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Community Research Contributing to Effective Risk Governance

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Abstract

Research in the field of risk assessment and management has had a prominent role in the Commission's nuclear research programme, especially in the area of radiation protection. In the 1980's, the research had a largely technical focus. Through the 1990's, this focus shifted and greater attention was given to broader, less technical, issues, in particular those concerned with risk perception and communication, risk governance and the role of public participation in the process. This trend will continue within the Commission's 6th Framework Programme (FP6) given the increasing recognition of the importance of these broader socio-economic issues for decision making related to both nuclear and other technologies.

The paper summarises the main outcomes of Commission sponsored research in the above areas, how this has influenced research currently being carried out in the 5th Framework Programme (FP5) and that being considered for inclusion in FP6. Two aspects are given particular attention:

- firstly, research into risk governance (both in the nuclear field in general and the waste management area in particular), especially the importance of social trust and participation of all relevant stakeholders in terms of achieving efficient and acceptable decisions when addressing complex, contentious issues
- secondly, research into the social and psychological factors that influenced the efficacy and acceptance of measures taken to mitigate the long term impact of areas in the Former Soviet Union contaminated as a result of the Chernobyl accident. There are important lessons here for the management of any future accident that may affect Europe, especially the need for those affected locally to have a role in the decision process and to be able to exercise at least partial control over their own welfare

While this research was largely carried out in a "nuclear" context, its findings are more generally applicable.

1. Introduction

The issue of governance¹ is currently high on the political agenda in many countries and in several international organisations. This reflects the increasing pressures from society at large for more transparent and democratic decision making processes which enable more effective public participation. Responding to these emerging needs will not be easy. Failure to do so adequately could, however, be costly both in social and economic terms. In addition to many national initiatives on governance two supra-national activities are worthy of note. Firstly, the European Commission is in the process of preparing [1] a White Paper on European Governance in the full recognition that, if Europe is to consolidate its efforts to achieve closer integration, it will need institutions that are responsible, transparent, efficient and open to new forms of democratic governance. The White Paper will seek to bring together various proposals in a coherent manner with a view to ensuring that the institutions, and not just the European Commission, function more clearly, more responsibly and in a more decentralised way. Secondly, the OECD launched a project in 1999 on "Strengthening Government-Citizen Connections" which aims to support government efforts to strengthen public participation, transparency and democratic accountability and, ultimately, policy effectiveness [2].

In a narrower context, much attention is also being given to the role of science in governance, in particular how this has changed and may need to change further in response to emerging socio-political needs. Several factors have contributed to these changes, not least the increasing pace of technological innovation much of which raises new social and ethical issues and concerns (eg, genetically modified organisms, human genome research), public health controversies (eg, BSE), open and public disagreements between scientists on topical issues and the wider recognition that science is not wholly objective and is often value laden. These have contributed to increasing public "mistrust" which has led in turn to science having less influence than before in the wider governance process. Science can never be the sole determinant of decisions. However, it is important for it to be duly weighed along with other considerations. To ensure that this occurs, changes will be needed in how science is taught, conducted and communicated, both in public and political contexts. This represents a major challenge for the scientific and research communities and one that must not be shunned.

The Commission has taken a number of initiatives in this latter context, in particular it has sponsored a workshop and conference [3, 4] that have contributed much to the elucidation of the issues facing science in ensuring its proper role in the governance

¹ Governance is understood here as the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated and co-operative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest

process and how these may be addressed. The increasing importance attached to these issues by the Commission is exemplified by structural changes within DG Research and in the proposed content of the 6th Research Framework Programme (FP6). Two (out of twelve) of the new Directorates in DG Research are now focused on “science and society” and “socio-economic research”. The Commission’s proposal for FP6 contains important programme items on “citizens and governance” and “science and society” [5]. In combination with national initiatives, Commission research in this area can be expected to provide a sound basis for effectively progressing this important issue.

