

Development of Ethical Bio-Technology Assessment Tools for Agriculture and Food Production

Interim Report Ethical Bio-TA Tools
(QLG6-CT-2002-02594)

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1 Introduction

1.1 Objective

The objective of 'Ethical Bio-TA Tools' (QLG6-CT-2002-02594) is to develop and improve tools for the ethical assessment of new technologies in agriculture and food production in general and modern biotechnologies in particular. The developed tools need to be designed for various purposes and contexts. They should facilitate ethical (bio)technology assessment by: 1) governmental and non-governmental regulators; 2) citizens/consumers and their organisations; and 3) economic actors in the food chain. All these actors need to address the ethical aspects of the introduction and application of new (bio)technologies in agriculture and food production. Their need for ethical advice, however, diverges with their respective roles and responsibilities.

The project addresses the various needs of the different actors by combining ethical (bio)technology assessment tools with the most pressing needs for ethical advice in agriculture and food production. The project thus identifies three sub-objectives in the development of ethical (bio)technology assessment tools. The developed tools should facilitate: 1) ethical decision-making by governmental regulators; 2) ethical opinion-formation by the general public; and 3) ethical decision-making by economic actors in the food chain.

The project has selected three tools that are deemed useful for addressing the aforementioned various needs. The tools that the project considers and studies with regard to the three sub-objectives are: 1) decision-making frameworks; 2) participatory arrangements; and 3) food chain value communication. These tools have been selected for further development in three substantive workpackages that constitute the main body of the project: WP1 - Ethical decision-making frameworks; WP2 - Consensus conferences; and WP3 - Benchmarking.

These three substantive workpackages WP1, WP2 and WP3 are in turn subdivided into four progressive tasks: A) Description; B) Evaluation; C) Development; and D) Application. This third interim report develops the respective tools 'decision-making frameworks' (chapter 2), 'participatory arrangements' (chapter 3) and 'food chain value communication' (chapter 4).

1.2 Decision-making frameworks

Chapter 2 flags that during the evaluative task, thirteen decision-making frameworks designated as potentially valuable were assessed against criteria of ethical soundness. As a result four frameworks were taken forward as part of the innovative task. This innovative task further reviewed these frameworks (ethical matrix, Delphi method, multi-criteria mapping and COGEM framework) through both critical analysis and practical application.

It is important to appreciate that two of the frameworks have been explicitly developed for dealing with the ethical dimension of biotechnology application, viz the ethical matrix and the COGEM framework. The additional two methods, the Delphi method and multi-criteria mapping, were developed as wider policy or participatory

methods. However, because the origin of a method and its original development do not unduly constrain its potential for application as an ethical tool, the innovative task looked at the potential of all four of these frameworks:

- The review of the ethical matrix (EM) has further revealed the need for explicit chronicling of the approach used and the way in which the cells of the EM have been determined, i.e. the specification of the principles for each of the interest groups.
- The review of the Delphi method has highlighted the fact that although the framework has shown potential as a useful ethical framework within the overall toolbox, the remote and anonymous nature of its application may suppress valuable ethical discourse.
- The review of the COGEM framework has highlighted its value as a way of exploring and potentially addressing the ethical consideration of biotechnology application. One of the original concerns about the method was that it was developed in a specific national setting, and as a result might be only applicable for use within the Dutch regulatory system. The review of the method within the Norwegian setting reveals that there is potential for transferability. However, the main concern of users, such as public policy makers, is that it restricts their ability to reflect on ethical issues within the context of the biotechnology review process and have the potential to establish a pre-agenda to the debate.
- In the case of the multi-criteria mapping method (MCM), the transparency of the method combined with the interactive elements of the approach when agenda setting, has been shown to be valuable, however further articulation of the method for this study would be worthwhile. The accessibility of the method also needs further development. The nature of the MCM method may not make it applicable for a diversity of uses, as the method requires quite a substantial commitment of resources. The issue of resource use may prevent some users from applying this method for specific tasks. Identification of this resource issue allows users to then explore other options and tools.

1.3 Participatory arrangements

Chapter 3 flags that a wide variety of participatory arrangements exists, including:

- Consensus conferences;
- Citizens' forum;
- PubliForum;
- Citizens' panel;
- Future workshop;
- Scenario workshop;
- Technology Delphi studies / Technology foresight
- Public hearing;
- Focus group;
- Referendum.

From this wide variety of participatory arrangements, consensus conferences have been selected for further development in WP2 because this model has the potential for making real public influence possible.

Chapter 3 presents a checklist with recommendations for the application of consensus conferences that distinguishes two phases, eight considerations and seventeen questions:

- 1 Initiation and planning
 - 1.1 Aims and purposes of the conference
 - 1.1.1 What purpose(s) will be served by carrying out the conference?
 - 1.1.2 Why is the consensus conference model thought to best serve these purposes rather than any other type of participatory arrangement?
 - 1.1.3 Is this the first time a consensus conference is being organised, or is it one in a series of several?
 - 1.2 Institutional setting
 - 1.2.1 What is the role and status of the organising body and the significance of its position as e.g. NGO, grass root, corporate or advisory to the parliament?
 - 1.3 Societal context
 - 1.3.1 What are the ways in which a consensus conference is expected to be perceived and received in the public?
 - 1.3.2 What is the democratic ideal that characterises the national political culture, and what is the way in which democratic legitimacy is attained within the political system?
 - 1.4 The conference topic
 - 1.4.1 Why is this particular topic chosen, and is it related to any power struggles or conflicts of interests?
- 2 Organisation and deployment
 - 2.1 Steering committee, preparation of the lay panel
 - 2.1.1 How will the composition of the steering committee affect the conference procedures?
 - 2.1.2 Is training a necessary prerequisite for lay participation, and what is thought to be achieved in this process?
 - 2.2 Selection of lay and expert panels
 - 2.2.1 Which strategy for selecting the lay panel would be most favourable?
 - 2.2.2 Which strategy for selecting the expert panel would be most favourable?
 - 2.3 Conference proceedings
 - 2.3.1 What is the primary role and contribution of the expert and lay panels respectively in the conference discussions?
 - 2.3.2 Which characteristics or qualities constitute experts as being expert, and laypersons as being laypersons?
 - 2.3.3 How are different knowledge forms being valued or prioritised in the conference discussions, and are any types of arguments seen as unacceptable or illegitimate?
 - 2.3.4 What is the role of the facilitator and what is expected to be his/her contribution?
 - 2.4 Presentation and dissemination of results
 - 2.4.1 How should the results of the conference be presented to the public and who should be present at this event?
 - 2.4.2 What role the media in the dissemination process should play?

1.4 Food chain value communication

Chapter 4 flags that food chain value communication is a process with three stages:

1. Self-clarification - Who or what is the 'moral self' in a corporate context, and which values and concerns are crucial for the corporation?
2. Other-clarification - Who are the 'moral others' that demand special efforts of corporations, and what are their main values and concerns?
3. Deliberative interaction - How can the moral position of the corporation be communicated?

In order to facilitate this three-stage process of food chain value communication the following non-linear stepwise approach with three stages and eleven steps is presented in chapter 4:

- 1 Self-clarification
 - 1.1 Integrity check - Who is the 'self' and what are the possibilities of ethical reflection?
 - 1.2 Concerns - Discussing eight main concerns
 - 1.3 Values - Filling in the ethical matrix
 - 1.4 Shared value structure - First three steps of value-tree analysis
 - 1.5 Defining responsibilities - Last three steps of value-tree analysis
- 2 Other-clarification
 - 2.1 Who are the stakeholders - Identify and prioritise stakeholders
 - 2.2 Analysing the eight concerns with regard to the stakeholders
 - 2.3 Reconsidering responsibilities with regard to the stakeholders
- 3 Deliberative interaction
 - 3.1 Debating a shared value structure with the stakeholder(s)
 - 3.1.1 Discussing eight main concerns
 - 3.1.2 Discussing values - Filling in the ethical matrix
 - 3.1.3 Composing a shared value structure - First three steps of value-tree analysis
 - 3.2 Negotiating responsibilities - Last three steps of value-tree analysis in interaction with stakeholder(s)
 - 3.3 Critical reflection and evaluation of the stakeholder dialogue

This stepwise approach applies at least four specific tools to facilitate food chain value communication:

1. A list of eight concerns to classify moral/ethical debates in agriculture and food production
 - 1.1 Food security
 - 1.2 Food safety
 - 1.3 Food quality
 - 1.4 Human welfare
 - 1.5 Animal welfare
 - 1.6 Ecological sustainability
 - 1.7 Transparency
 - 1.8 Traceability
2. An ethical matrix to organise these concerns as values on the interface of principles and actors

- 2.1 Three principles - Welfare, autonomy, justice
- 2.2 Five actors - Self, fellows (i.e. suppliers, customers, competitors, stockholders, employees, consumers, nearby residents), community, humans, animals
- 3. A value-tree analysis to prioritise values and corresponding actions
 - 3.1 Identify the first order value(s)
 - 3.2 Clarify its/their meaning with more specific second-order values
 - 3.3 Debate the different opinions and visions that pop up
 - 3.4 Associate the various values with goals and attributes
 - 3.5 Imagine actions that have to be performed or initialised in order to make a realisation of attributes/goals/values possible
 - 3.6 Define the actors that are well/best situated for the various actions and initiatives
- 4. A stakeholder salience map to identify the relevance of divergent stakeholders
 - 4.1 What is the stakeholder's power to influence the firm?
 - 4.2. What is the legitimacy of the stakeholder's relationships with the firm?
 - 4.3 What is the urgency of the stakeholder's claim on the firm?

1.5 Final task - Application

The objective of the next and final application task in Ethical Bio-TA Tools is to build on the results from the descriptive, evaluative and innovative tasks in order to deliver its results in four different yet related types of publication, each with its own target audience, contents and format:

- 1. The final report aims at bodies that are considering whether or not to apply a certain kind of ethical bio-technology assessment tools. The target audience is thus high-level decision-makers, i.e. those funding application of these tools. It should provide sufficient information to allow these bodies to decide whether or not to go ahead with the application of a certain tool.
- 2. The manuals are annexes to the final report for those that are doing the practical work in ethical bio-technology assessment. The target audience is thus the users, the facilitators, the practical guys. These manuals should be read when someone has decided to use a certain tool on the basis of reading the final report. Each manual will provide a concise description of a certain tool.
- 3. A special issue of the Journal of Agricultural and Environmental Ethics will present the academic justification of the output from the project.
- 4. A newly build website www.ethicaltools.info will gather all the information from final report, manuals and special issue.

2. Decision-making frameworks (WP1)

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2.1 Introduction

2.1.1 Building on the outcomes of the evaluative process

The main purpose of Task C was to build on the insights from stages Task A and Task B in order to further review and develop the selected frameworks. This task entailed concentrated deliberation and reflection on the existing methodologies and exploration of new approaches, in order to develop more robust and better-articulated decision-making tools. As a result of the previous characterisation, the process of development entailed testing and improving the protocols for the tools, such as the ethical matrix, rather than developing altogether novel approaches. The analysis in the task has resulted in changes to both the frameworks' basic structure and their mode of application.

The Task A work produced an initial map of philosophical type, institutional activities and practitioners' perceptions of the frameworks. During Task B the WP1 research group evaluated and extended this work by reviewing the frameworks being developed and applied, including characterising their role in providing a rational, comprehensive and transparent basis for ethical decision-making. Building on the initial characterisation of the original thirteen frameworks identified, the WP1 research group evaluated their applicability as frameworks. Each of the salient features of the frameworks were identified in this process and as a result it was possible to make preliminary evaluative judgements on which of these should be taken forward for further development in Task C.

