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## 1. Introduction

Within the last decade '*participation*' has increasingly gained in importance as a principle of '*good governance*' in European Union (EU) policy debates, documents and regulation concerning fisheries management. It has been one major objective of the 2002 reform of the EU's Common Fisheries Policy (CFP) to promote improved governance by full implementation of the five normative principles of good governance which the European Commission has identified in its 2001 White Paper on European Governance (CEC 2001). Participation is one of these principles<sup>1</sup> – thus, generally high on the European policy agenda<sup>2</sup>. The most significant structural innovation for achieving more participatory fisheries management and decision-making processes under the revised CFP is the establishment of Regional Advisory Councils (RACs). These consultative bodies are composed of representatives from the fisheries sector and other interest groups affected by the CFP. The setting up of the RACs is provided for by the new Council Regulation (EC) No. 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy. This Regulation sets out the basic rules for operation of the revised CFP and identifies the RACs as a structural means to enable the CFP to “benefit from the knowledge and experience of the fishermen concerned and of other stakeholders” (EC 2002, Preamble, 27)<sup>3</sup>. The mandate of the RACs is to advise the European Commission in respect of proposals for fisheries management measures such as multi-annual recovery or management plans (EC 2002, Art. 31(4)).

The emphasis that the revised CFP, and the review process to which the Common Fisheries Policy had been subjected, put on stakeholder involvement has greatly stimulated research on participation in fisheries governance. Since the publication of the Commission's Green Paper on the future of the CFP in 2001 (CEC 2001), a growing literature has been offering investigations into the historical development of participation in fisheries management (Gray 2005a). Several scholars have started to examine strategies for and processes of participation in an international comparative perspective (e.g. Wilson et al. 2003; Rice 2005; Vodden et al. 2005; Hawkins 2007), others have proposed typologies of different forms of participation in fisheries governance (Gray 2005a). This literature exposes that with the 2002 CFP reform participation in EU level fisheries governance has taken on a new dimension. Before the reform, the EU fisheries governance system provided little opportunity for stakeholder involvement. “Stakeholders had no formal role and were relegated to lobbying in the margins of meetings” (Delaney et al. 2007, p. 1). Comparative research including different policy levels has shown that the new emphasis on participation is not specific to EU policy but can be found in many national, regional and international fisheries policies. Gray (2005a) asserts that there is an increasing emphasis on the “participatory mode of fisheries governance” across the world which was foremost rooted in the failure of the other two main governance modes, the still dominant “hierarchical mode” and the “market mode”.

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<sup>1</sup> Participation as defined in this policy document requires governance institutions to ensure wide participation from the conception of policy options right through to the implementation of decisions (CEC 2001, p. 10). The other four major governance principles set out in the White Paper are openness, accountability, effectiveness and coherence.

<sup>2</sup> That public participation was put high up the 2002 CFP reform agenda needs to be seen against the background of the emerging general policy of filling the “democratic deficit” in the EU and rendering EU policy-making more inclusive and more closely connected to the European citizenry as set out in the White Paper on European Governance (CEC 2001, p. 8).

<sup>3</sup> Implementation provisions (regarding procedure, structure, membership, participation by non-members, functioning, coordination between RACs, financing, annual report and audit, and review) are set out in Council Decision 2004/585/EC (EC 2004).

Extended and more efficient and legitimate participation in fisheries governance seem to have gained mainstream support in Europe and other parts of the world in the past decade. The challenges of how to put this noble goal into practice still demand, as emphasised by several authors of the growing body of literature, more attention, focused discussion and careful exploration (Hawkins 2007, p. 7). Among the challenges that feature prominently in current discussions about the new participatory policy under the revised CFP are the integration of scientific analysis or, in a wider perspective, of knowledge production with public participation and the inclusion of a wider diversity of interested and affected parties into the governance process and the role that the RACs could/should play in these processes. These issues are discussed particularly in regard to the EU's emerging policy of moving from a single species-based fisheries management towards an ecosystem-based approach (EBA; EC 2002, Art. 2(1)<sup>4</sup>).

The concern of the paper at hand is to present a set of concepts which have been evolving in the literature on participation in the governance of risk and the environment in the past decade and which we consider particularly useful for advancing discussions about integration and inclusion. The concepts are not only tools of theoretical reflection but also helpful for making suggestions for how to deal with these issues in practice. First, we will introduce *six concepts of public participation*, each linked to key ideas from substantial theories of society and democracy and offering a specific perspective of what can and should be the main objective and rationale of a participatory process. We shall argue that knowledge about these concepts could be useful in practice as it could help to avoid tensions and conflicts grounded in different (or even divergent) expectations that (a variety of) affected and interested parties may link with a participatory process. Second, we will discuss the new emphasis of participation under the revised CFP and the rationale for the setting up of the RACs (as stated in the official EU policy and regulatory documents) in the light of this taxonomy of normative justifications of public participation. We will identify a *functionalist view of participation* in the main regulation (Council Regulation (EC) No 2371/2002) and argue that the challenges of integrating science with participation and including a wider diversity of stakeholders requires combining this approach with a *deliberative approach to participation*. This argumentation will build on the concept of '*analytic-deliberative processes*' which was coined by the US National Research Council (NRC) (Stern and Fineberg 1996) and which is one of the promising suggestions for developing an integrative approach to governance based on the inclusion of experts, stakeholders, and the general public. Fourth, we will present a *four-stage approach to the governance of risk* (IRGC 2005, Renn and Walker 2008) which is inspired by the concept of analytic-deliberative processes and distinguishes stage-specific functions of stakeholder and public participation. This governance framework suggests a much earlier involvement of stakeholders than that through the RACs under the new CFP. Finally, some conclusions for fisheries governance will be drawn.

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<sup>4</sup> Point 1 of Article 2 of the 2002 Council Regulation states: "[The Community] shall aim at a progressive implementation of an eco-system-based approach to fisheries management" (EC 2002). In recent years, the need to complement the traditional approach to fisheries management by providing it with environmental policy principles and objectives as a basis for management action has been endorsed in many international agreements; e.g. in the Codes of Conduct for responsible fisheries of the Food and Agriculture Organisation of the United Nations (FAO), in the UN Law of the Sea as well as in the Convention of Biological Diversity (Varjopuro et al. 2008, p. 147).

## 2. Six genuine concepts of stakeholder and public involvement<sup>5</sup>

In the literature on participation we do not find a generally agreed classification of concepts of participation. More recent attempts (Sherington 1997; Rowe and Frewer 2000; Beierle and Cayford 2002; Bora and Hausendorf 2006; Hagendijk and Irwin 2006; Abels 2007) focus on the two dimensions of participants' selection and intensity of decision-making. The latter ranges from gathering options to co-determination – or 'co-management' which is the established term of this power-sharing type of participation (in terms of a public-private partnership) in the fisheries management literature. However, these classification attempts lack a clear theoretical foundation. In the following sections we will present six concepts of participation each having a specific philosophical foundation and expressing a different point of view with respect to what democracy means and what role participation can play in this context. They present, so to speak, prototypes of structuring processes that channel input from stakeholders and the public into public policy-making. The concepts can be labelled as functionalist, neo-liberal, deliberative, anthropological, emancipatory and post-modern. This taxonomy reveals the "rich and complex character of normative arguments about participation" (Dietz and Stern 2008, p. 48). Knowledge about this richness and complexity, we shall argue, has value for practical implementation. Above all, the six concepts can be used as a *diagnostic tool* to grasp the ideas and perspectives of those participating and to balance different expectations of what the participatory process should achieve.

It is important to note at the outset that, like most efforts at abstraction, the suggested taxonomy will simplify an admittedly complex reality. The six concepts have to be looked upon as abstractions from real-world interaction. No participation process would be considered as belonging exclusively to one of these categories. Rather, the categories should be understood as *ideal types* in the Weberian sense (Weber 1972). In what follows, we will sketch successively each of the six participation concepts (the salient features of the six concepts are summarised in table 1 below).

