2/2010
[2] Auto en Gezondheid, IST, may 2007
http://www.samenlevingentechnologie.be

For a certain category of risks inclusion of the public, next to industrial stakeholders, organised environmental interest groups and governmental agencies and administrations is warranted, to integrate different opinions and values and to develop adequate policies. **Network governance** should be developed, where stakeholders are invited to speak up and where power structures are reconsidered and flattened. Here the authorities are recommended to exercise their capacities not as a centre of knowledge and top-down decision, but as a **facilitator** for communication and collaboration within networking structures, mobilising numerous experts and stakeholders, including the population itself (Gilbert, 2002), to develop new options which are socially acceptable and technically efficient (Fallon *et al*., 2008a & b). This requires a different mindset where the plurality of frames and fluidity of boundaries; the need for contextualisation; the construction of unstable temporary networks, the plurality of rationalities and the inherent uncertainties, social and technical (Callon, 1986) of the issues considered. As uncertainties are recognised, scientists are not anymore expected to close the controversy but rather to contribute to the technical quality of the process.

The public decision-making process (DMP) should be designed to organise the conditions for an optimal tradeoff between scientific soundness and social acceptability of decisions, in a context where the precautionary principle is relevant. The key issue, framing or "structuring the research questions", is a method for deciding how to manage scientific uncertainty. From literature review and past studies, we posit that a better quality DMP could be achieved by using tools for an integrated and comparative risk assessment and management. These approaches rely on interdisciplinary risk assessment – relevant soft and hard sciences are engaged together into the knowledge production process rather than mobilized side by side. Concretely, it involves designing the steps or sequences of the process and selecting/developing/adapting risk assessment and management tools.

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More specific, within the environment and health arena there is limited experience with these new concepts of integrated assessments (Briggs, 2008). Therefore case studies on various environment and health issues were performed to evaluate current integrated risk assessment practices, multi-level precautionary approaches and communication of complex risks. Different tools as Delphi, scenario workshop, *etc*. were used to analyse the issues at stake.

OBJECTIVES AND METHOD

The development of an **integrated approach** in risk assessment requires cooperation across policy domains and hierarchical structures. In the field of **air pollution** a science-policy workshop confirmed that in the domain of air quality policy, public servants communicate well with researchers from scientific institutions. The protagonists in Flemish air quality policy have a common scientific background and are technical experts. This observation puts into question a common discourse postulating that there is a 'communication problem' or 'gap' between 'researchers' and 'policymakers'. This discourse as a description of a state of affairs does not suit empirical reality, and needs to be reformulated in more precise terms. If there is a communication gap, it is not to be situated between public administration ('policymakers') and researchers ('scientists'), who share the same overall concerns, but between public administrations and ministerial cabinets.

The analysis of risks related to **electromagnetic fields** (EMF), showed how the precautionary principle is **reinterpreted differently at each different political level** (European, Belgian, Wallonia, Regional) in order to better integrate the local institutional and political environment. In most cases, when this principle is put at the foreground, its use is mainly symbolic and incantatory. When implementing policies it does not seem to respond to some precautionary approach, but rather to the institutional dynamics which characterise each political level. We observed the reinforcement of the European role in the field of health & environment: in attempts to underline institutional cooperation at the federal level in Belgium and to reinforce the authority of the regional government on the Walloon territory. From this case study it is learnt that the new deliberative spaces to be developed should not be embedded in the dominant institutional structures.

A structure such as promoted in the wake of "**Technology assessment**" (Delvenne, 2011) is capable of conciliating production of knowledge and uncertainties (the science pole) with the plurality of social perceptions (the civic pole) and the specific dynamics of the relevant polity (the political pole).

New deliberative spaces should be capable of developing the basis for integrated and comparative approach for emerging issues with due attention to its political and institutional dimensions, while maintaining enough distance with the dominant frames and logics. Recently the Flemish administration on Environment, Nature & Energy proposed a note (framework) to deal with uncertain risks. The proposed framework will be tested in a pilot study for potential risks related to non-ionising electro-magnetic radiation, and can later be extended to other risks.