The following four frameworks were evaluated to be of significant potential value to take forward in the Task C phase: (i) ethical matrix, (ii) Delphi method, (iii) multi-criteria mapping and (iv) COGEM framework.

One of the central roles of Task C was to clarify both the role of stakeholders and the implicit and explicit role of ethical principles in these approaches. In order to further develop the frameworks in terms of their theoretical basis and their process of application a number of focus groups and surveys were conducted. A form of SWOT analysis was conducted to assess the outcomes of this work. Modifications have been proposed in the light of criticisms made, and these will be further tested in Task D using workshops, which will involve individuals with a range of expertise.

The findings of the development stage appear to further strengthen the argument that a comprehensive toolbox is needed and that practitioners would benefit from a form of user manual that is able to set out these methodologies, identify strengths and weaknesses and flag up previous uses. The findings also highlight further opportunities for development that are not within the remit of this study. However,

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these findings are valuable for Task D when the research group approach the application of the frameworks.

The elements of the evaluative stage (Task B) were further improved and reviewed in Task C in order to form a number of evaluative themes in relation to the application of the frameworks. This phase will inform Task D, drawing on the evaluative judgements provisionally set out in Task B. This has allowed for an iterative and more effective process of review and development in the second half of the project. Task C has therefore focused on: (i) exploring the methodological aspects of the frameworks; (ii) setting out initial proposals for users; (iii) proposing adaptations to existing frameworks; and (iv) proposing process recommendations. It is intended that this will lead to good practice recommendations as set out in the user manual that will be produced in Task D.

2.1.2 Comparative review of the outcomes of the developmental phase

During this penultimate phase of the research project, the frameworks identified, characterised and evaluated in the earlier tasks have been further considered and developed by applying a number of coordinated review approaches to judge their appropriateness as ethical frameworks.

The justification for the selection of the four frameworks has already been discussed in the Task B report; but it is valuable here to review the research group's views on the potential for their further development. It is important to appreciate that two of the methods have been explicitly developed for dealing with the ethical dimension of biotechnology application, viz the ethical matrix and the COGEM framework. The additional two methods - the Delphi method and multi-criteria mapping, (the latter described by Stirling and Mayer) were developed as wider policy or participatory methods. However, because the origin of a method and its original development do not unduly constrain its potential for application as an ethical tool, the role of this developmental phase is to look at the potential of all four of these frameworks.

The outcome of the project is to develop a user manual that allows defined groups of users to access these frameworks. In order to achieve this, the research group followed a three-step process which:

- Set out detailed protocols of the methods;
- Explored possible avenues for development using limited trials and critical review;
- Further reflected on the ethical soundness of the methods as a result of Task C work.

In the first instance, protocols for each of the four specified methods were produced. This approach allowed the group to work through the methods identifying variations in applications and opportunities for further development, as well as identifying potential deficiencies of existing approaches. Although this included reflecting on all thirteen methods, only the designated four frameworks were subjected to more detailed appraisal.

Following this approach it has been important to examine developmental opportunities by applying the frameworks to a discrete number of cases, thus trialing them in a number of small-scale review studies. It has not been possible to do this for all four of the methods as a result of the nature of their application (i.e. time and resource limitations). However, by reviewing the details of the methodologies and

producing a detailed step-by-step description of how the methods are applied, this has allowed the research group to examine developmental opportunities for the methods. These have been in the form of improving the structure of the frameworks, or clarifying explicit inclusion of ethical principles so the nature of the outcomes of the framework is clear. This has allowed the researchers to propose modifications to the methods that improve the transparency of the approach for either the participants or the users of the outcomes, such as politicians and policy-makers. All of these aspects help clarify not only the application of the method and the ease with which it can be applied by non-specialists, but also the quality and consistency of the information that is derived from this process.

Several overarching findings are described here and the detailed findings are included in the following chapters. The review of the ethical matrix (EM) has further revealed the need for explicit chronicling of the approach used and the way in which the cells of the EM have been determined, i.e. the specification of the principles for each of the interest groups. These findings are tentative; more robust conclusions will be possible when the expert EM workshop has been conducted by UNOTT. The review of the Delphi method through the two trials in Norway and the UK has highlighted the fact that although the framework has shown potential as a useful ethical framework within the overall toolbox, the remote and anonymous nature of its application may suppress valuable ethical discourse.

The review of the COGEM method has highlighted its value as a way of exploring and potentially addressing the ethical consideration of biotechnology application. One of the original concerns about the method was that it was developed in a specific national setting (i.e. The Netherlands), and as a result might be only applicable for use within the Dutch regulatory system. The review of the method within the Norwegian setting reveals that there is potential for transferability. However, the main concern of users, such as public policy makers, is that it restricts their ability to reflect on ethical issues within the context of the biotechnology review process and has the potential to establish a pre-agenda to the debate.

In the case of the multi-criteria mapping method (MCM), the transparency of the method combined with the interactive elements of the approach when agenda setting, has been shown to be valuable, however further articulation of the method for this study would be worthwhile. The accessibility of the method also needs further development. The nature of the MCM method may not make it applicable for a diversity of uses, as the method requires quite a substantial commitment of resources. The issue of resource use may prevent some users from applying this method for specific tasks. Identification of this resource issue allows users to then explore other options and tools.

In terms of the next steps for the application phase, the findings have allowed the research group to propose further developments for these four frameworks in terms of their fundamental aspects, as well as the context of use and the method of application. This has resulted in the identification of strengths and weaknesses of the methods (a SWOT analysis). These outcomes will be included in the user manual produced in the final phase to help practitioners access these methods, while identifying their limitations.

Following completion of Task C, the research group will focus on a number of key aspects in the final phase, Task D. The key focus of Task D will be to: (i) determine how best to assist practitioners access these methods; (ii) determine how best to allow users to grasp the process through a clear and user-friendly method description; (iii) produce a SWOT analysis for the methods and (iv) produce case

study information on previous applications. In particular, the Task C results have allowed the research group to identify a number of important outcomes from the use of the methods that will inform users. During the application phase (Task D) it is important that the research group focuses on the strengths of the methods and potential for further improvement. It will also be valuable to identify the deficiencies and how these can be managed by users; the opportunities for further development and the threats to use, highlighting how methods can be applied in specific settings; and also how they might be misused.

The outcomes of this phase have included identifying the key questions for new users. These include: (i) what are the outcomes of framework use in terms of the quality of the information provided? (ii) how and in what context could the framework be used, and what resources limit aspects of the method? (iii) how do these frameworks fit within an overall toolbox of participatory and decision-making tools? (iv) what skills are needed to apply these methods and are skilled practitioners needed in order to apply this method appropriately and effectively?

2.2 Development of the key frameworks

2.2.1 Defining the protocols for applying the ethical frameworks

During the evaluative phase of the project (Task B), the thirteen methods designated as potentially valuable as ethical frameworks were assessed against the criteria of ethical soundness. As a result four methods were taken forward as part of the development phase (Task C). In this development phase these methods (ethical matrix, Delphi method, multi-criteria mapping and COGEM framework) have been further reviewed through both critical analysis and practical application.

In order to test the protocols of these methods, it was important to apply them in a number of trials against a pre-defined case study. The defined case study used was the development and use of genetically modified (GM) salmon. This was selected as a case study to test the various frameworks because it is an issue of topical interest, especially in Norway. There is a number of emerging technological issues in this field, in particular the issue of technological uncertainty. Both NENT and UNOTT have had experience in mapping some of the emerging ethical issues of this technology. Examining the current literature, few studies examining the ethical dimensions of GM fish have been conducted. The research group felt it was important to try out the methods on a test case, as this case of approval/disapproval of marketing and production of a GM Salmon had been presented to the Ethical Board for Patenting Issues in Norway, where NENT is the secretariat. The case came with substantial documentation, and the research group felt that this presented a unique opportunity to use the frameworks. However, it should be noted that this does not preclude the use of other case studies in the application phase (Task D).

Before applying the frameworks to a biotechnology test case, an important part of the developmental phase was to detail the protocols of the frameworks. This will be essential not only when developing the user manual, but also to identify developmental opportunities and to map out the frameworks' strengths and weaknesses.

2.2.2 The ethical matrix

A number of organisations have been exploring methods to identify, assess, and manage wider social and ethical issues raised by the use of biotechnologies. As discussed above, one of the emerging methods is the ethical matrix (EM)³. The EM was developed to map and aid the management of issues raised at the various stages of biotechnology development. It has been used in a number of different forms and for different purposes, e.g. as a stakeholder communication tool and as part of stakeholder engagement strategies.

It has therefore been important in this part of the project to analyse the EM's previous use, in particular identifying the conceptual basis of the method in relation to the notion of ethical soundness defined in Task B. In terms of the conceptual basis of the framework, it is at its simplest level a checklist of concerns, which are based on established ethical theory. However, it can also be used as a means of promoting structured discussion.

The EM has been adapted for a number of uses and topics⁴. This adaptability is facilitated through the specifications of the impacts for designated interest groups. The interest groups, the weighting of each cell of the EM and even the appropriateness of the principles may all be challenged or modified by those using it. It thus helps individuals reflect on potential impacts and encourages participants to imagine outcomes for other interested parties. At the very least, it ensures that more than the usual narrow range of concerns gets an airing.

Several different versions of the EM have been applied to different topics. It is therefore important to clearly define the type of EM that will be applied in any specific circumstances (e.g. workshops, committee deliberations). In particular, it is important to clearly state the interest groups that are included and the specifications of the principles for the pre-defined interest groups. The inclusion of the subsequent specifications of the principles and interest groups included in the EM depends partly on the issue at hand. A critical factor is that 'ethical standing' is claimed for all affected parties specified. That is to say, it might be claimed (at least by some people) that all interest groups are subjects of ethical consideration in their own right, and not just means to others' ends.

A protocol has been set out to contextualise the use of the EM in its different forms and to provide appropriate guidance for potential users. The EM protocol provides advice on the effective use of the EM, and, in particular, it aims to ensure that it is used in a consistent and transparent manner.

2.2.3 COGEM

The Dutch Commission on Genetic Modification (COGEM) developed the COGEM framework in 2002. COGEM's role is to advise the Dutch government about the risks of using genetically modified organisms (GMOs) and to inform the government about ethical and societal issues associated with genetic modification. Assessment of any given GMO is either instigated by the committee itself or by the Ministry as a result of an official request to the Committee.

³ Mepham, T.B., 'A framework for the ethical analysis of novel foods: the ethical matrix', *Journal of Agricultural and Environmental Ethics* (2000) 12, 165-76.

⁴ Mepham, T.B., 'The role of food ethics in food policy', *Proceedings of the Nutrition Society* (2000) 59, 609-18.

The COGEM framework applies both utilitarian weighing of outcomes, and deontological principles represented by the 'proportionality principle'. It also includes elements of casuistry where the knowledge gained from conducting an assessment satisfactorily is applied to a new assessment. By mapping relevant similarities and differences, former solutions may be used as norms for the new case. The COGEM method consists of both a procedural approach that is used to secure a standardised way of going through a decision-making process and a substantive approach, which arranges values in relation to their specific goals. Central pillars in the framework are both the precautionary and the proportionality principles.