### ***Functionalist concept***

This perspective on public participation draws on the functional school of social sciences and evolutionary concepts of social change. Functionalism is originally based on the work of Bronislaw Malinowski and Alfred R. Radcliffe-Brown, the founding fathers of British and US functionalism (Radcliffe-Brown 1935; Malinowski 1944). In the perspective of structural functionalism, as a later development primarily associated with Talcott Parsons and Robert K. Merton (Parsons 1951; Merton 1959), society is a stratified system of structures securing functional needs (Ritzer 1996). Social differentiation produces structures that specialise in the fulfilment of specific functions (Münch 1996, p. 21). Integration is the major challenge of functionally differentiated societies. The *telos* of social change is, therefore, the emergence of differentiated, integrated and adaptive systems. Ongoing social differentiation leads to heterogeneity, which makes integration a vital social imperative. Adaptation is thus the result of functional differentiation and simultaneous integration. In this sense, the functionalist approach stresses the importance of participation for *strategic planning* and *adaptive social change*. The main objective of participatory exercises is to avoid missing important information and perspectives. Participation is understood as a process of getting all the problem-relevant knowledge and values incorporated within the decision-making process. The underlying basic assumption of this approach to participation is that representation and

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<sup>5</sup> This section is a summary version of the more detailed presentation of the six concepts in Renn 2008, pp. 294-304. The NRC's most recent report on *Public Participation in Environmental Assessment and Decision Making* (Dietz and Stern 2008, pp. 46-66) refers to this taxonomy in the discussion of justifications for and problems with public participation.

inclusion of a diversity of social groups oriented towards a *synthesis of their knowledge and values* towards achieving a predefined goal will result in the improvement of political decision-making. According to the functionalist concept participation is necessary to *improve the quality of political decisions*.

### ***Neo-liberal concept***

While the functionalist approach stresses the need for synthesising of knowledge(s) and values, the neo-liberal approach puts the emphasis on bargaining power and balancing of individual interests. This approach to public participation draws on the philosophical heritage of liberalism and Scottish moral philosophy (Jaeger et al. 2001, pp. 20ff). Neo-liberal decision-making focuses on individual interests and preferences. It is assumed that people pursue their individual goals according to their available resources. The role of society is not to provide integration, but to grant security for property and personal well-being (Dunn 1969; Ayers 1991; Rawls 1999). Under optimal conditions, the market is the place where individual preferences can be converted into appropriate actions. If, however, the aspired good requires collective action by many individuals, or if an individual good leads to external costs and benefits, the market mechanism will fail and public policies are needed. These policies should reflect the preferences of all the individuals who are affected by the decision (Fisher and Ury 1981; Bingham et al. 1987). Since not all preferences are likely to represent identical goals and the means of achieving them, a negotiation process must be initiated that aims at reconciling conflicts between actors with divergent preferences. Within neo-liberal theory, individual preferences are given so that conflicts can be only reconciled if, first, all of the preferences are known in the proportional distribution among all affected parties and, second, compensation strategies are available to recompense those who might risk utility losses when the most preferred option is taken (O'Hare 1990). The main purpose of participation in the neo-liberal perspective then is to generate a most truthful *representation of public preferences* within the affected population and find optimal *compromises among interests* (Amy 1983).

### ***Deliberative concept***

This approach to public participation is mainly influenced by Habermasian discourse theory (Habermas 1984, 1987; Apel 1992; Benhabib 1992; Renn and Webler 1998, pp. 48-57). In the perspective of Habermas, modern societies are characterised by a plurality of values and world views. They lack moral cohesion which could guide political decision-making. Although mutually binding norms and values are non-existent at the surface, people can allude to their shared reason and experience as human beings. Consequently, political decision-making has to find mechanisms that could serve as guidance instruments by enabling citizens to engage in joint rational decision-making. In discourse ethics, only those political and judicial decisions may claim to be legitimate that may find the consent of all affected parties in discursive opinion formation and decision-making processes (Habermas 1992, p. 169; Corrigan and Joyce 1997). Accordingly, legitimate political opinion formation is conceptualised as a process of the *competition of arguments*. It is the *procedure* of decision-making which decides on its legitimacy. The basic premise of Habermas' theory of communicative action is that people are capable of coming to a rationally motivated agreement (i.e. agreements free of coercion of any kind) if they are provided with the optimal discourse setting in which the common rationality of communicative action can fully unfold. In this sense the deliberative approach moves beyond the neo-liberal (and the anthropological) perspective in postulating that new norms and shared preferences can emerge from a participatory process. Of course, no real-world discourse can reach the prerequisites of the ideal speech situation (Gripp 1984; Webler 1995); yet, practical discourse can aspire to this goal. Decision-making requires a diversity in participants and perspectives in the sense that all

potentially affected parties should be able to agree with its outcome. All relevant arguments need including in the deliberation regardless of the extent of their representation within the population. According to the deliberative concept, the main purpose of participation is to find the best possible *consensus* among moral agents (not just utility maximising agents) about shared meaning of actions based on the knowledge about consequences and an agreement on basic human values and moral standards (Kemp 1985; Brulle 1992; Webler 1995, 1999).

### ***Anthropological concept***

The anthropological approach to public participation is mainly influenced by pragmatic Anglo-Saxon philosophy. It is based on the belief that common sense is the best judge for reconciling competing knowledge and value claims. Pragmatism was mainly influenced by the works of Charles S. Pierce and John Dewey (Pierce 1867; Dewey 1940). Pragmatism postulates that ideas are to be judged against their consequences in the social world. Pierce states that ideas, theories and hypotheses can be experimentally tested and inter-subjectively evaluated according to their consequences (Riemer 1999, p. 463). According to Dewey, action gains moral validity by contributing ever more meaning to life (Prechtel 1999, p. 218). The implications of this perspective for participatory decision-making are strong. The moral value of policy options can be judged according to their consequences. Furthermore, each citizen is capable of moral judgement without relying on more than their mind and experience. The main purpose of participation in the anthropological perspective is to engage in *common sense* as the ultimate arbiter in disputes. This requires the inclusion of *disinterested laypersons*, the 'model' citizen, representing basic social categories such as gender, income and locality.

### ***Emancipatory concept***

The basic ideas of emancipatory participation are derived from a Marxist or neo-Marxist social perspective (Ethridge 1987; Jaeger et al. 2001, p. 232ff.). The main purpose of participation in this view is to give the least or less powerful groups in society a voice in specific decisions and to increase their capacity to influence political decision-making in the future (Fischer 2005). The main emphasis of this approach is *empowerment*. Participation is seen as an instrument to empower oppressed groups to, first, acknowledge their objective situation in which they live, develop additional skills and means to fight these unjust structures, and finally, be prepared to continue this fight even after the participatory exercise is completed. In the long run, participation is seen as a catalyst for an evolutionary, or even revolutionary, change of power structures in capitalist societies (Forester and Stitzel 1989; Fung and Wright 2001). The emancipatory perspective has partially been derived from classic Marxist positions but was also highly influenced by the early works of critical theory (in his later works, Habermas distanced himself from these Marxist roots and developed the deliberative school which deviates in main parts from the original critical theory). It has since been strongly adapted by all variations of liberation theories in the context of development and anti-capitalist movements (Pretty 1995; Freire 2000). The goal of empowerment, however, has spread out to more liberal participation contexts, particularly in the pursuit of environmental justice, community development, access to basic services to the poor, and enhancing rural development (Eklund 1999; Hardina 2004; Fung and Wright 2001).

### ***Post-modern concept***

This approach to public participation is based on Michel Foucault's theory of discourse analysis. Foucault's basic assumption is that knowledge is constituted and legitimised through power. 'Truth' then depends upon historically and socially contingent conditions (Foucault 1979, p. 39, 2003; Jordan and Weedon, 1995). Power and knowledge are interlinked to the extent that power supports the creation of knowledge, whereas knowledge legitimises power

structures and their social manifestations. Ethics and the self-constitution of the individual are Foucault's third topic of interest. A person is transformed into an individual when s/he reflects on the knowledge and power structures surrounding and conditioning him/her and gains insights into the restraints and possibilities produced by these structures (Foucault 1986). With this knowledge individuals can gain themselves power to shape the social structures surrounding them. In this respect, discourse analysis informs public participation with an analytical focus on *social power* and *knowledge formation*. In the post-modern view the main purpose of participation is to *reveal* the hidden power and knowledge structures of society and thereby widen the participants' horizon and help *reframing* problems and action options (Fischer 2005, p. 25). Participation does not necessarily have the potential to resolve conflicts, and reaching a consensual conclusion is neither required nor desirable. Rather, participatory processes can decrease the pressure of conflict and enlighten the policy making process by providing a platform for making and challenging claims and illustrating the diversity of factual claims, opinions and value preferences (Luhmann 1989; Stirling 2007, 2008). In the post-modern view, the relativity of knowledge and values requires that a *wide diversity* of social groups extending beyond the established powerful players and *dissenting* views are included in the participatory process.