In a case study on **Bisphenol-A** (BPA), multi-level political **communication** was analysed. Political decisions were taken without socio-technical debate (Callon, 1986). The BPA issue was not very high on the social or political agenda in Belgium. There was no crisis, no strong pressure form NGO's. The question was managed first by the European authorities (EFSA & European Commission). The Belgian institutions were waiting for the European position. As the political decision did not encounter a strong contestation from the industry, this was an easy step for the political authorities, in Belgium and at the European level, to symbolically address the issue while avoiding considering the real uncertainties. When the decision was taken to ban the use of BPA in polycarbonate baby bottles, it was a political decision taken with the support of the scientific bodies (Superior Health Council) but without being embedded in any social debate (what about risks related to the chemicals which may substitute BPA?). It meant that the whole of uncertainties on the extent of risks related to the multiple exposures to different endocrine disruptors could not be put at the foreground in a public socio-technical debate.

MAIN CONCLUSIONS/RECOMMANDATIONS

These case studies on the interplay with science, policy and stakeholders, on the framing of an environmental health policy problem, and on the management of complex risks (air pollution, EMF, BPA) contribute to recommendations on their governance. The question then becomes: is it possible to organize a precautionary decision making process to deal with different legitimate frames and the necessary trade-offs when considering policy alternatives? Concretely it is advised to pay attention to the role of a focal point in the process, potentially taken up by public administrations, to the co-production, availability and organisation of knowledge and information, and to the progress of the process.

Above all it is important to set up a **platform** for issue framing and problem definition to highlight key factors that need to be assessed:

- Examine the policy and stakeholder **learning network** related to a specific issue, with special attention to policy domains that are affected by or are affecting the environmental and health issue at stake. Specify who has interests in the issue and who should be involved. An efficient stakeholder network analysis is important for the further progress of the DMP. define who is allowed to take part in the process across different policy areas

- Examine the **information database** before setting up a more integrative approach, both from a scientific (including uncertainties) and technical (alternatives, CBA analysis) point of view and from the side of concerned stakeholders. Policy makers acquire information from different inputs from science, stakeholder organisations, socio-economic actors and the public at large, as well as from administrations and staff members, and are conscious of the structural and constitutional constraints. It is clear that a **balanced process of information gathering** that is transparent, contributes to better decision making.

- Initiate and manage the process: find out who will carry the process, set up a series of **interactions** between administrations, between administrations and cabinets, between administrations and research, between administrations, research and the public. Usable and meaningful available information on the issue should be communicated clearly to all stakeholders. It is innovative to look at how stakeholders **increase their knowledge** through different inputs and through communication, information and interaction.

- Iterate where needed: information gained in one dialogue should be fed back into other *fora*. An equilibrium between acceptability – tolerability – uncertainty should be established.

- Move forward / conclude. In the total policy cycle the conclusion or decision may be revised, when (1) monitoring of implementation and following evaluation is considered as negative; (2) new knowledge / experience / issues have to take into account.

- Ensure an efficient and socially appropriate allocation of the resources and an adequate management of residual risks.

Last but not least, in a precautionary approach it is also required, to contribute to the public trust in the decision making process and to construct social acceptance of the final decision. Generally, a precautionary decision making process should be considered as a double-pronged learning dynamics: on one side, the authorities are required to better take into account the multiple frames which abound in our pluralist societies when organising the conditions of political trade-offs for the governance of risks. On the other side, the citizens should have the possibility to, not only understand, but also adopt the decision and its consequences and to conform to its implementation. It is important to develop specific communication processes to successfully implement these two faces of a precautionary approach in the governance of risks, while ensuring this dual learning process. New **procedures** are currently developed which could support the communication dynamics for promoting multiple frames and comparing openly different alternatives (*e.g.* **open process workshop; atelier scenarios; Delphi**).

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