The standardisation of the procedure can be viewed as a checklist as detailed below, with certain parameters defined by the 'institution' conducting the assessment. In this review of the COGEM process, the Research Group focused on an application that is in the form of a checklist. The process is as follows:

1. Confirm the decision to carry out an assessment using the COGEM method;
2. Explore the parameters within which the process must be carried out and conditions created so that it can be carried out fairly and justly. This encompasses hearings, reports and collection of both arguments and facts from diverse expertise, i.e. from scientists, sociologists, ethicists, etc;
3. Check whether limit values have been or are likely to be affected. This includes evaluating whether a previous socio-ethical assessment has been carried out, i.e. deciding whether the 'gate' can be passed. This consists of i) a risk assessment and ii) a bureaucratic procedure. The risk assessment explores whether the product exceeds any limit values of risk or if it fails to comply with international human rights standards. The bureaucratic procedure controls whether it has been through a similar socio-ethic procedure earlier. If the product fails on any of these points the procedure stops;
4. Describe potentially affected values that can be taken into consideration. COGEM has developed a self-assessment questionnaire that the applicant may fill in as a part of identifying these goals and values;
5. Describe the aims to be achieved. This is interlinked with the values affected by the product and the values that are collected are amongst the same as in the previous step. The values are also to be assigned their respective weights;
6. Consider the relative merits of the aims and values concerned. Here the different values and goals are assigned to each side of the balance. In practice the COGEM framework separates perceived positive impacts on values from perceived negative impacts on values;
7. Advice sent on to the decision-making body. This advice takes the form of a '*no, unless...*' or a '*yes, if...*'. The difference here is the burden of proof, where the former lays the burden of proof on the applicant and the latter lays the burden of proof on the granting body.

2.2.4 Multi-Criteria Mapping

Multi-criteria mapping (MCM) as applied to biotechnology assessment was developed by Stirling and Mayer⁵ as a new approach to assist decision-makers manage technological risk. The context of this development was the claim that conventional risk assessment methods fail to provide a reliable 'map' of the key technical and social

⁵ Stirling, A. & S. Mayer, *Rethinking risk. A pilot multi-criteria mapping of a genetically modified crop in agricultural systems in the UK*. SPRU, University of Sussex, Brighton 1999.

issues from which policy makers might hope to make more transparent, robust and readily accountable decisions.

The approach is defined as multi-criteria mapping because the intention is to demonstrate how a risk debate can be 'mapped' - establishing the main contours and identifying the key areas of difference and convergence. In both these respects, the approach differs from some other multi-criteria methods that use more complex techniques in an attempt to identify a unique determinate and 'objectively optimal' resolution of the various divergent perspectives.

MCM is set out as a systematic and transparent way of comparing policy options. It can tap into a wide range of perspectives and expertise, and produce an overview that 'maps' the debate. Unlike other forecasting methods, it is purported that it does not attempt to foreclose deliberations by coming up with a single solution. The developers claim that the approach combines the transparency of numerical approaches with the unconstrained framing of discursive deliberations, harnessing the best of each approach.

In the original developmental study conducted by Stirling and Mayer a set of eight criteria that combine key characteristics both of science and precaution were used. These were: humility; completeness; the inclusion of benefits and justification; focus on comparison of different options; and openness to participation; the systematic mapping of sensitivities; the ensuring of transparency to third parties; and the consideration of diverse mixtures of options. MCM aims to explicitly address these criteria and seeks to reconcile the wide dimension of precaution with the specificity and rigour of traditional risk assessment.

The principal aim of the method is to explore the issues and come to a better understanding of the nature of the problem and the possible responses, rather than to make claim to the definitive determination of a single 'optimal' solution. It is this aspect of the methodology that led the WP1 research group to consider MCM as a possible ethical framework. Full details of the methodology are specified and described in the modified MCM protocol.

2.2.5 The Delphi method

The objective of most Delphi method (DM) applications is the reliable and creative generation of ideas, exploration of future scenarios, improved data collection and informed decision-making. Results of a traditional application of the DM can greatly assist policy makers to improve creativity and their decision-making when information is incomplete, or the validity of the information is disputed.⁶

The DM lends itself best to studies that have the aim of gathering opinion and initiating debate, as opposed to those that seek an in-depth analysis of an issue. The technique allows experts to deal systematically with a complex problem or task. The DM is based on a structured process for collecting and distilling knowledge from a group of geographically dispersed experts by means of a series of questionnaires interspersed with controlled opinion feedback. The DM represents a useful communication device among a group of experts and thus facilitates the formation of a group judgement.

⁶ Adler, M & E. Ziglio (eds.), *Gazing into the oracle: the Delphi method and its application to social policy and public health*. Jessica Kingsley Publishers, London 1996.

The DM was developed at the RAND Corporation in the 1950s⁷ and was designed to combine the knowledge and abilities of a diverse group of experts to the task of quantifying variables that are either intangible or shrouded in uncertainty. This methodology was first utilised by the US in defence research. The technique has since been used to generate forecasts in a variety of applications such as technology, education, planning, environmental impact assessment, social policy, public health etc. This wide use has led to a large amount of variation from the original technique and a family of Delphi-related processes.⁸

The essence of the technique is fairly straightforward. It is based on a series of questionnaires that are sent either by mail or computerized systems, to a pre-selected group of experts. These questionnaires are designed to elicit and develop individual responses to the problems posed and to enable the experts to refine their views as the group's work progresses in accordance with the assigned task. The advantage of the DM is that it can bring together individuals from different perspectives, abilities and skills sets to contribute to the solution of a complex problem.

The process is an anonymous and confidential procedure which facilitates the exchange of information and ideas by enabling each participant to have equal input, preventing bias caused by positive status or dominant personalities as the participants do not directly interact with one another. The respondents can speculate individually and this can lead to the identification of consensus and divergence in opinion. Four key features are regarded as necessary for defining the Delphi method: anonymity; iteration; controlled feedback and statistical aggregation of group response⁹. The main steps involved in designing a Delphi survey are:

1. Choose the topic;
2. Identify, select and contact expert members to participate in the exercise;
3. Design and develop the first round Delphi questionnaire;
4. Test the questionnaire for proper wording (e.g., ambiguities, vagueness);
5. Circulate the first round questionnaire (Q1) to the participants, completion and return of Q1;
6. Collate and categorize statements / topics / issues of the first round; responses (producing feedback), design and develop the second round questionnaire (Q2);
7. Circulate second round questionnaire to the participants, completion and return of Q2;
8. Analyse the second round responses, collate of scores, calculate of group mean, median and standard deviation (SD) for each issue / topic;
9. Construct third round questionnaire (Q3), similar to Q2 but with individual and group scores from Q2 incorporated;
10. Circulate third round questionnaire, completion and return of Q3;
11. Analyse the third round responses, re-collate scores, recalculate group mean, median and SDs for each issue / topic;
12. Steps 7 to 10 are reiterated as long as desired or necessary to achieve stability in the results;

⁷ Dalkey N. & O. Helmer, 'An experimental application of the Delphi method to the use of experts', *Management Science* (1963) 9, 458-67.

⁸ Angus A.J, I.D. Hodge, S. McNally & M.A. Sutton, 'The setting of standards for agricultural nitrogen emissions: a case study of the Delphi technique', *Journal of Environmental Management* (2003) 69, 323-37. Beech, B., 'Go the extra mile - use the Delphi technique', *Journal of Nursing Management* (1997) 7, 281-88.

⁹ Martino, J., *Technological forecasting for decision making*. Elsevier Science Publishing Co, New York 1983.

13. Achieve group consensus, calculate summary statistics mean, median and SD;
14. Prepare and distribute report by the Research Team to present the conclusions of the exercise.

A protocol has been set out in order to contextualise the use of the Delphi method in its different forms and to provide appropriate guidance for potential users. The DM protocol provides advice on the effective use of the DM. In particular it aims to ensure that it is used in a consistent and transparent manner.

2.3 Application of the ethical matrix

The ethical matrix (EM) was developed to map and aid the management of issues raised at the various stages of biotechnology development. In order to contextualise the use of the EM in its different forms and to provide appropriate guidance for potential users, the framework was reviewed and a structured step-by-step protocol was set out. The EM protocol provides advice in its effective use; in particular, it aims to ensure that it is used in a consistent and transparent manner. The protocol was also created to ensure consistency for both research groups and to allow results generated from the two workshops to be compared.

The topic chosen was potential ethical issues raised by the development and use of GM salmon.

2.3.1 Use of the ethical matrix

Conceptual basis of the method

At its simplest level of use the EM is a checklist of concerns, structured around established ethical theory. However, it can also be used as a means of promoting structured discussion. The interest groups, the weighting of each cell and even the appropriateness of the principles may all be challenged or modified by those using it. At best, it helps those involved in making a decision to put themselves in the shoes of others. At the very least, it ensures that more than the usual narrow range of concerns gets an airing. When setting out the work programme for Task C it was decided that UNOTT would run an EM workshop with a group of experts, and NENT with lay people, in both cases choosing the development and use of GM salmon as the subject of investigation. One of the alleged strengths of the EM is that it can be used by numerous groups and does not presuppose that all participants should be knowledgeable stakeholders about a given case.

Summary of the methodology and protocol

The aim of creating the protocol (see Diagram 2.1 for a summary) was to set out a clear methodology for users interested in applying the method. The protocol was reviewed as part of the process to determine whether any further developments could be proposed for the method. The protocol gave clear guidance on the application of the method for both research groups.

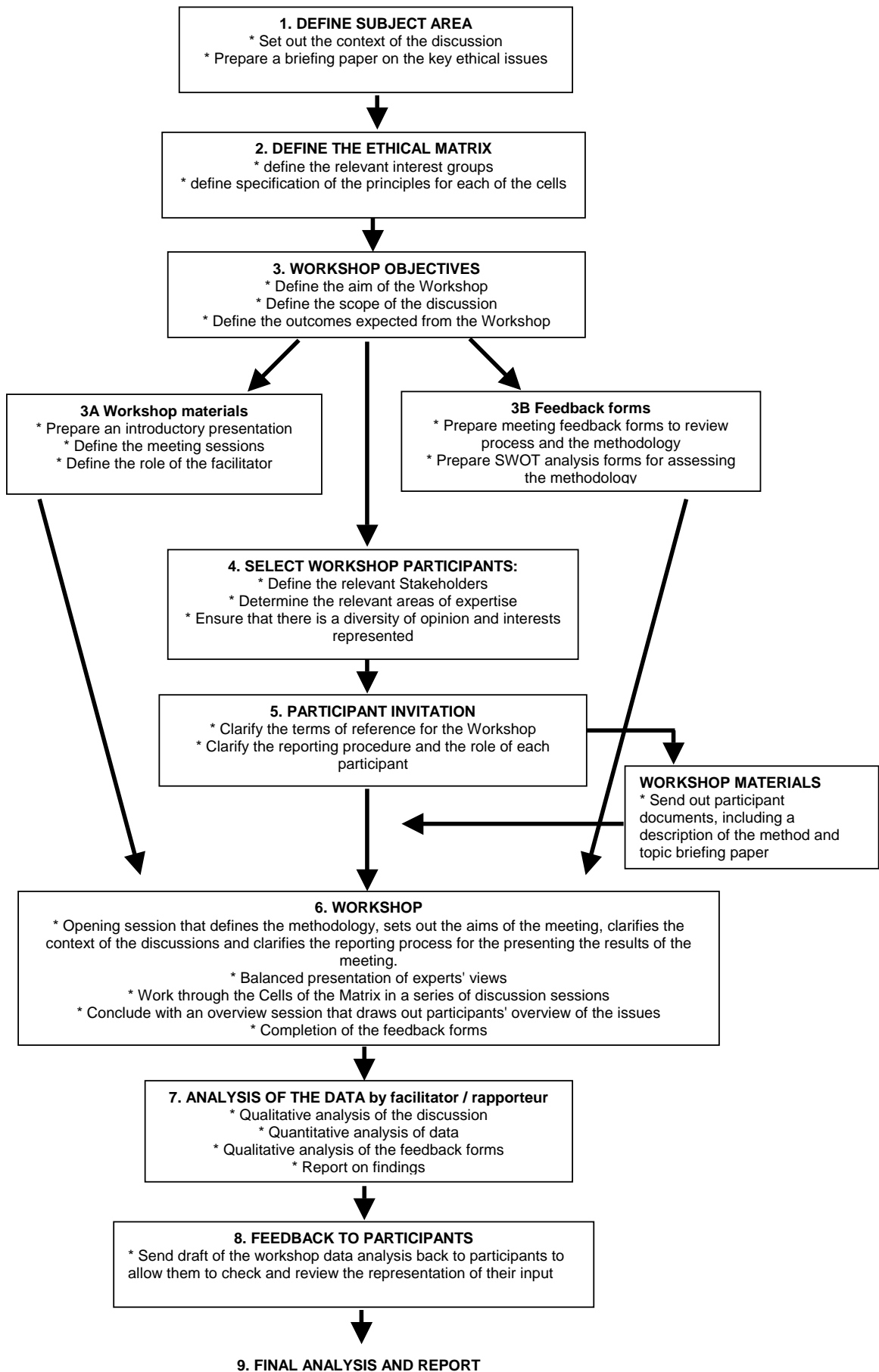
Due to a number of conflicting activities for UK experts in the GM salmon field the EM expert workshop was postponed and will be held in the summer of 2005.