**Table 1** *Six concepts of stakeholder and public involvement and their salient features*

<b>Concept</b>	<b>Main objective</b>	<b>Rationale</b>	<b>Models and instruments</b>
<b><i>Functionalist</i></b>	To improve quality of decision output	Representation of all knowledge carriers; integration of systematic, experiential and local knowledge	Delphi method, workshops, hearings, enquiries, citizen advisory committees
<b><i>Neo-liberal</i></b>	To represent all values and preferences in proportion to their share in the affected population	Informed consent of the affected population; Pareto-rationality plus Caldor-Hicks methods (win-win solutions)	Referenda, focus groups, internet participation, negotiated rule-making, mediation etc.
<b><i>Deliberative</i></b>	To debate the criteria of truth, normative validity and truthfulness	Inclusion of relevant arguments, reaching consensus through argumentation	Discourse-oriented models, citizen forums, deliberative juries
<b><i>Anthropological</i></b>	To engage in common sense as the ultimate arbiter in disputes (jury model)	Inclusion of disinterested lay-persons representing basic social categories such as gender, income and locality	Consensus conference, citizen juries, planning cells
<b><i>Emancipatory</i></b>	To empower less privileged groups and individuals	Strengthening the resources of those who suffer most from environmental degradation	Action group initiatives, town meetings, community development groups, tribunals, science workshops
<b><i>Post-modern</i></b>	To demonstrate variability, plurality and legitimacy of dissent	Acknowledgement of plural rationalities; no closure necessary; mutually acceptable arrangements are sufficient	Open forums, open space conferences, panel discussions

Source: adopted from Ortwin Renn 2008, p. 303

### ***Value for practical implementation***

The most recent study of the National Research Council (NRC) on *Public Participation in Environmental Assessment and Decision Making* highlights the purposes of public participation as a key issue (Dietz and Stern 2008, p. 43). The authors remind the reader that “there are many goals for public participation processes and thus many criteria for what constitutes a ‘good’ or ‘effective’ outcome and a ‘good’ or ‘effective’ process” (Ibid., p. 225). The value of a participatory process might be assessed very differently by the participants when these have divergent (or even conflicting) views or priorities about the purposes of this process (Ibid., p. 48). The six concepts of participation as outlined above promise to shed light on and systematise the variety of purposes and expectations that organisers, participants, observers and the addressees of public participation might link with a participatory process. They reflect internal yardsticks for designing and evaluating public participation by which all those directly or indirectly involved in a participatory process are implicitly or explicitly guided. These concepts overlap in some respects and some of the participatory approaches can be combined and integrated; they clearly differ, however, in priorities. Often, conflicts about the best structure of a participatory process arise from overt or latent adherence to one or another of the six background concepts. For instance, it depends largely on the concept of participation itself whether fairness of a participatory process is seen as representing common sense, diversity of viewpoints, all relevant arguments, or a proportional sample of the affected public. Advocates of neo-liberal approaches will stress the need for proportional representation (i.e. representativeness) of participatory processes, while advocates of deliberative approaches will be satisfied with a diversity of viewpoints. While the former will take public preferences as a given prerogative to a participatory process, the latter will wish to see preferences being influenced and changed through the process.

The NRC publication emphasises that it was therefore essential to design a participation process with a clear purpose in mind and to make serious efforts to share this understanding with all participants (Dietz and Stern 2008, p. 43ff.). Clarity of purpose – for all those involved in the participation process – is identified as a basic principle of design of participatory processes (Ibid., p. 228). We shall argue that knowledge about the six concepts and insights into the diversity of normative justifications of public participation that can be gained from this taxonomy can facilitate this task. Above all the taxonomy makes aware that choice of purpose has implications for choice of design. An explicit inclusion of the six concepts within the designing and executing phases of participation is essential for *matching purpose and design*, and for bringing the aspirations of all parties affected into line with the possibilities that each design can deliver. It is in this way that knowledge about the six concepts of participation can enlighten the process of practical implementation. In the next section we will discuss the way in which the purpose of enhanced stakeholder involvement through the RACs is presented by EU regulatory and policy documents in the light of the taxonomy. Deficits in clarity of purpose will be highlighted.

### **3. What role for the functionalist approach in EU-level fisheries governance?**

Within fisheries governance in the developed world, there has been a preference for the functionalist approach to participation<sup>6</sup>. In many countries, management organisations or ministries responsible for fisheries management have been, and still are, primarily interested in input from the relevant stakeholders – user-groups in particular – to improve the quality of

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<sup>6</sup> Primarily in developing countries, emancipatory forms of participation are of some relevance as well, especially in the context of development projects aimed at the empowering of local communities in fisheries management (see for instance Alam and Begum 2005).

management measures<sup>7</sup>. The *rationale* given for the setting up of Regional Advisory Councils by the 2002 Council Regulation also suggests a predominantly functionalist view of participation. The Regulation states that

to contribute to the *achievement* of the objectives of the Common Fisheries Policy, Regional Advisory Councils should be established to enable the Common Fisheries Policy to benefit from the *knowledge and experience* of the fishermen concerned and of other stakeholders and to take into account the *diverse conditions* throughout community Waters (EC 2002, Preamble, 27; emphasis added).

The 2004 implementation Council Decision specifies that it would need to be ensured that the RACs “include *all the interests* affected by the Common Fisheries Policy [...]”<sup>8</sup> (EC 2004, Preamble, 4; emphasis added). These “interests affected” comprise the “fisheries sector” and “other interest groups” and make up the membership of the RACs.

The “fisheries sector” shall mean the catching sub-sector, including shipowners, small-scale fishermen, employed fishermen, producer organisations as well as, amongst others, processors, traders and other market organisations and women’s networks (Art. 1 (2); “other interest groups” shall mean, amongst others, environmental organisations and groups, aquaculture producers, consumers and recreational or sport fishermen” (Art. 1 (3)).<sup>9</sup>

According to these Council documents the RACs shall serve to contribute to better goal achievement by enriching the CFP through the knowledge and experience of the full diversity of interests affected – including knowledge and experience related to context and practice, as suggested by the reference to “diverse conditions”. Whether or to what extent the actual incorporation of the RACs into the implementation of the revised Common Fisheries Policy will correspond to this functionalist interpretation of stakeholder involvement is an open and empirical question. The European Commission’s 2001 Green Paper on the Future of the Common Fisheries Policy expresses a somewhat different view and makes the purpose of participation through the RACs appear less clear. The rationale for the new emphasis on participation set out here is – to use a conceptual distinction suggested by Andy Stirling (2007, 2008<sup>10</sup>) – partly “normative democratic” (‘because it’s the right thing to do’; participation as a major good governance principle) but foremost “instrumental” (in Stirling’s terminology meaning ‘because participation facilitates particular favoured decisions’): Enhanced involvement – of fishermen in particular – can improve regulatory compliance and enforcement and thereby resource management:

Politically, the stakeholders do not feel sufficiently involved in the management of the policy and many believe that there is no level-playing field in terms of compliance and enforcement (CEC 2001, p. 4).

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<sup>7</sup> The taxonomy of views of participation has been developed in the context of research on the governance of risk (Renn 2008, pp. 294ff.). Within risk governance, there has been a strong preference for the functionalist and neo-liberal view of participation. The primary interest of risk management agencies has been, and still is, to improve the quality of the decision output and to make sure that conflicting values could be resolved in proportion to the representation of the people affected by the decision (Fiorino 1990). More lately, there has been a shift towards deliberative and emancipatory forms of participation (Bohmann 1998) for which the discussion on environmental justice as well as on social capital has served as a catalyst (Dryzek 1994). In parallel, the anthropological concept has inspired many organisers of participation to model participation in accordance with the well-established jury format of the US judicial system (Armour 1995; Crosby et al. 1986).

<sup>8</sup> The final part of this clause states: „while recognising the primacy of fishing interests given the effects on them of management decisions and policies“.

<sup>9</sup> However, the fisheries sector is assigned a predominant position within the RACs; in both the General Assembly and the Executive Committee a majority (two thirds) of the seats shall be allotted to representatives of the fisheries sector and only one third to representatives of the other interest groups (EC 2004, Art. 5(3)).

<sup>10</sup> This distinction builds on earlier conceptual work by Fiorino (1989) on different rationales and imperatives for participatory engagement on the part of powerful institutions.