Research on science and governance, or more specifically, risk governance has featured in previous and on-going Framework Programmes. This research has been, and continues to be, carried out separately in many different thematic programmes or (in FP5) key actions. Arrangements are in place for co-ordination across thematic areas but, inevitably, the coherence of the research and its overall impact are less than would otherwise result from a fully integrated programme devoted solely to this issue. The proposed content and structure of FP6, together with organisational changes in DG Research, should enable this research to be better focused in future and have a greater overall impact.

Significant research pertaining to risk governance was and is being carried out within the Commission’s Euratom programme in FP4 and FP5 and is the focus of the remainder of this paper.

2. Research on Risk Governance in the EURATOM Programme

Research in the field of risk assessment and management has had a prominent role in the Commission’s nuclear research programme, especially in the area of radiation protection. In the 1980’s, the research had a largely technical focus. Through the 1990’s, this focus shifted and greater attention was given to broader, less technical, issues, in particular those concerned with risk perception and communication, risk governance and the role of public participation in the process. This trend will continue within the Commission’s 6th Framework Programme (FP6) given the increasing recognition of the importance of these broader socio-economic issues for decision making related to both nuclear and other technologies. The main results from projects carried out in FP4 and expectations from those underway in FP5 are summarised.

2.1 Risk governance and stakeholder involvement

2.1.1 4th Framework Programme

One of the important priorities of FP4 was the development of more coherent, comprehensive and equitable approaches for evaluating and managing diverse health

and environmental risks and of a generally applicable and practicable methodology that could assist policy formulation for risk management. One of the projects supported in this area was the TRUSTNET concerted action [6]. TRUSTNET was concerned with the social management of risk and its aims were:

- to determine the factors which influence the credibility, effectiveness and legitimacy of the regulatory framework for hazardous activities
- to set up a network of European decision makers involving civil servants, local authorities, industrialists, regulators, experts, academics, other stakeholders, etc, to identify deficiencies in existing approaches used for the management of risk
- to develop more coherent, comprehensive and equitable approaches for evaluating, comparing and managing health and environmental risks
- to identify future research needs in this area.

Four seminars were held within the framework of TRUSTNET. They were attended by about eighty people overall with diverse background and interests; about half participated in all four seminars. Case studies on risk governance were used as the main mechanism to elucidate issues and provide a framework for reflection and discussion in the seminars. The case studies were deliberately chosen to cover a diverse range of issues and risks. They included electromagnetic fields, siting of a nuclear reactor, pharmaceutical regulation, flood risks, siting of a hazardous installation, environmental and industrial framework around Dunkirk, chemical global risk management, genetically modified products, radiological risk assessment, and a citizens conference on genetic modification in agriculture and food. In addition, a number or more horizontal issues were addressed including the acceptability of risk, social trust and confidence, role of experts in risk based decision making, mapping of the social governance of risk, ethical aspects of risk management, etc.

Analysis of the case studies led to the identification of two main patterns of risk governance that were categorised as the “top-down” and “mutual trust” paradigms. The “top-down” paradigm is the traditional approach to risk governance and is characterised by the dominant role of public authorities in the risk assessment and management process as well as in the justification (usually implicit) of a hazardous activity. Aspects of the decision process such as scientific uncertainty, objective conflicts, trade-offs and residual risks are sometimes not disclosed to the public eye. Public authorities govern largely by framework and process oriented regulations. Experts provide input on the risks and different stakeholders defend their specific interests while the public authorities are entrusted with the task of representing the public interest. This process has proved to be effective in many cases and will remain so in future. However, it has proven problematic in some cases, in particular where the legitimacy of the public authorities is questioned, where public confidence has been seriously eroded resulting in distrust, where the benefit of a proposed activity is not clear to the public, where the perception of the benefits is unevenly distributed, where societal concerns are fuelled by large uncertainties or differences in scientific opinion, where decisions taken centrally do not take account of local

concerns, etc.