The group of UK experts involved in this field is not extensive so using GM salmon as a case study when running two expert (Delphi and EM) events made it

difficult to secure adequate participation in the EM. UNOTT is organising the second workshop during Task D, and will use a second case study to ensure participation.

Diagram 2.1

Summary of the protocol of the ethical matrix



2.3.2 NENT use of the ethical matrix

Conceptual basis of the method

The application of the EM may be based on three or four principles - well-being (increased benefits and reduced harm), autonomy, and fairness. In this study, NENT tested the EM based on four principles and UNOTT were to have focused on a matrix where three principles were applied. This introduced a comparative aspect into the two applications.

Summary of the methodology

When setting out the work programme for Task C it was decided that UNOTT would run an EM workshop on GM salmon with experts and NENT with lay people. Ten participants were therefore chosen from a sample of seventy people that replied to an advertisement in the largest evening paper in the Oslo region. They were chosen to reflect a wide range of backgrounds, gender, age, work, and personal interests. Only those who were in any way working with food or biotechnology in the public, voluntary, or private sector were systematically excluded as participants.

At the end of October 2004 the participants were sent a background article based upon articles from the COGEM application, in addition to several articles from Norwegian newspapers and popular science magazines. These newspaper and magazines clippings all related to fish farming, genetic modification of fish, fast growing fish, and industrial and ecological concerns.

On 3rd November 2004 all participants were invited to a short lecture and discussion evening in NENT's office in the centre of Oslo. Seven participants attended. Alestrøm, leading geneticist, from the Norwegian School of Veterinary Science gave a brief introduction to the science behind the modification of fish in general and salmon in particular. Kaiser gave a short introduction to what is meant by ethical assessment and ethical tools. There was constant debate and Alestrøm, Kaiser and the project assistant answered questions. The event lasted for three hours.

On 6th November the seven participants attended a full-day workshop. Kaiser, Thorstensen and Eriksen were present from NENT. The meeting started with a discussion based on the impressions from the lecture/discussion evening on the 3rd November. A variety of reflections were aired and notes were taken on flipcharts and distributed around the room. These served as a constant reminder of the issues the participants brought with them into the workshop. The participants were then introduced to the EM.

Analysis of the method

NENT, in co-operation with UNOTT prior to the workshop, developed specifications of the principles for the relevant stakeholders. Much discussion centred on what the principles increased benefits and reduced harm actually referred to. It was for instance not obvious to the participants that 'food safety' was a correct specification of reduced harm for consumers. The participants also wanted additional stakeholders. Some opted for future generations, but they agreed that it could be included under consumers. Others perceived research and knowledge production to be an important stakeholder.

Relating to the confusion concerning the principles increased benefits and reduced harm, the NENT research group concluded that perhaps some simple formulations using imperatives would work better (*'Avoid doing harm!'* and *'Create benefits!'*). It should be noted that as defined in the protocol, different participant

groups can use the EM in different ways, however it is essential that all modifications be clearly indicated. The participants agreed upon the following EM:

<i>GM salmon (fast growth + sterility)</i>	Increased benefits	Reduced harm	Dignity	Fairness
Fish producers	Income and working conditions	Dependence on natural resources, place and supplies	Freedom to chose	Fair trade conditions
Consumers (present and future)	Nutritional quality	Food Safety	Respect for the consumer (food labelling)	Affordable products and general availability
Treated fish	Resistance to diseases	Animal welfare	Freedom to move	Respect for natural properties
Environment	Protection	Pollution	Sustainability of biological diversity	Regional sustainability
Research & knowledge	New themes and funds	Dependence of industrial funding	Choosing one's own research	???

During informal discussions round the table, the facilitators proceeded to establish an EM that showed what would happen to these different stakeholders, under the different ethical principles, if genetically modified salmon were introduced. NENT tried to present an already completed EM, but the participants wanted to create one from scratch. Here a more animated discussion followed and the participants were not sure to what degree some of the different scenarios envisaged by other participants were probable. Even so, the main concern about pollution of wild salmon was avoided through insistence on the sterility of the salmon. This was obviously a *sine qua non* for the participants. After a long period of discussion, the participants ended up with a weighted matrix as below.

The negative outcomes were marked with '-' and the positive with '+'. In the final discussion the participants were asked the following question: '*Should we allow production and marketing of genetically modified salmon that is fast growing and sterile?*' The participants were given four options:

- 1) Yes!
- 2) No!
- 3) Yes, under the condition of... (specify roughly the threshold conditions)
- 4) No, unless... (specify roughly what would be an acceptable reason for exemption)

<i>GM salmon (fast growth + sterility)</i>	Increased benefits	Reduced harm	Dignity	Fairness
Fish producers	+ Easier to adjust the product to the market + Safer jobs???? + More efficient use of resources	+ Predictable production (less dependent) + More market directed + Less risk for investments + Potentially less compensation costs + Less fodder costs + Less expenses in preventing illness	+ Increased options???? + Better capacity to control the development of the business - Cartel control (fewer producers of smolt – global control)	Status quo
Consumers (present and future)	+ Increased consumption of salmon	+ Increased food control	-Less real choices - Uncertainty to what one is 'really' eating	+ Cheaper products - The poor will not have access to the products
Treated fish	- Uncertainty	- Uncertainty as to if enhanced growth leads to problems for the fish (deformities) - Uncertainty as to resistance to diseases	Status quo	- More aggressive behaviour in the salmon
Environment	+ Will not interfere with local genetic material (large uncertainty) - Increased use of fish as fish fodder + Increased use of all the marine resources	- New diseases ('mad salmon') as a result of more intensive breeding	- Spoils the mating period for the wild salmon - Superior to wild salmon in the fight for resources in nature - Tampering with nature?? - Fodder production as threat to biological diversity	- Do we just push all the pollution problems over to the sea – uncertainty as to pollution?
Research & knowledge	+ Increased areas of research + Generally increased knowledge on genes and how they work	- Who will control and pay for the control?	- Biased priorities – all research funds will go to the salmon research	- Ownership – responsibility - liability - Move from basic to applied science

NENT explored the use of the EM using a mapping approach as highlighted above. This will be further analysed with the UNOTT results in Task D.

Through deliberations and explanations of the differences between 3) and 4), the participants agreed upon '3) *Yes, under the condition of...*'. The main condition was that there had to be some mechanisms in place that would ensure that whoever was responsible for the production, should also be liable for any damage caused by the product.

Conclusions

Listed below are the main issues that NENT consider should be addressed in future development of the EM, and that emerged from the formal and informal feedback from the participants:

- Inclusion of ethical arguments in a clear and transparent form. Some of the participants were of the opinion that the ethical arguments were not really clarified. This matter is difficult to address as the ethical discussion often relates to what should be considered ethically relevant differences;
- The coordination of the workshop. Since this was a setting with lay people it is important to respect that they did not have expert knowledge on academic ethics or genetics. This means that the facilitation and chairing should be carefully planned and enacted - and maybe alternated within the group;
- Clear notions. It can be unclear what one actually is comparing, who the different stakeholders are imagined to be, and what the ethical principles refer to in this setting;
- Time. Improvements to the process could be made that leaves more time for participants to reflect upon their own judgements;
- Exhaustiveness. Is the EM actually exhaustive both for the ethics and for the stakeholders?;
- Representative participants. The different cells and their contents are dependent upon interpretation, and this interpretation depends on the participants' background, especially if it is to be a lay exercise without much intervention from experts.

The main points of appreciation / benefit were:

- Structure. It saves time and effort to know what the perspectives are and who one should consider;
- Prospect for comparison. The completed cells, either negative or positive, will create easily available, and also pedagogical, data for anyone with an interest in looking into the field;
- Values explicated. The completion of the cells demanded a specific debate over how one perceives a decision to affect someone or something else. This leads again to a debate over values. However, as for the ethical arguments, one needs to acknowledge that people actually are in disagreement over whether they are discussing values.

The EM has already demonstrated its important potential as an ethical tool, however this process was to rigorously examine and test the method. Many of the advantages demonstrated in this study are mainly procedural, according to the participants. There is room for further development of the methodology as a tool relevant for engaging with lay participants. Some of these developments are interrelated e.g. time and clarity. It is conceivable that with some more time – or stretching the exercise over a month - could lead to more reflection and more room for ethical arguments.

2.3.3 Conclusions

Although the UNOTT exercise is still to be conducted, the NENT exercise has shown some interesting results. The review of the EM has further revealed the need for explicit chronicling of the approach used and the way in which the cells of the EM have been determined, i.e. the specification of the principles for each of the interest groups. These findings are tentative, but more robust conclusions will be possible when the expert EM workshop has been conducted.

2.4 Application of the COGEM framework

2.4.1 Conceptual basis of the method

The Netherlands Commission on Genetic Modification developed the COGEM method for application in the Netherlands. As described in Section 2.2.4 the COGEM method is a procedural tool with large substantive elements. It is designed for a committee in order to reach a systematised agreement upon ethical issues in the agri-food sector.

2.4.2 Summary of the methodology

The rationale for applying this method was both its novelty, its lack of testing outside the Dutch setting for which it was developed, and its systematic inclusion of both values and ethical arguments. NENT perceives the COGEM method to be very relevant since it sets some basic rules for the procedure, but these rules might be interpreted in weaker or stronger senses.