Many fishermen, in particular, believe that their views and knowledge are not sufficiently taken into account by managers and scientists. This lack of involvement undermines support for the conservation measures adopted (Ibid., p. 11).

The reform of the CFP can only succeed if fishermen *consider* that fisheries policy takes into account their interests, views and experience (Ibid., p. 12; emphasis added).

A “substantive rationale” (‘participation will lead to better decisions’ required for better goal achievement) as suggested by the new Council Regulation is not explicitly mentioned in this discussion paper which initiated the CFP’s reform. In contrast to the Council Regulation it does not provide a functionalist interpretation of the purpose of enhanced stakeholder involvement. However, clarity of purpose is of particular importance for the establishment and work of the RACs. They shall bring together social groups with diverse interests, values and preferences in regard to the CFP (Varjopuro et al. 2008, p. 151), and these groups will probably have also different views on the purpose of being involved in these advisory bodies (Jentoft et al. 2003, p. 291). Furthermore, there is lack of experience in the EU of executing and being part of such processes of wider inclusion on which to build on. Both in a European and international perspective, there is an established tradition in fisheries *management* for involving *resource users* in decision-making<sup>11</sup>.

Across the world, there has been a bias towards participation by parties having a clear *economic stake* in the management decisions. In Europe, only since the 1990s, this bias is much less being taken for granted and increasingly being subjected to debate and critical review. It is mainly the EU’s progressive implementation of the ecosystem-based approach and the growing pressure exerted by environmental NGOs to switch to this approach and not damage the marine ecosystem beyond repair<sup>12</sup> which have made it increasingly obvious and a topic of debate that resource users are only one part of the entirety of affected and (potentially) interested parties (Mikalsen and Jentoft 2001, p. 282; Hawkins 2007, p. 11). Moreover, the persistent problems of overfishing and resource depletion and the initiation of a switch to EBA have increased also the wider public’s awareness of, and interest, in fisheries issues (Mikalsen and Jentoft 2001, p. 282; CEC 2001, p. 4). As a consequence, the privileged position of users has increasingly been challenged as a manifestation of insufficiently inclusive and democratic institutions (Mikalsen and Jentoft 2001, p. 281). Correspondingly, in both policy debates over and research into participatory processes the term ‘*user-group*’ is being losing its hitherto dominance and contrasted with the concept of ‘*stakeholder*’. As the stakeholder term is sufficiently broad to include those dependent upon fishing for a living and those with political, environmental or consumer concerns about fishing it is found to be better suited to capture the “new societal/political context of fisheries management” (Varjopuro et al. 2008, p. 151; Jentoft et al. 2003, p. 291). The RACs which have been constituted as “stakeholder-led organisations” (EC 2004, Preamble, 3) are part of and a response to this new context.

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<sup>11</sup> In Europe, involvement is largely restricted to consultation. This is in contrast to many fisheries regimes outside Europe where co-management systems have been established, empowering resource users (often representatives from the fishing industry) to co-determine management decision-making (Mikalsen and Jentoft 2001; Wilson et al. 2003). Also the RACs shall work in a purely advisory function. The European Commission’s ‘Roadmap’ communication on the CFP’s reform states: “The Commission and Member States will not be bound by the recommendations, opinions or reports of the Regional Advisory Councils but may explain in the explanatory memorandums of their proposals how they dealt with the opinion given by the competent RAC” (CEC 2002, p. 22).

<sup>12</sup> Gray (2005a) refers to pressure exerted by environmental NGOs as the least direct form of “environmental stewardship” which in his governance taxonomy is one of the four sub-types of the “participatory mode of governance” (the other subtypes are “industry self-governance”, “co-management” and “community partnership”). He asserts that the most important recent development in regard to participation in fisheries governance in the developed world was the constant rise of “environmental stewardship” (Gray 2005a, p. 18).

As Hawkins states (2007, p. 114), the inclusion of a wider diversity of stakeholders in the management of fisheries through the RACs is still at an exploratory and experimental stage. This exploratory stage should include serious efforts to further clarify the purpose of stakeholder involvement (based on the 2002 Council Regulation), share with all RAC members and participating non-members this understanding, and discuss how the RACs' discussion and decision processes could best be matched with this purpose (while decisions on design would need to adhere to the general framework for the establishment of the advisory bodies set out in the 2004 Council Decision). *Questions* likely to be raised in such clarification processes include: what kind of knowledge and experience are stakeholders expected to provide; how will this information be integrated with the results of scientific analysis; and why shall this input only occur at the management stage, i.e. a late point in the overall fisheries governance process. These are questions which are prominently dealt with in the recent literature on participation in fisheries governance.

#### **4. The challenge of integrating science and participation**

The Common Fisheries policy shall be guided by “a decision-making process based on sound scientific advice which delivers timely results” states the 2002 Council Regulation (Art. 2(2b)). All over the developed world, “science”, as Hawkins puts it (2007, p. 33), “is deeply embedded in fisheries management”. The prevailing idea has been that the key challenge of fisheries management is to understand the dynamics of fish populations and their response to exploitation. Therefore, expert advice has mainly been sought from biological scientists. The main task of these experts has been and still is to set optimum levels of exploitation based on estimations of the quantities of fish that can be caught without reducing stocks to a point where they can no longer sustain themselves (Ibid., p. 11). Faced with the perennial problem of resource depletion and growing insights into ecological implications it is nowadays widely recognised that fisheries management requires more than dealing with biological aspects. In the framework of the EU's Sustainable Development Strategy it is pointed out that a sustainable exploitation of aquatic resources requires dealing in an integrated and balanced manner with environmental, economic, and social aspects (EC 2002, Preamble, 4; Hawkins 2007, 4ff.). Even within the framework of environmental sustainability, the narrow focus on population dynamics has been widened through the analysis of complex interactions between natural processes, ecosystem variability, climate change and human interventions.

It is in this broader, multidimensional management perspective that it appears ‘functional’ to set up an institutional governance structure through which knowledge and experience of a variety of stakeholders can be channelled into the CFP. Recent publications have highlighted eco-system based fisheries management as a highly complex issue (as compared to single-species management) and have pointed to the multiplication of knowledge needs and the diversity of knowledge sources – scientific disciplines, government administrations, and stakeholders – which would need to be connected and brought into compatible formats (Varjopuro et al. 2008, p. 153). The United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) has claimed that:

The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices ... and should involve all relevant sectors of society (DEFRA 2004, p. 94, quoted in Gray 2005b, p. 347).

The RACs' establishment has, however, provoked the question of why this knowledge and experience is incorporated into fisheries governance at this late stage in the process, i.e. only after the science advice has been incorporated into management proposals (Rice 2005, p. 254). The RACs are now entitled to *observe* the scientific process but they are not a formal part of it (Hawkins 2007, p. 106). In his recent *Review of Science and Stakeholder*

*Involvement in the Production of Advice on Fisheries Management* Hawkins stresses (2007, p. 114) that while the RACs shall serve to involve stakeholders in decisions on management policy and the measures to be adopted, and in management itself, “we are left, however, with the task of resolving the role of stakeholders with respect to the scientific advice”. Fisheries scientists have always relied on the fishing industry for data but exchange between fishers and scientists has been minimal. Hawkins (2007, p. 21) states that “remarkably fishers themselves have not usually been regarded as experts, whose advice has value”. Also under the revised CFP there is no procedural or structural device through which stakeholders’ practical and experiential knowledge could be systematically linked to the process of producing expert advice. Analysts of fisheries management have, however, pointed since some time to the merit and legitimacy of fishermen’s involvement in science advisory processes (Jentoft and McCay 1995; Felt et al. 1997, p. 188). Nowadays, it is widely recognised that fishers’ knowledge has value for collecting data available on the fish stocks and informing scientists’ assumptions about the way the fisheries operate (Hawkins 2007, p. 108). With the growing prominence of an ecosystem-based approach to fisheries management it is increasingly acknowledged that fishers are not the only stakeholders who could make a valuable contribution to the process of gathering and synthesising information. Many environmental groups, as stressed by Rice (2005, p. 253), could play a meaningful role in such processes as well. They had well-credentialed scientists who could enrich the processes by bringing “different interpretational ideas”, different hypotheses or different assumptions, to the same data and analyses used in the experts’ meetings (Ibid.). The question of whether scientific advice in EU-level fisheries management should remain isolated from stakeholder input has become a salient issue. The current exclusion of stakeholders from active involvement in the science processes and the exclusion of scientists from membership in the RACs<sup>13</sup>, produce, as Hawkins convincingly argues (2007, p. 106), a *problem of integration*: advice from scientists and advice from stakeholders are obtained from “parallel and separate channels” (Ibid.<sup>14</sup>) and there is a lack of opportunities for scientists and stakeholders to enter into mutual exchange in the process of producing advice.