In such cases a different approach (“mutual trust”) is needed to provide legitimacy and restore public confidence and trust where these may have been lost. The “mutual trust” paradigm is characterised by the broad involvement of stakeholders in the risk assessment and management process, including the justification of a hazardous activity. Public authorities still govern as much as possible by framework and process oriented regulations, including a broad participation of the concerned stakeholders. Decision making is de-centralised as much as possible to the relevant local context and science is no longer presented to the public as an exclusive determining factor in the decision making process. Expertise becomes pluralistic and available to all parties involved. The paradigm provides room for an open political process in which the stakeholders can address concerns in the relevant context.

The case studies drew attention to the increasing problems being experienced with the use of the “top-down” approach, especially in its application to more complex issues that provoked social concern. The nature and origins of these difficulties were identified together with how they might be overcome through the use of the “mutual trust” approach. The role of science in the mutual trust approach was clarified and the importance of effective stakeholder involvement in the different stages of decision making was emphasised. It was recognised that many features of the “mutual trust” paradigm were already evident in some of the case studies, in particular where application of the “top-down” approach had met with difficulties.

The TRUSTNET project has made a significant contribution to the identification of better approaches to risk governance. It should not, however, be seen as a panacea; rather, its findings provide a stimulus for debate and identification of further improvements in approach, for promoting a common understanding of the issues and for revealing what is at stake if these issues are not properly addressed. Its main contribution is to have set out clearly the nature of the problem. Some may regard this as a very small step forward; however, it is often the key to achieving a common understanding of the issues and an essential first step in finding practicable solutions. The results will be of wide interest, in particular to those whose professional or private activities impinge directly or indirectly on risk governance (eg, politicians at local, regional, national or supra-national levels, industrial leaders, public authorities, scientists, technologists, environmental groups, NGOs, etc).

2.1.2 5th Framework Programme

Risk governance and stakeholder involvement feature in FP5 in two different but linked ways. One of the objectives in the “risk assessment and management” area of the programme is the development of approaches for risk governance that are more efficient (in time and resources), less controversial and capable of gaining public trust and confidence, together with guidance on their application in the nuclear sector. A similar objective is included in the “waste management and disposal” area of the programme, namely to explore approaches to decision making (albeit, in the

narrower context of waste management and disposal) that are transparent, defensible and capable of gaining public trust and confidence. Three projects are being supported.

TRUSTNET 2 TRUSTNET 2 is a continuation of the network created in FP4. Its main objective is to contribute towards improving the quality of decision-making processes used in the governance of hazardous activities in Europe. It will provide practitioners in risk governance with concrete and practicable recommendations on how to improve the quality of the process. The mode of operation of the network will be the same as before with a series of seminars being used to elucidate the issues and provide a framework for evaluation. The following topics relevant to risk governance will be addressed in the seminars:

- the role of specialised agencies (in particular in the context of their increasing use at national and European levels, albeit with different missions, structures and degree of independence)
- the implementation of the precautionary principle (in particular the implications of differences in its interpretation and how it is being translated into legal instruments)
- the role of experts and science in the decision-making process (in particular in the context of the changing socio-political climate and how science is perceived)
- the impact of flexible decentralised risk management on an open market (in particular whether a decentralised approach – which has been identified as a useful approach for risk governance when social concerns and distrust are high - may impede free trade and industrial development)

One of the main concerns of TRUSTNET within the next three years will be to characterise decision-making processes that can effectively take into account both public concerns and economic competitiveness. Particular attention will also be given to how innovative experiences and institutional arrangements may strengthen efficiency and sustainability of risk management decisions. Issues such as: stakeholders participation in decision-making processes, pluralism of expertise, social trust building processes, representative and participatory democracy, transparency, autonomy and accountability of citizens will be given particular attention.

Progress with TRUSTNET can be monitored on its web-site at www.trustnetgovernance.com

COWAM The objective of the COWAM project is to develop practicable recommendations for improving decision making processes for the siting of nuclear waste management/disposal facilities, taking due account of local, national, cultural and historical contexts. The project will focus on the role of local and regional communities, their participation in decision making processes and the networking of

communities in different European countries. The focus on networking of local/regional communities arose from the recognition that this was a potential deficit in existing arrangements. Effective networking of European waste management organisations and regulatory bodies exists but little, if any, attention had previously been given to networking of affected local/regional communities or to the benefits this might bring.