2.4.3 Analysis of the method

The Norwegian Patenting Board's Ethics Committee was appointed by the Norwegian Ministry of Justice and the Police in order to assist the Norwegian Patenting Board in cases where there are ethical and social values at stake. The secretariat of the Norwegian Patenting Board's Ethics Committee presented the method twice. There was discussion within the Norwegian Patenting Board's Ethics Committee as to whether it should use the GOGEM method and if so, in what kind of form. They were of the opinion that as a freshly appointed body, they should have more experience and know each other better before applying tools in a rigid manner. As for previous frameworks the topic used to test the COGEM method was the development and use of genetically modified salmon. The case with GM salmon was the first one to be presented to the Ethics Committee. The Ethics Committee used it as a guiding checklist for the procedure:

1. Decision to carry out assessment. The setting of the application was the Norwegian Patenting Board's Ethics Committee and the case itself referred to an actual application to the Norwegian Patenting Board;
2. Exploring the parameters within which the process must be carried out and creating conditions so that it can be carried out fairly and justly - The COGEM method is expert-based on both the scientific and the ethical sides. When the application of the tool was decided, the research group agreed to look at what the COGEM itself had done on genetic modification of animals;
3. Checking whether limit values have been or are likely to be affected and whether a previous socio-ethical assessment has been carried out - COGEM had already done one assessment of fast-growing salmon.¹⁰ This assessment and the literature used as background for the assessment were acquired by NENT. In addition other articles that had appeared in refereed journals after the COGEM assessment were obtained. The abstracts of all the articles were then sent out to all the members of the committee with an offer to receive the full-text articles if

¹⁰ *Transgenic salmon, a safe product? Environmental risks associated with the production of transgenic salmon.* COGEM advisory report CGM/031124-01.

they wished.¹¹ Several members requested some articles. The COGEM method was further introduced to the committee at an internal seminar in October 2004. As for the limit values, many studies have been done concerning the risks associated with farmed salmon; these risks were included in the ethical assessment;

4. Describing potentially affected values that can be taken into consideration - The Ethics Committee took into account the results from the EM workshop from the 6th of November 2004, and also submitted it as a part of the report. Here the concerns of lay people were presented in a systematic and reflected way. This advice, as will be mentioned later, contains the 'yes, if...' aspect that is very important to the COGEM.
5. Describing the aims to be achieved - The aims of the patent applicators were outlined in the documentation to the Norwegian Patenting Board. These were to a large degree technical, but many of the articles made available to the Ethics Committee investigated the differences in cost/benefit terms of growth-enhanced salmon;
6. Considering the relative merits of the aims and values concerned - The weighing and balancing of aims and values inherent in the COGEM method were not adhered to in the way outlined by the COGEM in their background paper on the method. This was done in a more deliberative manner with discussions pertaining to the usefulness and the desirability of the technology in a Norwegian context;
7. Advice sent on to the decision-making body - Based on both the discussion within the Ethics Committee and the input from the EM workshop, the Committee sent its position to the Norwegian Patenting Board. This result is still not available due to the fact that this is an advice given internally within one public body, as part of the decision-making process and it is thus not publicly available. We hope that the process will be concluded by mid-March.

2.4.4 Conclusions

It is clear that the secretariat for the Ethics Committee would have wished to follow the COGEM method more closely, but it has no power to alter the Ethics Committee's choice of working mode. However, the Ethics Committee appreciated the possibility of working with frameworks/methods and agreed that the COGEM method was useful as a heuristic procedure when it comes to structuring both a process and the arguments, and that it could be applied at a later stage in the Ethics Committee's lifetime.

2.5 Application of multi-criteria mapping

2.5.1 Conceptual basis of the method

In order to assess and further develop the multi-criteria mapping (MCM) method, the 3-step process (see Section 2.1.2) was applied. The MCM was reviewed and a structured step-by-step protocol was set out. This protocol was then evaluated to

¹¹ See appendix for full list of articles. The same articles provided the background for the short document distributed as preparation for the Ethical Matrix workshop.

determine whether it was appropriate to set out a trial to further develop the method and the protocol.

2.5.2 Summary of the methodology

The MCM methodology approaches an issue from a specified perspective. Rather than asking whether an individual course of action is 'safe', 'unsafe' or even 'safe enough' as is common in regulatory risk assessment, the MCM takes as a starting point a series of different possible choices and seeks to determine the relative performance of these 'options' in relation to each other under a range of different criteria. In order to ensure some degree of comparability between perspectives taken by the different participants a series of six basic policy options are defined in advance by the researchers. All participants are asked to consider and appraise the options, and in order to ensure the analysis is not unduly constrained or biased by this externally imposed framework, participants are able to add a designated number of options which they are entirely free to define as appropriate.

One-to-one interviews are used as the method for collecting the dataset. The four stage iterative process comprises: (i) the identification of additional options by the participants (ii) the defining of appraisal criteria under which the options should be assessed; (iii) the scoring of the performance of each option under each criterion; and (iv) the weighting of each criterion in terms of its relative importance. The essential iterative and reflexive properties of the process mean that participants are able to include further options or criteria, or alter weightings during the interview if necessary. An interviewer equipped with a laptop computer and a voice recorder guides each participant through the appraisal process that takes between 2 and 3 hours. The interviews are recorded in order to provide a detailed transcription for later consultation.

A straightforward 'linear additive weighting' multi-criteria procedure¹² is employed using a simple Excel spreadsheet model in order to display to the participant the results of the scoring and weighting process as it develops and, thereby, the relative ranking of each of the options. The results of the scoring process are displayed as bar charts during the interviews and show the ranking of options under both 'pessimistic' and 'optimistic' performance scores. The appraisal process is iterative and reflexive and participants are free to examine the results and decide to go back and alter weightings or include new options or criteria.

Following the interviews, a preliminary analysis is conducted of the results. This includes (i) grouping the criteria (ii) sensitivity analysis to examine the effect of increasing and decreasing each participant's criteria weighting values and (iii) an exploration of the effect of introducing a degree of diversity into the mix of options based on the rankings arrived at by each participant.

Each participant should be sent a copy of their own results together with an anonymised list of all the options, criteria and weightings specified by the other participants and the resulting option rankings.

¹² Stirling, A. & S. Mayer, *Rethinking risk. A pilot multi-criteria mapping of a genetically modified crop in agricultural systems in the UK*. SPRU, University of Sussex, Brighton 1999.

2.5.3 Analysis of the method

It has been claimed that MCM is a powerful tool for 'mapping debate' and the findings have been characterised as '*robust and can be relied upon as a useful indicator of the broader dimensions of contemporary controversies*'.¹³

The initial developers of the MCM acknowledge that it is one way of elaborating scenarios and systematically clarifying the parameters of any policy decision that has to be taken under conditions of indeterminacy in nature, ignorance in our state of knowledge and plurality of values and interests. They acknowledge that tools like MCM can only ever be a part of the solution to the difficulties of social decision making over technological risk. However, it is claimed that this technique does bring to the technology appraisal process a combination of the benefits of inclusive and deliberative approaches and the discipline and transparency of qualitative techniques, but cannot be regarded as a panacea for the complex and intractable challenges of risk assessment and technology appraisal. The complexity of the exercise and of the results means that it cannot be regarded as an everyday tool. As a practical tool, the method only makes sense for instance as part of a wider deliberative process of appraisal – a process within which it might be hoped the MCM may help contribute to the key properties of systematic discipline, transparency and verifiability. The MCM cannot be seen as an analytical fix for arriving at definitive right or wrong answers over what constitutes the 'best' (i.e. the most reasonable or most consensual) choice of option from the point of view of society as a whole.

2.5.4 Applying the method as part of the development process

An extensive literature review of multi-criteria mapping was completed in Task B and following much deliberation and consideration of the original thirteen frameworks identified in Task A, MCM was deemed to be a valuable framework to take forward in the Task C phase.

One of the objectives of Task C was to test the MCM procedure in a practical situation. To fully understand the process, methodological aspects of the framework were reviewed and key literature sources used to create a protocol that could be used during the process and reviewed and revised accordingly. However, it is apparent from the protocol, that the MCM procedure is a complicated and time-consuming process. It was not therefore appropriate to apply it in a developmental trial within the context of this project. As a development it may be possible to adapt the protocol to use as an e-mail survey, rather than face-to-face individual interviews, but this might essentially invalidate the MCM as a procedure. At this point in the project a full test of the framework as planned was therefore not appropriate. However the MCM's potential as an ethical framework is still of great interest to the research group, and interviews will be conducted with the original developers, to further explore adapting the protocol for an application in Task D.

2.6 Application of the Delphi method

When setting out the work programme for Task C the Delphi method (DM) was deemed to be a valuable framework to take forward. The DM only uses 'expert'

¹³ Ibid.

participants but it was decided that both UNOTT and NENT would test the method (unlike the Ethical Matrix workshop where UNOTT used experts and NENT, lay people). The topic as for the ethical matrix workshop was potential ethical issues raised by the development and use of GM salmon.

In order to assess and further develop the method, the 3-step process was again applied. The method was reviewed and a structured step-by-step protocol was set out. The protocol was created to ensure consistency for both research groups and to ensure that the results generated from the two Delphi surveys could be analysed and cross-compared as a result of the consistencies in the methodology. The Delphi method was run over 3 weeks in November/December 2004. Preparation involved extensive discussions between NENT and UNOTT over the development of the briefing paper and the initial Delphi questionnaires.

2.6.1 NENT use of the Delphi method

Conceptual basis of the method

The Delphi can be used as an ethical tool in order to map consensus and to map areas of dissent and how large this dissent is. For a Delphi survey to work as an opinion formation tool, i.e. for the participants to reach consensus, one needs to bear in mind that some kind of ethical expertise might be required.

Summary of the methodology

All communication with the participants was conducted by e-mail and under full anonymity, even though in a small country like Norway, the research group believes that it could be possible to identify some of the participants. 10 'expert' participants, related in various fields to salmon production, were contacted and agreed to take part in a three round Delphi over a three-week period. They received an open-ended questionnaire in which they were asked to complete the following statements:

- STATEMENT 1: One of the future options for European fish producers is the production and marketing of GM salmon. Please list key issues that should be considered as part of any assessment of this option.
- STATEMENT 2: Please indicate significant advantages or disadvantages of the production and use of GM salmon (e.g. benefits/risks to animal health and welfare; food safety/consumer acceptance; environment effects; economic interests, etc).
- STATEMENT 3: Please indicate any additional ethical issues raised by the patenting and use of GM salmon.
- STATEMENT 4: Should the marketing and production of a fast-growing and sterilised GM salmon be permitted in Europe? Please justify your response by indicating the key issues that inform your views.

Analysis of the method

The participants' responses to these four statements returned a list of issues, 17, 17, 7 and 7 for each of the statements respectively, even though there were only seven replies. The coordinator at NENT collated these issues, including any comments made by the participants, and a second round questionnaire was developed which was then returned to the participants for completion. In the second round the participants were asked to assess how important they found the actual issue proposed and how they

would assess their own knowledge in the field. Included in this second round was also a set of general questions that were used to stimulate discussion i.e. to map the participants' general attitude towards GMOs.¹⁴ Here they were also asked to score agreement, using a Likert scale, and give a self-assessment of their own knowledge in the field. In this second round the participants were also asked to add any further issues that they might want to raise. No new issues were raised.

Analysis of the second round questionnaire responses involved collation of the scores given for each issue based on the calculation of group mean, median and standard deviation, this last indicator shows the extent of agreement or disagreement over an issue. The third round questionnaire was then constructed, similar to the second round questionnaire but with the group scores incorporated, this was then circulated to participants. The third and final round questionnaire is to a large extent the most important, since this is where it is hoped consensus will be reached, as the participants have been able to compare their scoring and views on the issues with the other participants'. All comments are presented anonymously.

Analysis of the third round responses involved re-collation of scores, recalculation of group mean, median and standard deviation for each issue / topic.

Conclusions

This Delphi was conducted partly as a qualitative and partly as a quantitative exercise. It seems obvious that such a low number as 7 replies - for a quantitative survey - is far from sufficient for one conclusions, but it must be remembered that this is a test application of the Delphi method. From a qualitative point of view, there was most discussion on the following issues:

¹⁴ These were:

- 1) GM animals have the potential to provide safe, nutritious, acceptable food for most people in developed countries by practices that are more economically efficient than those currently used;
- 2) Sustainable and integrated agricultural systems which avoid all GMOs (such as organic farming) have the potential to provide adequate food for the global population (estimated to plateau at about 8 billion);
- 3) The release of certain GM animals into the wider environment (such as fish and insects) constitutes an unjustifiable risk despite anticipated economic benefits;
- 4) Use of GM animals in medical research is likely to be an important means by which human health could be improved without subjecting the animals to unjustifiable suffering;
- 5) Advances in genomics place humanity under greater obligations to respect the intrinsic nature of animals than has been thought appropriate in the past.