## **5. The need for combining assessment and dialogue**

As pointed out by the recent NRC report on *Public Participation in Environmental Assessment and Decision Making* (Dietz and Stern 2008, p. 148) the value of integrating science and public participation and the relevance of non-scientists’ knowledge and expertise has been acknowledged for a range of management areas, including common-pool resource management (Dietz, Ostrom and Stern 2003), risk management (Stern and Fineberg 1996; Jaeger et al. 2001; Rosa, Renn, and McCright 2007), ecosystem and natural resource management (Dietz and Stern 1998) and impact assessment (Dietz 1987, 1988; for an overview see van Asselt and Rijkens-Klomp 2002). In this body of literature it is argued that both the public and the scientific community have substantial expertise, “but of different kinds and on different matters” (Dietz and Stern 2008, p. 148):

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<sup>13</sup> Scientists cannot be members of the RAC but “shall be invited to participate as experts in the work” of the RACs (EC 2004, Art. 6 (1)). Other non-members which shall participate as active observers are the Commission and national and regional administrations of the Member States; a representative of the Advisory Committee on Fisheries and Aquaculture; representatives of the fisheries sector and other interest groups from third countries (EC 2002, Art. 6 (2-4)).

<sup>14</sup> Scientific advice is obtained from the International Council for the Exploration of the Sea (ICES) and from the Scientific, Technical and Economic Committee for Fisheries (STECF), the European Commission’s own advisory body (EC 2002, Art. 33); stakeholder advice is obtained from the RACs and from the European Commission’s Advisory Committee on Fisheries and Aquaculture (ACFA) which shall represent all major groups of stakeholders at European level (Hawkins 2007, p. 106).

On the one hand, [...] the public often has detailed knowledge of the local context and everyday practices that is not readily available to the scientific analyst. And of course the public, rather than the scientific community, is the legitimate source of information about public values and preferences. On the other hand, scientific analysis is essential for understanding the dynamics of complex systems and assessing the uncertainty in how such systems evolve over time with different management actions. It is also valuable in systematically eliciting public views about values and preferences [...] (Dietz and Stern 2008, p. 148).

In this perspective the NRC's seminal work on risk characterisation introduced in 1996 the concept of "*analytic-deliberative processes*" (Stern and Fineberg 1996). This model of participation in environmental assessment and decision-making attempts to meet two major objectives: first, to enhance the competence in the assessment and decision-making processes and, second, to assign a fair share of responsibility to assess and manage risks to those who are or will be affected by the potential consequences.

We consider this concept helpful in promoting discussions on how to deal with the problems of integrating science and public participation in fisheries governance described above. It points to basic procedural requirements for this integration task. Two of the genuine concepts of participation presented in Section 2 of the paper at hand, the functionalist concept and the deliberative concept, lend themselves to spelling out these requirements in much more detail<sup>15</sup>. For the purpose of this paper, however, it will be sufficient to highlight the following key elements of the concept of analytic-deliberative processes and to explain in a bit more detail – adding to the outline of the deliberative concept of participation above – the deliberation term.

First, the concept of analytic-deliberative processes rejects the idea of risk characterisation being just "a summary or translation of the results of a technical analysis for the use of a decision maker" (Stern and Fineberg 1996, p. 1). Instead, it envisages a process in which the characterisation of risk incorporates technical aspects and relevant other aspects (social, economic, ecological, ethical, behavioural) and emerges from a combination of analysis and deliberation, more specifically, from an *iteration* between analysis and deliberation. While analysis shall be framed by deliberation outcomes, deliberation shall be informed by analytical results producing outcomes which shall frame further analysis, etc. Corresponding to the perspective summarised in the quote above, the analytical element includes not only technical expertise but also experiential, local and folklore knowledge in order to take account of the idiosyncratic features around the specific problem and the accumulated expertise of practitioners<sup>16</sup>. The deliberative element refers to incorporating the values and preferences of stakeholders and the wider public, but it is also the overarching principle guiding the integration of expertise, stakeholder interests and public concerns (Renn 2008, p. 333). The term *deliberation* refers to the style and procedure of decision making without specifying which participants are invited to deliberate. For a discussion to be called deliberative it is essential that it relies on mutual exchange of arguments and reflections rather than decision-making based on the status of the participants, sublime strategies of persuasion, or social-political pressure. Deliberative processes should include a debate about the relative weight of each argument and a transparent procedure for balancing pros and cons (Tuler and Webler 1999). In addition, deliberative processes should be governed by the established rules of a rational discourse. In the theory of communicative action by Habermas, the term discourse denotes a special form of a dialogue, in which all affected parties have equal rights and duties to present claims and test their validity in a context free of social or political domination (Habermas 1970, 1987). As mentioned above (Sect. 2), practical discourse can only aspire to

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<sup>15</sup> For a detailed explanation of the two components, analysis and deliberation, and a discussion of procedural implications for the risk governance process see Renn 2008, pp. 284-331.

<sup>16</sup> An often cited paper pointing out the value of experiential and practical knowledge is Wynne 1989.

the goal of an ideal speech situation but cannot achieve the full set of pre-conditions of this situation.

Second, the analytical-deliberative process leading to a risk characterisation should include early and explicit attention to the formulation (or *framing*) of the problem. The inclusion of interested and affected parties at this stage is considered imperative.

Third, the combination of analysis and deliberation in risk characterisation is especially necessary when acting in the face of *scientific uncertainty* and *social controversy*. Stern et al. (2002, p. 470) have pointed out (referring to Dietz and Stern 1998) that many common-pool resource settings (including marine fisheries) have these and further characteristics of situations that benefit most from broadly based analytic-deliberative decision processes. They state five situation characteristics calling for such processes (Ibid.; see also McCay 2002) which, as will be pointed out, apply to the fisheries setting as well:

- *multidimensionality of outcomes* – there are economic, environmental and social implications of both increasing threats to important fish stocks and the applied/applicable management measures;
- *scientific uncertainty about the resource* – there are high levels of uncertainty about the current and future state of fish stocks which pose particular problems in assessing the responses of the stocks to alternative management measures (Hawkins 2007, p. 30; Cochrane 2000; Finlayson 1998, pp. 33-80);
- *value conflict and uncertainty about those involved* – the move to an eco-system based approach to fisheries management (EBAFM) enhances the possibility of a deeper value conflict; this approach is aimed at involving various groups having different stakes and value preferences; Varjopuro et al. (2008, p. 151) stress the interaction between the value positions “use” and “conversation” as one dimension of the participation challenge in EBAFM;
- *mistrust of some actors by others* – there is a particular distrust of fishers both of the stock assessments and the scientific advice on management (which may be partly a result of their different perspectives on the abundance of fish and on the factors determining the abundance) (Hawkins 2007, p. 51); and there are deficits of trust of scientific experts into resource-users’ information, particularly catch and effort data, as well (Delaney et al. 2007, pp. 2-3);
- *the need to act before scientific uncertainties can be resolved* – the constant decline of fish stocks creates this need.

Under these conditions – also typical of many major risk problems – scientific and other forms of expertise, structured thinking and serious deliberative efforts are required (Renn 2008, p. 330). In terms of risk governance, it has been pointed out that deliberation is required for three major tasks. First, deliberative processes are required to define the role and relevance of the different forms of knowledge for making informed choices. Second, deliberation is needed to find the most appropriate way of dealing with uncertainty and to set efficient and fair trade-offs between potential overprotection and underprotection (handling uncertainty). As Finlayson rightly states, “... coping with uncertainty is not primarily a technical problem but a social problem” (1998, p. 153). Third, deliberation needs to address the wider concerns of the affected groups and the public at large, particularly if the risks are associated with high ambiguity (Renn 2008, p. 294.) Depending on the structure of the discourse and the underlying rationale deliberative processes can enhance understanding; generate new options; decrease hostility and aggressive attitudes among the participants; explore new problem framings; enlighten policy makers; produce competent, fair and optimised solution packages; facilitate consensus, tolerated consensus and compromise (Renn 2004, 2006, 2008). The 2008

NRC report emphasises that analytic-deliberative processes are more likely to produce satisfactory results if they

are transparent regarding decision-relevant information and analysis, are attentive to both facts and values, are explicit about assumptions and uncertainties, and provide for independent review and iteration to allow for reconsideration of past conclusions (Dietz and Stern 2008, p. 152).