A European “platform for dialogue” will be established for a number of local and regional communities in Europe where waste management/disposal facilities are being, or may be, located. This platform will be formally created during the first COWAM seminar, scheduled for September, 2001 in Oskarshamn, Sweden. Several tens of representatives from local and regional communities will participate in the seminar that will also be attended by representatives of regulatory bodies, waste management organisations, NGOs and experts in various disciplines. Following the seminar, the local/regional representatives will, themselves, determine how and to what extent they may wish to make use of the “dialogue platform” and network. Three further seminars will then be held at other locations where a waste disposal facility has been or may be sited. They will be attended by a core group of representatives from the local/regional communities that attended the first seminar together with a cross section of the other relevant actors (ie, regulatory bodies, waste management organisations, NGOs, experts, etc). In these seminars, case studies will be used to elucidate the issues and provide a framework for determining the strengths and weaknesses of various approaches (eg, those influencing the credibility, effectiveness and legitimacy of the process at local and regional levels).

Some of the issues to be addressed in the Seminars include:

- capacity or rights of the stakeholders, modalities for their involvement and financing mechanisms
- sustainability, legitimacy, efficiency, cost effectiveness of different processes
- motivation and values of the stakeholders
- ethical issues
- the role of experts, their characteristics and availability to different parties
- how representative are stakeholders
- relationships between stakeholders and their impact on social trust and public confidence
- interface between national and local decision making processes
- financing mechanisms for future intervention and surveillance (eg, for retrieval or remedial measures if subsequently deemed necessary)

The project will be completed with a workshop where the main conclusions will be drawn and practicable guidance developed on improving decision making processes for the siting of nuclear waste management/disposal facilities. Progress with this project can be monitored on the COWAM web-site, www.cowam.com that will be activated in the last quarter of 2001.

RISCOM II The RISCOM II project is concerned with how transparency and public participation can be improved in decision making on the management and disposal of nuclear waste. The research will provide useful inputs for improving the approaches to site selection for waste disposal facilities. The results will also be of relevance for improving decision making on complex issues more generally.

Some eleven organisations (including waste management organisations, regulatory bodies, universities, utilities, consultants) from five European countries are participating in the project. Each of the participating countries are at different stages in the decision making process for selecting disposal facilities and this will enrich the project through the diversity of contexts. The RISCOM model, which has previously been applied in Sweden and to a limited extent in the United Kingdom, will be at the heart of the project and used to evaluate transparency in decision making, in particular with respect to technical and scientific issues, normative issues and authenticity. A number of different approaches or procedures for achieving effective public participation and transparency will be analysed and some will be experimentally tested. An evaluation will be made in each of three countries (France, Sweden and the United Kingdom) of how structural and organisational issues within the national nuclear waste management system (ie, both within and between organisations) affect transparency. The findings, while specific to the countries and organisations evaluated, will have broader relevance. Particular attention will be given to value laden issues in performance assessments to enable a better distinction to be drawn between what are facts and values. Greater clarity on this matter has the potential to promote more effective communication between all parties when evaluating and drawing conclusions from the results of performance assessments. Workshops will be held periodically as the project progresses to enable timely exchange and feedback with end users and others actively engaged in these issues.

The approach being adopted by the project is unique in integrating substantive, procedural and organisational issues within a consistent framework for improved transparency. It has the potential to make a substantial contribution to identifying what is needed to achieve more transparent and trustworthy decision processes, both in the area of waste management and more generally.

Further information on some aspects of the RISCOM II project can be found elsewhere in these Proceedings [7].