ROUND 3	Mean	Median	SD
STATEMENT 1:			
Consumer acceptance	1,29	1	0,45
Accept in society and in the opinion forming organisations	1,29	1	0,45
Long term health issues related to the consummation of GM food	2,00	2	1,20
Safety aspects related to GM food	1,14	0,35	1,00
Cost / benefit	1,86	2	0,83
STATEMENT 2:			
Production costs	2,43	2	0,73
Uncertainty related to environmental consequences	1,43	1	0,49
Consumer acceptance	1,43	1	0,49
STATEMENT 3:			
Market power	1,20	1	0,40
Globalisation	2,33	2	0,47
Covering the global need for food through production of GM food	2,29	2	1,03
STATEMENT 4:			
The ideal solution would be to leave it to the consumers through buying / non-buying of GM food	3,43	3	1,18

From this it can be seen that quite a large spectrum is covered, but it is also rather obvious that some topics are discussed several times. This was the result of leaving the agenda to the participants. In retrospect this was probably unfortunate since it created more work without adding quality or novel aspects.

Clearly, there was certain reluctance amongst the participants to draw clear conclusions. The views on experts' advice ranged on Statement 4 from: *'There is no reason why marketing and production of GM salmon should be prohibited in Europe in particular'* to *'Experts should not take a stand on this – only give factual advice'*, so the discussion had many aspects. And neither of these points of view gained much support:

Topic / issue 3: There is no reason why marketing and production of GM salmon should be prohibited in Europe in particular

Mean: 3,14	SD: 1,12	Median: 4
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Topic / issue 2: Experts should not take a stand on this – only give factual advice

Mean: 2,71	SD: 1,03	Median: 3
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However, the participants managed to find a common ground in the conclusion with the issue:

Topic / issue 6: With the technology of today – No!

Mean: 1,57	SD: 0,73	Median: 1
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Based on purely quantitative measures, issues of agreement that were simultaneously perceived to be important can also be identified. In this context, a mean of < 1,50 and a standard deviation of < 0,50 are used to indicate an issue that is agreed by the participants to be important.

STATEMENT 1:

One of the future options for European fish producers is the production and marketing of GM salmon. Please list key issues that should be considered as part of any assessment of this option.

- Topic / issue: Safety aspects related to GM food (mean=1,14) (SD=0,35)
- Topic / issue: Consumer acceptance (mean=1,29) (SD=0,45)
- Topic / issue: Accept in society and in the opinion forming organisations (mean=1,29) (SD=0,45)
- Topic / issue: GM salmon must be sold and purchased at will and separately from conventional salmon (mean=1,29) (SD=0,45)
- Topic / issue: Uncertainty, ignorance and complexity (mean=1,40) (SD=0,49)

STATEMENT 2:

Please indicate significant advantages or disadvantages of the production and use of GM salmon (e.g. benefits/risks to animal health and welfare; food safety/consumer acceptance; environment effects; economic interests, etc)

- Topic / issue: Uncertainty related to environmental consequences (mean=1,43) (SD=0,49)
- Topic / issue: Consumer acceptance (mean=1,43) (SD=0,49)
- Topic / issue: Uncertainty related to environmental consequences (mean=1,43) (SD=0,49)

STATEMENT 3:

Please indicate any additional ethical issues raised by the patenting and use of GM salmon

- Topic / issue: Market power (mean=1,20) (SD=0,40)

STATEMENT 4:

Should the marketing and production of a fast-growing and sterilised GM salmon be permitted in Europe?

- None

Clearly, the method showed some interesting features as mapping positions and retrieving arguments. It has a large heuristic value in bringing these arguments to the fore. The value of these arguments needs to be considered by an independent decision maker. However, many of these will be further reviewed in Task D. The quantitative measures cannot be regarded as 'ethical' in an explicit sense since they might hide underlying reasons and motives, but for a decision-maker, these can provide useful information by highlighting any large discrepancies.

2.6.2 UNOTT use of the Delphi method

E-mail over the last 2 weeks of November and the beginning of December 2004 conducted the Delphi method survey. A comprehensive literature review and Internet search was carried out to identify experts in the GM salmon field in the UK for testing

both the Delphi method and ethical matrix framework, which was planned for the end of November. This proved a more difficult task than had been expected, but a list of approximately 40 participants was constructed including marine biologists; economists; members of the salmon industry; animal welfare specialists; members of government advisory bodies; molecular biologists; academics etc. Ten experts initially agreed to take part in the Delphi survey, but one participant did not respond to any of the questionnaires. Of these nine participants, all but 2 completed the 3 round survey process (these 2 failed to return the 3rd round questionnaire, but provided useful information in the first 2 rounds).

Analysis of the method

When reviewing the value of the Delphi method (DM) as an ethical framework for the evaluation of novel agricultural and food biotechnologies it is important to consider:

- a) The general nature of the DM approach;
- b) The specific characteristics revealed by the trial in which the DM was used to assess the ethical acceptability of GM salmon (the GMST).

The advantages and disadvantages of the DM as a generic approach as well as the sound and weak features of the DM as used in the GMST will be examined. The method is reviewed in order to clarify any systematic deficiencies in the DM and to suggest its potential for improvement according to agreed criteria. It should be noted that only tentative conclusions could be made at this time.

Advantages and disadvantages of the use of the DM

- a) Advantages
 - Allows the group, collectively, to 'set the agenda';
 - Is egalitarian, i.e. it prevents (or at least, inhibits) 'peer domination', because the anonymity of the participants, and the constrained style of the written dialogue, impede the emergence of a 'hierarchy of expertise';
 - Encourages (written) dialogue;
 - Exposes different participants to new ideas and perspectives.
- b) Disadvantages
 - Is limited to the participation of 'pre-selected experts';
 - Is subject to possible bias in the selection of the 'experts';
 - May omit important ethical concerns, if these are not raised by the participants;
 - Entails a somewhat laboured dialogue, which relies on a high degree of self-motivation;
 - Is liable to suffer from 'participant fatigue' (or boredom) because of the protracted (and somewhat repetitive) nature of the process;
 - Has a poorly defined 'end-point,' which may mean the outcome is incomplete or incoherent: this may make it difficult to decide what conclusions have been reached.

The use of the DM in the GMST

- a) Sound points: the trial gave evidence of:
 - Expression of divergent opinions;
 - Critical feedback from participants.

- b) Weak points: the trial seemed to reveal several weaknesses, some of which may reflect limitations of the DM as a method, while others were potentially deficiencies of the application for GMST:
- Instructions given to participants may result in misinterpretation of the method;
 - Promotion of the method may influence outcomes;
 - Inadequacies in the information provided to participants about other members of the group may prevent any judgement of the weight that might be ascribed to opinions expressed;
 - Presentation of the responses can influence outcomes: it might be useful to see how each participant responded at each stage of the process.

How might the DM be improved?

- More detailed, but clearly still anonymous, information about participants would allow a more nuanced understanding of the authority, which might be ascribed to the opinions of the different participants.
- More explicit and transparent recording of the responses given by participants in the different stages of the process would help participants to view themselves as part of a dynamic debate. A graphical 'time-line' of the progress of the debate might be helpful.

How well does the DM meet agreed criteria for an ethical framework?

The Second Interim EBTA report specifies agreed criteria defining the ethical soundness of ethical frameworks. It was 'tentatively' agreed that the main properties of ethically sound frameworks are:

- a. Inclusion of values at stake;
- b. Transparency;
- c. Multiplicity of viewpoints;
- d. Exposition of case-relevant ethically relevant aspects;
- e. Inclusion of ethical arguments.

Following discussion, WP1 used a scoring system to compare the different features of the frameworks examined. Taking account of the impact of methodology aspects it may be that some scores need reappraisal:

- (i) It is not clear that the written dialogue ensures a high degree of transparency. This feature might be better scored as **.
- (ii) Doubts could be expressed about the highest score being awarded to 'systematic inclusion of ethically relevant information', since in the absence of an ethical 'template' there is no guarantee that all such information will be included: it will depend on the range of participants, their experience, and their degree of engagement in the process.
- (iii) The score of '0' for explicit inclusion of values at stake' seems unjustifiably pedantic: with any reasonably sound choice of participants one would anticipate there would be some explicit inclusion of values. A score of * here might be more realistic.

In view of these comments, the scoring might (tentatively) be modified as shown below:

Name of framework	Essential properties (0 - ***) Assuming best practice				
	Transparency (clarity of decision making)	Inclusion of a multiplicity of (stakeholder) viewpoints	Systematic inclusion of ethically relevant information	Systematic inclusion of ethical arguments	Explicit inclusion of values at stake
DM	***	**	***	**	0
Modified DM	**	**	**	**	*

Systematic deficiencies and the potential for improvement of the DM

a) Deficiencies: this section aims to identify systematic generic limitations of the DM:

- There are dangers that the research group will interpret or categorise the participants' responses at the various stages in a manner that fits a preconceived idea of how they should be grouped and what they really mean (as opposed to what the participants say). This is an inevitable feature of a multi-stage iterative process, where numerous inputs need to be edited to present them in a coherent fashion for further analysis;
- The participants' written comments are often (unsurprisingly) ambiguous, so that the 'dialogue' becomes stilted and open to misunderstanding. The absence of face-to-face engagement is a serious limitation on effective dialogue;
- Participants might use arguments from others just as much to distance themselves from this argument, rather than to state where the agreement is;
- There is a serious risk that response fatigue (boredom) may set in, when responses are delivered over a period of several weeks, and in a style which is (necessarily) very repetitive;
- There is a serious risk that important issues will be ignored because the open agenda' may become a hostage to popular conceptions of what 'counts' and what is 'ethical';
- The exclusion of 'non-experts' is problematical. Clearly the definition of 'expert' is value-laden, and it might well be the case that, although care is taken to represent different sides of the issue in question, the remit will prove to be too narrow as 'pro' and 'anti' camps dispute over a preconceived agenda. The view of the non-expert (perhaps ideally Rawls' 'competent moral judge' with no axe to grind) may be essential to the desired plurality of ethical positions.

b) Potential for improvement: although there may be limitations on adding value to this method as an ethical framework, there appear to be some possible avenues for improvements, as follows:

- Despite the exchange of views, the lack of personal interaction makes the expression of opinion essentially 'one-way.' But compressing correspondence over a shorter time scale, or even translating it into a web-based dialogue, might add to its value. However, in so doing it would become a different method, owing little to the DM;
- Closer identification of the expertise of the participants might aid assessment of the weight to be attached to different opinions. But there is a danger (common to other approaches) of participants deferring to the authority of a perceived 'expert.' The absence of close cross-examination, a usual feature of participatory

- fora, might risk experts exerting unjustified influence over the outcome because of the poor opportunities for questioning;
- Inclusion of competent non-experts should give the exercise more validity;
 - The intentional inclusion of 'ethical sceptics' ('devil's advocates') as participants might provide an appropriate stimulus for debate, but it would be open to the charge of 'rigging' the debate.

Comparison of the DM with other frameworks

It is premature to provide a definitive comparison until other frameworks (e.g. the EM) have received an equivalent appraisal. However, as a first reaction, perceived benefits of openness and the democratic nature of the DM may be offset by the absence of a 'dynamic of ethical deliberation' which is an important element of other participatory frameworks.

2.6.3 Conclusions

The trial has highlighted a number of methodological issues that therefore require the further development of the protocol. However, a number of opportunities for further developing the substantive aspects of the method have also been identified.