As set out above, fisheries governance – as does the governance of highly complex, uncertain and/or ambiguous risks (Klinke and Renn 2002; IRGC 2005, pp. 29-31; Renn 2008, pp. 74-78) – faces conditions which necessitate serious analytic-deliberative efforts. These should, as suggested by the concept of analytic-deliberative processes, include affected and interested groups from an *early* stage in the governance process. The following section provides some suggestions for how to achieve a more structured engagement of the science advisers and political managers with affected and interested groups in a way which includes the earliest stage of the governance process and maximises valuable input (knowledge, interest, value preferences) into the governance process. These suggestions have been developed in a study on food safety governance (Dreyer and Renn 2009b; Dreyer and Renn 2008) which has been inspired by the conceptual work of the International Risk Governance Council (IRGC 2005; Renn and Walker 2008) which in turn is inspired by the NRC's concept of analytic-deliberative processes. They promote the idea of *inclusive governance* based on the assumption that affected and interested parties have something to contribute to all major steps of the governance process and that mutual communication and exchange of ideas, assessments and evaluations improve the final decisions, rather than impede the decision-making process or compromise the quality of scientific input and the legitimacy of legal requirements (see also Webler 1999; Renn 2004). As the term 'governance' implies, analysing and managing risks cannot be confined to economic actors (or resource-users) and regulatory agencies. It rather involves a wider array of actors: political decision makers, scientists, economic players, and civil society actors.

## **6. Matching the purpose of participation with the respective governance stage**

A recent publication on the role of expert advice in the governance of science and technology states that "public engagement is not a stage of governance that can be completed, tidied up and filed away" (Stilgoe et al. 2006, p. 53; see also Jasanoff 1993). Instead, public engagement should be understood as an inherent element of the whole process of governance and thus would raise the more exigent question of how to incorporate the perspectives and specialized knowledge of interested and affected parties early and meaningfully into the process. This question, as we have argued above, is relevant to the governance of especially challenging risks and some resources with common-pool characteristics including fisheries as well.

For risk governance it has been proposed to address this question in a first step by distinguishing *different purposes* of participation that are served at the different stages of the governance process (Dreyer and Renn 2009b; the stage-specific participation approach is summarised in table 2 below). Four major stages of governance are distinguished: 'assessment' and 'management' as the two well-established components of risk analysis, and two additional stages which are 'framing' and 'evaluation'. The four-stage structure draws on the Integrative Approach to Risk Governance advocated by the International Risk Governance Council (IRGC 2005) which is represented diagrammatically in Figure 1 below<sup>17</sup>. In this

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<sup>17</sup> The framework, as presented in the 'White Paper, *Risk Governance - Towards an Integrative Approach*' of the International Risk Governance Council (a private, independent, not-for-profit Foundation based in Geneva, Switzerland and founded in 2003) was the culmination of a major effort involving numerous individuals, both members of the IRGC's Scientific and Technical Council and other leading authorities in risk related research

section, we will first highlight those features of the concept on which the claim to offer an *integrative* approach to risk governance is mainly based. Then, the four governance stages that the concept distinguishes will be outlined and the positioning of the framing and the evaluation stages at the interface of assessment and management highlighted. Finally, we will propose to distinguish between four discourse categories to define the different purposes of participation served at the four governance stages.

#### *The IRGC's Integrative Approach to Risk Governance*

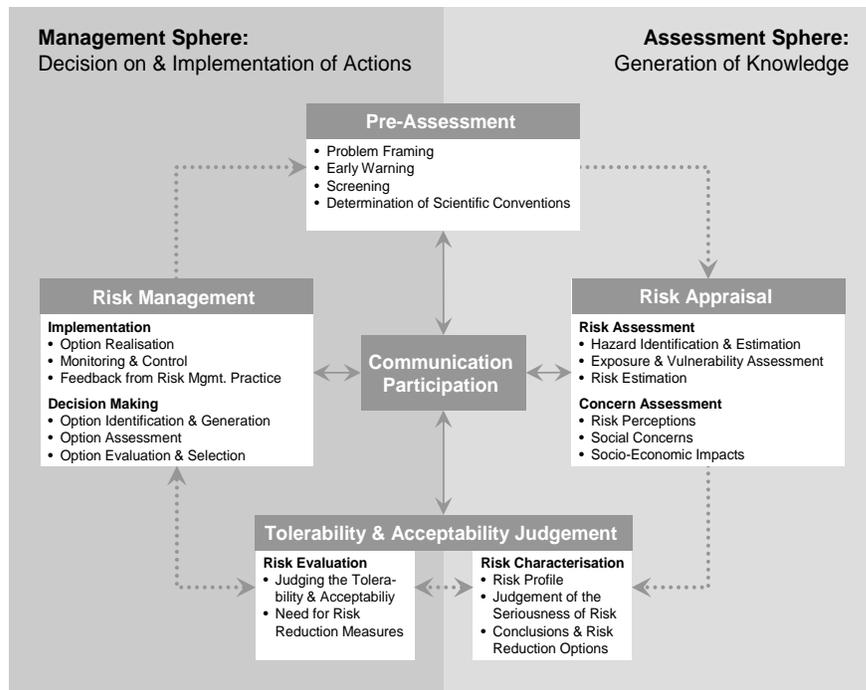
'Risk governance' as understood and promoted by the IRGC model includes the three conventionally recognised elements of *risk analysis* (risk assessment, risk management and risk communication; NRC 1996), extends, however, beyond these elements. Risk governance includes in addition the consideration of the legal, institutional, societal and economic conditions under which a risk is dealt with. Moreover, it comprises the involvement of those actors who represent those conditions (such as governments, administrations, economic actors, scientific organisations, and civil society actors including environmental and consumer groups) as well as the coordination of different and possibly conflicting perspectives, interests, objectives and activities of these actors. Therefore, the IRGC model comprises a set of innovative components. These include (amongst others):

- the two additional stages of 'pre-assessment' (with 'framing' as one major component) and 'risk characterisation/evaluation', which complement the 'classical' main stages of risk assessment and risk management (risk communication is defined as an integral part of all four stages, i.e. as a continuous process);
- the assessment of societal concerns and risk perceptions ('concern assessment') as part of the scientific risk assessment; i.e. risk governance institutions are called upon to consider in their appraisal of risks input from a broader base of scientific knowledge, from the natural sciences and the social sciences;
- based on the idea of inclusive governance the structured involvement of the four major actors in risk decision making, i.e. of political, scientific, business, and civil society actors, into the governance process.

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from around the world. Its purpose is to support IRGC's investigation of risk issues, the governance processes and structures pertaining to them, and the development of policy recommendations for addressing important deficits in risk governance. Since the publication of the White Paper in 2005 the applicability of the framework has been analysed and discussed in relation to various areas (see Renn and Walker 2008). The development of the food safety governance framework which is presented in Dreyer and Renn 2009a is inspired by several of the key innovative features of the IRGC governance concept.

**Figure 1:** A four-stage process of risk governance (with communication and participation as cross-cutting activities)



Source: IRGC 2005, slightly modified

### The four-stage design of the governance process

In IRGC's concept the first stage of the risk governance process comprises activities carried out before assessment starts; accordingly, it is entitled as **'pre-assessment'**<sup>18</sup>. In this phase, the conditions for the assessment and evaluation of risks and concerns are determined. A core component of this exercise is 'framing', i.e. the definition of the problem in question (in consideration of possible different perspectives of how to conceptualise the issue) and, related to that, the determination of the significant context conditions and the assessment boundaries (IRGC 2005, pp. 23ff.). With these specifications it is determined whether a given phenomenon shall be understood as a risk at all, and if yes, which causal effect chains shall be included in the risk assessment, which parameters shall be integrated in or excluded from the risk assessment (Tversky and Kahnemann 1981; Goodwin and Wright 2004), and what shall be the scope of the assessment of public concerns and risk perceptions. Further components of pre-assessment besides framing are the functions of 'early warning' (the systematic search for new hazards), 'screening' (a preliminary risk assessment which serves allocation to different assessment approaches), and the 'selection of conventions (scientific, political, legal) and procedural rules' needed for a comprehensive scientific appraisal of the risk (i.e. for assessing the risks and the *concerns* related to it, see below).