2.2 Improving living conditions in settlements affected by the Chernobyl accident

Following the Chernobyl accident the Commission initiated a major research programme that was carried out jointly with the Ministries for Chernobyl Affairs in Belarus, Russia and Ukraine. The programme focused on the health and environmental consequences of the accident and their mitigation [8, 9]. The

programme was most intensive in the first half of the 1990s but joint research on a more limited number of topics continues.

One of the important lessons learned rapidly after the Chernobyl accident was that proper account must be taken of social and psychological factors in planning and implementing an effective programme of countermeasures in response to a nuclear accident. Failure to do so, as was evident in the Former Soviet Union, may generate much public anxiety and opposition and make poor use of resources that are often limited in the aftermath of an accident. The integration of such factors into decision making is not, however, without difficulty both conceptual and practical.

A number of research projects have been funded which analysed, in some depth, the role of social and psychological factors in the planning and implementation of countermeasures [10, 11]. Much of this research has been of a high academic standard, has provided many valuable insights into the underlying issues and contributed to the development of decision support systems designed to incorporate social and psychological aspects. Exploitation of the research has, however, been less effective in terms of improving the living conditions of those continuing to live in contaminated settlements, one of the prime drivers for the research. This situation has changed more recently with the implementation of, and success achieved by, the ETHOS project [12].

ETHOS, which is a sub-project of the broader RODOS (Real-time On-line Decision SuppOrt System for off-site emergency management) programme [13], was launched in 1996 and carried out under the auspices of FP4. It was concerned with the development and application of a novel approach for improving living conditions in contaminated settlements. Previous research had identified two main impediments to improving the situation in the affected settlements: firstly, the development of a dependency culture among those affected and, secondly, highly centralised planning and implementation of remedial measures. To overcome these deficiencies, a decentralised approach was developed and tested in the village of Olmany in Belarus. This approach has proved particularly successful. It has resulted in the population taking far greater responsibility for its own actions, in reduced levels of radio-caesium in children in the village, in the production of less contaminated agricultural produce and in economic improvements through the marketing of foodstuffs that previously exceeded contamination limits. The approach is currently being extended to a number of settlements in the region of Stolyn and, with support from the TACIS programme, will be disseminated more widely in Belarus, Russia and Ukraine. The success of the approach has been recognised by the Belarussian authorities at local, regional and national levels where there is now a commitment to apply it more widely.

This project exemplifies what can be achieved through the active involvement and commitment of local communities in decisions affecting their welfare. Without such involvement, experience has shown that it is very difficult, if not impossible, to achieve tangible improvements in living conditions in areas affected by long term

contamination. There are important lessons to be learnt from this experience, in particular in planning for the management of similar situations in the European Union, should they ever occur (whether from radioactive or other persistent contaminants). Some would contest this view, claiming that the ETHOS experience is unique to the Former Soviet Union and cannot be transferred to the European Union where conditions (eg, social, political and economic) are so different. While such differences must be acknowledged, they do not in any way detract from, or negate, the overall findings of the project, ie, the importance of actively involving local communities in the long term management of their contaminated settlements. To discount these findings, for what are largely superficial reasons, would be to the detriment of effective contingency planning in the European Union.

Further information on the ETHOS project can be found elsewhere in these Proceedings [14].

3. The Future

As indicated above, the issues of “science and society” and “science and governance” will feature strongly in FP6 given their importance for policy development. Research on these issues can be expected to continue also within the narrower confines of the EURATOM programme, in particular as the proposed thematic priority is waste management and disposal. The quality and robustness of the safety case for high level waste disposal will doubtless be enhanced by further technologically oriented research; however, an important impediment to disposal in many countries continues to be the failure to gain public and political acceptance for what is proposed. Research alone can not solve this problem but it has a role, albeit limited, to play. A better understanding is needed of the origins and nature of public and political concerns and how these might be allayed, either by improved technological solutions and/or through using new social mechanisms or processes for decision making. Building social trust and confidence will be key to success, as will gaining broad agreement as to the fairness and transparency of whatever process or processes are used. Research in these directions has the potential to identify approaches or processes capable of gaining wider public acceptance, at least of the decision process if not the decision itself.

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