The review of the Delphi method through the two trials in Norway and the UK has highlighted that although the framework has shown potential as a useful ethical framework within in the overall toolbox, the remote and anonymous nature of its application may suppress valuable ethical discourse.

2.7 Priorities for the application phase (task D)

The outcomes from Task C have provided a valuable basis for completing the final activities of the project (as set out in Task D). Set out below are the key objectives for Task D. These objectives will be further reviewed in the initial phase of Task D:

- The final task will involve a process of engagement with selected policy and regulatory decision-makers in the countries of the involved partners. The selected decision-makers should be from countries with homogeneous political structures and similar challenges in the field of legislation with regards to biotechnology. We envisage holding a workshop in connection with other NENT activities. The participants could be relevant decision-makers from a single Ministry, i.e. the Ministry of Environment, the Ministry of Agriculture, and other relevant bodies.
- The methods and results of the workshop will be evaluated with these selected decision-makers. The results from the different methods will be presented and the participants will be asked to perform or act through different tools. This will then be regarded as both training in applying the tools and as ways of experiencing the actual value of the tools.
- It will be the task of the decision-makers to explore the institutional demands or socio-economic pre-conditions that will allow these frameworks to be widely applicable in their respective fields. The relevance of the tools will of course vary between different institutions, but within the EU it is necessary for new GMO agri-food products to show some added value to the food market. One also needs to document and assess the values perceived by the different populations in the EU in order to assess if the public sees such a value. It is

highly relevant to test out ethical tools in a setting where ethical assessments have not to date been carried out.

- As part of the workshop, an assessment will be conducted in order to improve the novel approach so that adjustments can be made for constraints observed in legal and institutional frameworks under which these decision-makers typically operate. The tools are claimed to be neutral in the sense that they can be applied everywhere and in different political settings. It will be highly relevant to this project to investigate where in the actual decision-making process the users think the tools can be applied. We know much of the application of tools in the Northern and Western European context, but to see what kind of applicative force they can have in a foreign context will also broaden the prospective use of tools in the areas where it already takes place.
- The methodological details required by these key actors in the final report ('manual') will also be explored to allow them to adequately apply the proposed ethical framework. The participants at the seminar will be presented with a working draft of the 'user manual'. The manual will be enhanced and improved as a result of the feedback from this seminar. The final manual will then constitute an important part of the final outcome of the project.
- Empirical justification of the elements of the method and a sober assessment of possible range of the proposed tool must be provided. The experiences of the work completed in the application phase, Task C, will constitute important elements for improving and specifying the scope of the frameworks. We will try out both the Delphi and ethical matrix in this setting. Presentations will also be made of the multi-criteria mapping and COGEM methods.
- The method(s) must be assessed on their performance on the dimensions outlined in our understanding of ethical soundness. The participants will also be asked to conduct both an evaluation of the process they participated in free of constraints and according to our criteria for ethical soundness.

3 Participatory arrangements (WP2)

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3.1 Introduction

In this chapter recommendations will be given with regard to the planning and employment of consensus conferences. The recommendations and suggestions are put forward and elaborated on the basis of the results of the evaluative task, in which case studies were carried out on consensus conferences in four different European countries. This chapter for task C builds, then, both on the results of task A - the descriptive task - and on the results of the evaluations carried out in task B. The recommendations put forward in this chapter concern various aspects of consensus conferences, and they will represent an attempt to take into consideration the role played by national political cultures in the employment of consensus conferences. The recommendations will be worked out as a form of 'check list', in the sense that they will be structured in a way that takes us through the different stages of planning, organising and carrying out a consensus conference. The considerations put forward will concern areas such as the motivation for planning a consensus conference (goals stated), the institutional setting, the conference topic, the procedures for selecting participants (lay and expert; steering group), as well as the actual conference proceedings.

In putting forward these recommendations on the basis of our case study, the aim is to further develop and qualify the consensus conference model as an ethical tool insofar it should be a tool that could broaden public debate and strengthen the bases for public consultation in political decision-making.¹⁷

The purpose of going through the different phases of the consensus conference model is primarily to assess in what areas consideration needs to be taken under the given circumstances that apply for would-be users of the model. In other words, the aim is not to formulate a fixed and static set of criteria for successful use of consensus conferences, but rather to draw attention to the fact that the consensus conference model will be suited for fulfilling different aims and purposes in different contexts. Also, it is relevant to urge potential users to consider, whether the consensus conference would, in fact, be the procedure most suited to achieve their aims or if different models should be considered. Thus, there can be no final or objective 'check list' for consensus conferences, but rather the different elements of the model need to be considered in different ways with each new conference that is being organised.

The chapter will be structured as follows: In section 3.2 and 3.3, an attempt is made at delineating the field of participatory arrangements by giving an overview of

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¹⁷ Skorupinski, B. & K. Ott, *Partizipative Technikfolgenabschätzung als ethisches Erfordernis. Warum das Urteil der Bürger/innen unverzichtbar ist*. Bern 2002; Skorupinski, B. & K. Ott, 'Technology assessment and ethics. Determining a relationship in theory and practice', *Poiesis and Praxis* (2002) 1, 95-122.

(some) methods and initiatives, as well as a description of the participatory tool at hand, the consensus conference model. This is followed, in section 3.4, by a brief presentation of the most central results of the case study in the evaluative task. The remainder of the chapter (section 3.5) will consist of a list of recommendations in different categories each of them followed by a text that will explain and exemplify the particular recommendations on the basis of the case study material.

3.2 Participatory arrangements

Participatory arrangements represent a mixed category of methods and activities that share the basic characteristic of in one way or another involving the general public or various stakeholders in debates of societal relevance and/or forging a link between the public and the formal processes of decision-making in society. The overall purpose of participatory procedures is to contribute to solving problems or crises in areas where members of the public are affected, in ways that allow for lay people's opinions, ideas, and concerns to be voiced and taken into consideration, and ultimately, for the creation of solutions which will prove to be sustainable and publicly supported. Moreover, these methods go beyond, and qualify, participation of the kind secured through the voting processes of representative democracy. They include a variety of arrangements, from the Swiss extended system of deciding by popular vote to citizen juries or conferences (see Table 3.1 for an overview).

Table 3.1 A selection of participatory arrangements, their set-up, procedure, and mode of participation

Type of arrangement	Set-up and procedure	Mode of participation
<i>Consensus conference</i>	<ul style="list-style-type: none"> • A lay panel sets the agenda on a given issue and interrogates a panel of experts • The lay panel must reach consensus on the issues debated 	<ul style="list-style-type: none"> • Selected laypersons in a panel (10-15) • The lay panel receives a basic training in the issue in question
<i>Citizens' forum</i>	<ul style="list-style-type: none"> • Set-up similar to the consensus conference • Minority expressions are permitted 	<ul style="list-style-type: none"> • Selected laypersons in a panel (approximately 25) • The lay panel receives a basic training in the issue in question
<i>PubliForum</i>	<ul style="list-style-type: none"> • Set-up similar to the consensus conference • Consensus recommended, but not prescribed 	<ul style="list-style-type: none"> • 28 citizens (laypersons) • 6 translators • The lay panel receives a basic training in the issue in question

	<ul style="list-style-type: none"> • Contribution to consulting and political decision making within multilingual concordance democracy: citizen report • Majority and minority expressions in the citizen report are permitted 	
<i>Citizens' panel</i>	<ul style="list-style-type: none"> • Agenda setting and choice of experts are in the hand of the organising body • Participants work for four days, result is the citizens' judgement for political counselling • Majority and minority vote(s) permitted 	<ul style="list-style-type: none"> • 2 or 3 parallel groups of 25 persons each group • Participants receive input from experts with different positions
<i>Future workshop</i>	<ul style="list-style-type: none"> • Participants are guided through a structured debate • Phases of critique, visioning and realisation 	<ul style="list-style-type: none"> • Selected laypersons (5-20) participate in a workshop
<i>Scenario workshop</i>	<ul style="list-style-type: none"> • Participants are guided through a structured debate about different scenarios • Phases of critique, visioning and realisation 	<ul style="list-style-type: none"> • Participants (5-20) represent the various stakeholders
<i>Technology Delphi studies / Technology foresight</i>	<ul style="list-style-type: none"> • Through a survey of stakeholders, opinions are gathered • Panels subsequently draw conclusions and formulate recommendations on this basis 	<ul style="list-style-type: none"> • Groups of up to 200 stakeholders (or more) targeted in a survey • Selected representatives from user groups in panels
<i>Public hearing</i>	<ul style="list-style-type: none"> • Public presentation of an issue or plan in an open forum • Subsequent opportunity for comments 	<ul style="list-style-type: none"> • Interested citizens or stakeholders

<i>Focus group</i>	<ul style="list-style-type: none"> • Individuals are gathered for a focused interview about the issue in question 	<ul style="list-style-type: none"> • Laypersons or stakeholders are gathered in groups of typically 6-10 persons
<i>Referendum</i>	<ul style="list-style-type: none"> • Vote on the issue in question 	<ul style="list-style-type: none"> • All affected citizens in a region or nation

These tools vary in respect of how participation is facilitated, and whom the method invites to participate. As Arnstein (1969) argues, a critical approach should be taken to the array of participatory methods and to the different degrees to which they enable involvement and interaction.¹⁸ In her outline of a typology of participation, Arnstein places participatory methods and initiatives on a scale ranging from *non-participation*, across degrees of *symbolic participation* (tokenism) to degrees of *citizen power*. At one end of the scale, manipulative strategies are masked as participatory arrangements, as a means of legitimising decisions which have already been made and where no real influence is possible. Symbolic participation occurs in methods or arrangements in which the aim is to inform, appease or consult the public. Public hearings and surveys may fall into this category. Arnstein (ibid.) argues that information or consultation can in some cases be the point of departure for actual participatory processes, but she emphasises that as participatory tools they cannot stand alone.

At the other end of the scale are methods that to a greater extent allow for a two-way process of interaction, where decision makers and the public are engaged in dialogue. Such processes will, potentially, affect both parties and lead to decisions that, at least in theory, are more socially acceptable and robust. Following Arnstein, it might be argued that these types of initiatives are characterised by their aim to make real public influence or citizen control possible. Methods like consensus conferences and citizen juries must be said to belong to this end of the scale. Participatory processes within this interactive understanding may be defined as '*deliberation on the pressing issues of concern to those affected by the decisions at issue*' (Fischer, 2000; 32).

3.3 The consensus conference model

The model of participatory consensus conferences, which is now widely referred to as 'the Danish model', represents a further development from the original consensus conferences of the US Office of Technology Assessment (OTA).¹⁹ The aim of the OTA conferences was to expose expert views and to reach consensus among experts regarding a given topic. Consensus is still (in most cases) an aim, but rather than

¹⁸ Although more than 30 years old, Arnstein's much-cited article proves to have continued relevance, not least because it high-lights the need to go beyond persuading concepts which - then and now - have proved capable of covering up cases of sheer manipulation. Arnstein stresses the importance of investigating the potential for different procedures to enable actual influence.

¹⁹ The Danish Board of Technology (DBT) developed their method in the mid 1980s and the first participatory consensus conference was organised by the DBT in 1987 on the topic '*Gene technology in industry and agriculture*' (see the DBT website www.tekno.dk for a comprehensive list of Danish consensus conferences).

striving for consensus among experts, consensus is sought among laypersons. The involved laypersons act as representatives of the public, a position or role that, in relation to the conference proceedings, is often a matter of dispute. As will be exemplified later through case study results, the role as representatives of the public can take on different meanings in relation to experts, to decision-makers, and to the general public, as it were.