<sup>18</sup> The title 'pre-assessment' does not mean that the different steps that are part of the pre-assessment exercise are always taken before assessments are performed. Rather they are logically located in the forefront of assessment and management.

The second stage is devoted to the scientific appraisal of risks. It is a distinctive feature of the IRGC governance framework that **'risk appraisal'** comprises a risk assessment and a **'concern assessment'** (IRGC 2005, pp. 34ff.). The underlying assumption is that both, knowledge about the physical impacts of technologies, natural events or human activities (that is the typical basis for risk assessment) and knowledge about the concerns that people associate with these sources of risks are a key input to assessing a risk's acceptability and to designing appropriate risk management strategies. Accordingly, risk appraisal is envisioned as having two process stages: first, natural and technical scientists use their skills to produce the best estimate of the physical harm that a risk source may induce; secondly, social scientists including economists identify and analyse the issues that interests groups, individuals or society as a whole may attribute to the risk problem in question<sup>19</sup>. Based on the results of risk assessment and the identification of individual and social concerns this second process stage also investigates and calculates the social and economic implications of risks. Of particular interest in this context are financial and legal implications, i.e. economic losses and liabilities, as well as social responses such as political mobilisation.

After all important data on the impacts that a risk source may induce have been gathered, these need to be interpreted, summarised and evaluated. On the IRGC's model this is performed in the two steps of 'risk characterisation' and 'risk evaluation' (IRGC 2005, p. 36ff.). The first step, **'risk characterisation'**, determines the evidence-based component for making the necessary judgement on the tolerability and/or acceptability of a risk<sup>20</sup>. In the course of this exercise, scientists are asked to design a multi-criteria profile of the risk in question, make a judgement about the seriousness of the risk and suggest potential options to deal with the risk. The step **'risk evaluation'** determines the value-based component for making this judgement. It broadens the picture to include pre-risk aspects such as choice of technology, social need for the specific risk agent, risk-benefit balances, political priorities, potential for conflict resolution and social mobilisation potential. The main objective here is to arrive at a judgement on tolerability and acceptability based on balancing pros and cons, testing potential impacts on quality of life, discussing different development options for the economy and society and weighing the competing arguments and evidence claims in a balanced manner<sup>21</sup>.

The fourth stage then concerns **'risk management'**. It starts with a review of all relevant information, in particular, that from the combined risk appraisal, consisting of both a risk assessment and concern assessment. This information, together with the judgements made in the phase of risk characterisation and evaluation, form the input material on which risk management options are being assessed, evaluated and selected (IRGC 2005, pp. 40ff.).

#### *Framing and Evaluation as activities at the interface between assessment and management*

Advocating the addition of the two stages of pre-assessment and risk characterisation/evaluation to the traditional three phases of handling risk, i.e. risk assessment, risk management and risk communication, is not to claim to propose something entirely new: in current risk governance systems pre-assessment and risk characterisation/evaluation

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<sup>19</sup> The analysis of individual and societal perspectives of a risk under consideration can draw mainly on the insights, concepts and methods of risk perception research.

<sup>20</sup> The term **'tolerable'** refers to an activity that is seen as worth pursuing (for the benefit it carries), yet it requires additional efforts for risk reduction within reasonable limits. The term **'acceptable'** refers to an activity where the remaining risks are so low that additional efforts for risk reduction are not seen as necessary (IRGC 2005, p. 36).

<sup>21</sup> It should be noted that this elaborate procedure is only necessary if tolerability and/or acceptability is disputed and if society faces major dissents and conflicts among important stakeholders. If so, the direct involvement of stakeholders and the public will be a prerequisite for successful risk governance.

activities are also carried out, inevitably, so to speak. However, this occurs in a manner that is mostly informal and not transparent. The step of evaluation is, moreover, exercised in a manner that is largely implicit and ad-hoc (in fisheries governance, this implies that, when the total allowable catches finally agreed by the Council of Ministers deviate from the scientific advice, there is usually no clarity and transparency over the underlying reasons; cp. Delaney et al. 2007, p. 6). Moreover, in many risk areas responsibilities are not clear: is evaluation a task carried out/to be carried out by assessors or by managers or by both?

The key feature of framing (as a component of pre-assessment) and risk evaluation is that they constitute *interfaces* between the assessment stage, which is focused on knowledge generation and collection, and the management stage, which is focused on value-laden decision-making in a jigsaw puzzle of facts, uncertainties, stakeholder interests, and public concerns. They draw on *both* scientific knowledge and political and socio-economic considerations: the tasks of framing need to be governed by societal values (stating the goals, objectives and contextual conditions) and inspired by what we already know about the risk (suspected impacts, exposure, persistence, and others). Similarly, during the phase of evaluation, the tolerability/acceptability judgement requires a good understanding of the web of evidence, residual uncertainties, and ignorance (i.e. of the scientific characterization of the risk), as well as a judgemental competence for making the necessary trade-offs between risk, benefits and other relevant impact categories. What society is supposed to tolerate or accept can never be derived from looking at the evidence alone. Likewise, evidence is essential if we are to know whether a value has been violated or not (or to what degree). In that sense, framing and evaluation are, so-to-speak, ‘hybrid’ activities. The formalisation of these two activities as key components of governance stages in their own right is a way to account for the inherent *inter-linkages between the scientific and political aspects* of risk governance (which are in the current risk governance systems often obscure and lie outside of the view of democratic accountability), and, at the same time, sustain the functional (and reasonable) differentiation between assessment and management activities. Framing and evaluation tasks should be carried out jointly by scientific advisors, political managers and stakeholders in order to account for the fact that foremost in the performance of these tasks both *value and factual judgements* are of high relevance and need to converge for reaching conclusions.

The IRGC’s four-stage governance concept can provide orientation in the development of participatory procedures and structures of EU-level fisheries governance which transcend the “decisionist” governance model and move towards a “transparent” (inclusive) governance model<sup>22</sup>. The decisionist model (which superseded the “technocratic” model, wherein objective science is seen to directly inform policy making) corresponds closely, although not exactly, to that illustrated by the National Research Council’s ‘Red Book’ (NRC 1983). This seminal work established the division between the scientific aspects (‘risk assessment’) and political and value aspects (‘risk management’) within the overall process of risk analysis. Moreover, it recognised that political decision making required inputs other than science in order to inform decisions, and that other legitimate factors (such as those relating to socio-political and economic objectives) needed to be taken into account in addressing risks. The “transparent” (or inclusive) model of governance is inspired by the NRC’s 1996 report on risk characterisation (Stern and Fineberg 1996) in which the *interface* between the assessment and management has been stressed and in which science, politics, economic actors and representatives of civil society are invited to play a role in both management *and* assessment. Of special importance in this model are the inclusion of *framing* and the stage of *evaluation* as intermediary stages between assessment and management.

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<sup>22</sup> The distinctions between different models of science-based policy-making are taken from Millstone et al. 2004; see also Ely et al. 2009.

The four-stage design avoids the naïve separation of facts here and values there as suggested and advocated by the decisionist model. The current system of EU fisheries governance – with scientific advice coming from ICES and from STECF and stakeholder advice coming from ACFA and the RACs and taken after the scientific advice’ incorporation into management proposals (Hawkins 2007, p. 106) – corresponds closely to this model. The decisionist model has, however, several major flaws: The selection of relevant “facts” relies largely on the choice of concerns (i.e. on the framing of the problem), and the value preferences of those participating in decision-making on management measures are at least partially dependent on the knowledge about the likely consequences of each management option. In addition, uncertainty about the resource and the consequences of management measures (including non-action) make it necessary that decision-makers and the affected and interest groups interact directly with scientific experts and are informed on the present state of the art.

At the same time the four-stage design of the IRGC governance concept escapes the quandary created by post-modern relativity by honouring (through the distinction of assessment and management) the analytical distinctions between the factual world and the world of values even if they clearly interact. The definition of the purpose of participation in relation to the respective governance stage serves (amongst others) as a safeguard against an undue politicisation of the science process and a loss of trust in the scientific advisory institutions due to concerns that they can no longer stand above the political fray. Such concerns have been increasingly raised in recent discussions over the question of whether the science advisory process should be opened up to stakeholder involvement as well (Rice 2005, p. 253; Hawkins 2007, p. 112). In the suggested governance framework it is explicitly *not* the task of stakeholders and representatives of the wider public at the assessment stage (i.e. the stage of knowledge production and analysis) to deal with normative questions pertaining to the desirability of either a given threat or management measures for tackling the threat<sup>23</sup>. These normative issues are part of the evaluation and management phases. Normative questions pertaining to the specification of protection goals (e.g. “use vs. conservation”, Varjopuro et al. (2008, p. 151), the level of protection, or priorities in conjunction with competing protection goals are part of the framing stage which precedes the assessment stage.

#### *Stage-specific purposes of participation*

In order to define the different purposes of participation served at the four governance stages we propose to distinguish between *four discourse categories*: a ‘design discourse’ (generic to the framing stage); an ‘epistemic discourse’ (generic to the assessment stage); a ‘reflective discourse’ (generic to the evaluation stage); and a ‘practical discourse’ (generic to the management stage)<sup>24</sup>. Each of the four discourses produces different types of outcomes that are fed into the next governance stage and enlighten the politically accountable decision makers. The following paragraphs provide a brief description of the four discourses and the role participation takes in them.

Participation at the stage of framing means involvement at the earliest stage of governance. Participation here concerns contributing to a *design discourse*. This discourse is aimed at defining the respective problem and setting the terms of reference for the assessment,

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<sup>23</sup> This corresponds with Hawkin’s claim (2008, p. 113) that a distinction should be drawn between issues of collaboration involving fishers and scientists in stock assessment work and representation of stakeholders in the wider policy process; in assessment stakeholders should be chosen as individuals with expert knowledge in management as representatives of particular interests.

<sup>24</sup> This distinction forms part of a structured approach to participation in food safety governance proposed in Dreyer and Renn 2009b; The labels for the different discourse types were first introduced by Renn 1999.

including the scope, focus and design of assessment (this comprises a definition of the role and relevance of the different forms of knowledge for making informed choices), and at specifying the way (breadth, concrete procedures) in which stakeholders and/or the wider public should be included in the assessment process (e.g. through participatory modelling).

The *epistemic discourse* at the stage of assessment comprises communication processes, in which experts of knowledge (not necessarily scientists) grapple with the clarification of a factual issue. The goal of such a discourse is the representation and explanation of a phenomenon as close to reality as possible. By knowledge, we refer to *systematic* knowledge collected by established means of natural and social sciences and *experiential and practical* knowledge collected by interactive techniques such as hearings, focus groups, or participatory modelling. Both types of knowledge are important for describing what we generally know about the risk and what we have learned in dealing with the risk or a similar risk source in the past. Subject to the provisions of framing, stakeholders and also the wider public may contribute to the broadening and refining of the infrastructure of knowledge and information upon which evaluation and management decisions draw. It is important to note, that it is *not* the task of stakeholders and representatives of the wider public in the epistemic discourse to deal with normative questions pertaining to the acceptability or tolerability of either the risk itself or management measures for dealing with the risk. These normative issues are part of the evaluation and management phases. They are based on value judgements about what is ‘desirable’ rather than what is ‘true’.

The *reflective discourse* encompasses communication processes dealing with the interpretation of factual issues, the clarification of preferences and values and a normative judgement of tolerability or acceptability. It is mainly suitable for balancing pros and cons, weighing the arguments and reaching a balanced decision on the basis of the epistemological discourse and social values and preferences. The main purpose of participation here is to ensure that all values and preferences are included in the weighing procedure, and that the final judgement reflects the societal balance between innovativeness and caution.

The *practical discourse* involves communication processes aimed at the identification, assessment, and selection of different management measures for reducing and managing ‘intolerable risks’ or ‘tolerable but not acceptable’ risks. This discourse looks at the variety of possible interventions, addresses the pros and cons for each measure or package of measures and suggests a set of measures that appear to be effective, efficient and fair. The main purpose of participation is here to assure that relevant knowledge and different preferences are considered in the conclusions on the selection of one or more management measures.

**Table 2** *Matching stakeholder and public participation with risk governance stage*

<b>Governance stage</b>	<b>Style of discourse</b>	<b>Participation purpose</b> <b>As a contribution to:</b>
Pre-Assessment	Design	Framing the problem and drawing up terms of reference
Assessment	Epistemic	Gathering of knowledge and information
Evaluation	Reflective	Value-based judgements on tolerability/acceptability
Management	Practical	Selection of appropriate measures

Source: drawing on Dreyer & Renn 2009b

## 7. Summary and concluding remarks

The Regional Advisory Councils are declared to be a mainstay of the EU's revised Common Fisheries Policy. The RACs shall satisfy the stakeholders' demand for better involvement (and thereby reduce deficits in regulatory compliance and enforcement) and enrich the decision-making process in the fisheries sector by the stakeholders' knowledge and experience. Stakeholder involvement in fisheries governance has gained mainstream support in Europe as one response to developing a sustainable fishery. Still, it remains a highly disputed issue. With the RAC's ongoing establishment these questions have come to the fore: How does the knowledge of the scientific experts on which the (established) science advisory processes are based relate to the knowledge of the stakeholders that are fundamental for the RACs' advisory processes? Is it appropriate for stakeholders to be involved only *after* the science advice has been incorporated into management proposals and to play no real part in the earlier stages of the governance process? Are the stakeholders' special knowledge and experience not needed in the science advisory processes as well? And if this was answered in the positive: how do we ensure that stakeholder involvement in the scientific advisory processes do not put these under political and/or economic pressure?

We have argued that dealing with these questions can benefit from interchange with a growing body of work on public participation in the governance of environmental and technological risk. Since recently the term 'governance' has found its way into the literature on collective handling of fisheries issues. Describing the topic of investigation as "participation in fisheries governance" (Gray 2005) instead of "participation in fisheries management" is certainly related to the increased importance of "participation" as a major European *governance* principle and the great popularity of the governance concept in several disciplines and areas of research<sup>25</sup>. More specifically, the literature on governance in risk research and in other fields of research as well sees an important role to play for *non-state actors* – actors from the economy, science and academia, and from civil society (such as non-governmental organisations (NGOs)) – in governing choices in modern societies. Moreover, this concept is better suited to grasp issues associated with the question of *when* to involve stakeholders.

Drawing on the literature on participation in risk governance we have, first, suggested that the overall purpose of the establishment of the RACs needs further clarification. The relevant Council Regulation (EC 2002) suggests a *functionalist* view of participation but there is still lack of clarity over the question whether, and if yes, how, the knowledge of the different sources (scientific experts, resource users, additional affected interests) shall be synthesised within the overall governance process.

Secondly, we have argued that the especially challenging conditions of fisheries governance – multidimensionality of outcomes, scientific uncertainty about the resource, value conflict and uncertainty among those involved, mistrust of some actors by others, and the need to act before scientific uncertainties can be resolved (Stern et al. (2002, p. 470, referring to Dietz and Stern, 1988) – require that the analytic efforts of fisheries governance are complemented with serious *deliberative* efforts.

Thirdly, we have set out *implications* of a combination of the functional concept with the deliberative approach for the design of the fisheries governance process. Framing and evaluation, the two phases in which factual and value judgements converge in task performance, would need to be introduced as *interface* tasks carried out jointly by scientists,

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<sup>25</sup> During the last decade the term governance has experienced tremendous popularity also in the literature on international relations, comparative political science, policy studies and sociology of environment and technology.

political decision-makers and stakeholders within specified procedures and structures. Participation and deliberation should generally be structured along the four-stage process. Systematic involvement of stakeholders only at the stage of evaluating management proposals (as it occurs through the Regional Advisory Councils) is insufficient if the objective is to make full use of the valuable input that stakeholders can provide to the process – knowledge, values, preferences – and to improve coordination between science, stakeholders, and political decision-makers throughout the whole process especially in cases of high complexity, uncertainty, and conflict potential<sup>26</sup>. The four-stage design of the governance process allows for close cooperation between science and stakeholders while the analytical and functional distinction between the “search for truth” and “judgements on desirability” is sustained. It can improve transparency and political accountability of the fisheries governance process because there would be more clarity over the nature of the reasoning underlying governance outcomes, in particular over the way in which knowledge and value inputs relate to management decisions.

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<sup>26</sup> Deliverable 2.3 (“Review of projects dealing with participatory methods in fishery management”), which is still work in progress, will discuss and illustrate this perspective in relation to selected cases.

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