Over the past 15 years, the use of the consensus conference as a participatory procedure has spread to other parts of Europe, as well as to places as diverse as Argentina, Canada, Australia, Japan, and South Korea.²⁰ When applied to other countries the 'Danish model' is sometimes adjusted and developed in an attempt to make it more acceptable in the cultural or political context into which it is being introduced. The alterations of the consensus conference model typically stress specific aspects or tone down others and the adaptations are often reflected in the use of other names like Citizen forum (Germany, 2001), PubliForum (Switzerland, 1999) or Citizens' conference (France, 1998). One of the more important types of variations from the original concept concern the extent to which consensus is required, or whether dissent is allowed or even strived for, in the final report.

Although the set-up of participatory consensus conferences may vary slightly from one conference to another, the majority of conferences do have shared organisational features. One is that an involved panel of laypersons pass through a learning process in which they are informed about the conference issue, and about the main questions, debates, and conflicts that are central in relation to this issue. Typically this process includes lectures and the personal study of selected documents and articles. Secondly, using this information, the lay panel set up a list of questions that they feel need to be addressed if they are to form an opinion on the matter in hand. Thirdly, experts are chosen to consider these questions and present their answers to the lay panel at a public conference. Finally, the lay panel withdraws and considers the issue. It then presents its conclusions in a final document, which is presented to the public on the final day of the conference.

The deployment and spread of the participatory consensus conference is one result of a series of developments, which aimed to counteract the more technocratic position inherent in the public understanding of science (PUS) approach.²¹ One purpose of the consensus conference model is to allow for all interests, viewpoints, and knowledge forms to be taken into account, and, ideally, to form part of the basis for political decision-making. In recognition of the fact that technological developments do not exist in a social vacuum, one aim of the consensus conference is to create a forum where lay people can set the agenda and where they can interact with experts and decision-makers. With all actors benefiting from the mutual exchange of experience, knowledge, and concerns, ideally, this type of process will lead to decisions that are socially robust. The consensus conference model, in short, has the potential for making real public influence possible, placing it at the top end of Arnstein's ladder of participation.

Such a definition of the consensus conference, however, reflects what one might call a 'blueprint' or a text book-definition of this participatory model, rather than an understanding of the processes of interpretation that take place when the model is applied in a particular socio-economic, cultural, and/or political context. As has

²⁰ See The LOKA Institute website for an overview of '*Danish-style, citizen-based deliberative 'consensus conferences' on science & technology policy worldwide*', <http://www.loka.org/pages/worldpanels.htm>, Assessed May 15, 2004.

²¹ For further discussions, see interim report task A, and Nielsen *et al.* (in press).

become clear from our case study, the results of which will be reported shortly, interviewees held rather different and not always predictable ideas about what should be the goals and the outcome of a consensus conference and how it might best be organised. Their sometimes conflicting conceptions of consensus conferences bear witness to the fact that the concept of participation itself is a contextual and relational category; an insight that prompts one to question attempts, such as Arnstein's, to place participatory procedures on a static and one-dimensional value scale.

3.4 Results from the evaluative case study

In task B the aim was to evaluate the use of consensus conferences in four European countries. The selected conferences, which were carried out in Norway (1996); France (1998); Switzerland (1999) and Denmark (1999) all revolved around the topic of GMOs and GM foods.

The point of departure for analysing the empirical data has been the exploration of different models of democracy and of the material, social, and historical national backgrounds that form the frame of reference for the conferences. Within this analytical frame, perspectives are included on the political and democratic cultures of the case countries, as well as the historical and material contexts in which the democratic cultures are embedded. Thus, the study of different models of democracy has been intertwined with an exploration of, for instance, the historical context of the field of agriculture, the national industries, or the development of biotechnology. Looking into how GM foods or GMOs as a field is constituted in each country, has been just as relevant to the analysis as assessing the implications of the differing political cultures. In order to explore the differences between national political cultures, different models of democratic legitimacy have been invoked as an analytical tool to investigate whether the political cultures of the case countries were most strongly impacted by currents of procedural, communitarian, or deliberative democracy.²² It should be noted that these models of democratic legitimacy are not ones that have emerged from our case studies, but rather some that are used in current literature in the field of political philosophy, and as such, are to be seen as ideal types used for analytical purposes. Within the frame of procedural democracy, democratic legitimacy is attained through the workings of fair and transparent procedures, and is connected with political equality as expressed in the votes of fairly elected representatives. Within the communitarian notion of democracy, legitimacy is attained when political decisions are rooted in community's basic common values; and within the model of deliberative democracy, one way of creating democratic legitimacy is through the operation of a deliberative procedure in which different actors are accorded equal chances to make their voices heard.

Furthermore, it should be noted that using models of democracy as an analytical concept does not imply an evaluation of the case country's democratic merits. Or to put it differently, the purpose of looking at different models of democracy is not to determine whether one case country is 'more democratic' than the other. Rather, the purpose is to assess how different national and political cultures constitute very different contexts into which the consensus conference is being interpreted and implemented - and how this affects the process of the conference.

²² This discussion draws on a paper by Jensen, *Public participatory procedures and different notions of democratic legitimacy*, prepared for the EU project Ethical Bio-TA Tools, 2003.

What follows is a summation of some main results from the evaluative case study. The most interesting perspectives to have surfaced from our study revolved primarily around four themes:

- The attainment of democratic legitimacy in the conference procedures;
- The role played by lay people;
- The perceptions of different knowledge forms; and
- The perceptions of the role of ethics

3.4.1 Democratic legitimacy

The question of democratic legitimacy in relation to the conference procedures is closely linked to questions about the motivation for initiating a consensus conference and to the ways in which the model was received in the respective countries.

The case study shows that in France, where the procedural notion is prevalent,²³ there is a pronounced sense of suspiciousness towards the idea of a consensus conference.²⁴ Several interview persons found the model to be incompatible with the ideals of a representative democracy, and stated that political decisions which were influenced by non-expert advice or in-put from ordinary lay people would be seen to have no democratic legitimacy. In Norway, the communitarian notion has a strong impact on the political culture, something that is shown in the fact that for political decisions to have democratic legitimacy they must originate in the ideals, morals, and values of the general community. Thus, the legitimacy and validity of a procedure such as the consensus conference is immanent, precisely because it provides a forum where lay people's opinions, perspectives, and values can be allowed to influence the basis for political decision-making.²⁵

Danish political culture is marked by an inclination towards the deliberative notion of democracy, which can be seen to translate into a clear focus on the ability of the consensus conference to further the opportunities for open and unbiased debate, thus strengthening the bases for public deliberation.

It is important to know that the Swiss political culture differs from the forms of democracy of Denmark, Norway, and France. This is an attribute of the special situation within a multilingual 'concordance democracy', a half-direct democracy, containing elements like referenda and plebiscites within a federative structure. On the one hand this is a reason why 'consensus' seemed to be a suspicious political aim in the eyes of the participants. On the other hand the procedure is valued as an experience of more political openness, tolerance and acceptance of alternative

²³ For a discussion of the notion of procedural democracy in French political culture, see Brubaker (1992) and Bell (2002).

²⁴ It should be noted here that when models of democratic legitimacy are linked to national political cultures, it reflects the fact that currents of one or the other model are more predominant in respectively Norwegian, French, Swiss or Danish political culture. The salience of particular models of democracy in the political cultures of our case countries has been demonstrated throughout the case study, and is also described in current literature on political cultures. One must be aware, however, that currents from all the democratic models that have been described may be found in all four political cultures to a lesser or greater extent, and thus the respective countries do not correspond to the models of democratic legitimacy in a one-to-one relationship.

²⁵ For discussions of Danish and Norwegian political culture, and the impact of deliberative and communitarian notions of democracy, see Østerud *et al.* (2003) and Østergård (1992).

perspectives and dissent. This situation is also expressed in the new name given in Switzerland for this type of consensus conference: 'PubliForum'.²⁶

Hence, a country's dominant notion of democracy can lead to very different ideas about when, and how, political decisions attain democratic legitimacy, and this, in turn, generates different ideas about what can and should be the aim of implementing a participatory model such as the consensus conference. These aspects should be taken into account when organising a consensus conference precisely because the concept of public deliberation and participation might be endowed with different meanings and interpretations depending on the national context. The initiation of a deliberative process will not in and of itself bring about democratic legitimacy, as is evident if one looks at the French conference, where the aversion to public deliberation at the level of national politics was exactly what gave way to such harsh criticism of the model.

3.4.2 Perceptions of the role of lay people

Dominant conceptions of public deliberation, in turn, will influence, and be influenced by, dominant perceptions of the roles of experts and lay persons. The case study results clearly show that the expectations to the lay panel's contribution are formulated in entirely different ways from country to country. In Denmark, the lay panel's role is understood as that of managing the deliberative process towards consensus and thereby delivering an input to the political processes that is different from the input of other types of actors. In France, on the other hand, the dominant perception of the lay panel is based on a perception of them as non-experts. They are talked about primarily as a sample of the population, via the conference procedures, achieving insight into expert knowledge otherwise inaccessible to them. Thus, the general perception is that they are there to receive knowledge and become semi-experts, acting according to the ground rules laid out by the expert panel.

In Norway, there is an inclination towards seeing lay people as someone who will bring entirely different and more holistic, uninterested perspectives into the debate; who will secure a connection to the voice of the people; and whose input is therefore an invaluable contribution to the political decision-making processes. The Norwegian interviewees argued for the inclusion of lay people as the only way to ensure democratic legitimacy and accountability in technology assessment and political decision-making, and would even make room for the idea of involving lay people in conferences without giving them prior introduction or training in the topic at hand. To the French interviewees, this idea was unthinkable since they thought of the acquisition of factual knowledge as a necessary prerequisite for even participating in this type of debate.

In both Denmark and Norway interviewees argued that the use of consensus conferences had considerably altered the bases for discussing GM foods, in the sense that new types of perspectives, concerns, and values were now accorded legitimacy and validity in the ongoing debates and contestations over the topic. Meanwhile in France, where the role of the lay panel - and the locus of democratic legitimacy - was

²⁶ Baranzke, H., M. Meinhardt & B. Skorupinski, *PubliFora as an adaptation of consensus conferences in Switzerland. Report of Ethical Bio-TA Tools WP 2 – Task B: Evaluation of consensus conferences as an ethical tool*. 2004; Bütschi, D., S. Joss & M. Baeriswyl: 'Switzerland: New paths for public participation in a direct democracy, in: S. Joss & S. Bellucci (eds.): *Participatory Technology Assessment. European perspectives*. London 2002, 126-39.

conceptualised very differently, this degree of involvement of lay people became the object of much dispute and critique.

In the Swiss model the role of the lay people is more embedded in the democratic culture than in other countries, which influenced the acceptance of the democratic selection procedure of the lays and their role as citizens. During the PubliForum, within the process of participation, the lay panel developed from a more passive status in the beginning to an active and consulting function. This is also confirmed by the positive reaction in the media with regard to the opinion formation by lay people.

Thus, when organising a consensus conference it is important to consider how the role of the lay panel is conceptualised; what is expected from them, and what they are seen to bring to the conference debates. Failing to consider these questions might result in the aim of the conference being formulated in ways that might clash with dominant views of lay people and of the ways in which lay participation is accorded legitimacy, which in turn might have significant consequences for the reception of the conference.

3.4.3 The valuing of knowledge forms

The question of which knowledge forms or types of arguments are perceived to have legitimacy and validity was of concern to interviewees in all the case countries. In Denmark and Norway - and similar in the case of Switzerland - the focus was very much on how and to what extent, lay knowledge and lay perspectives were accorded value and legitimacy alongside expert knowledge and technical expertise. Meanwhile, in France the issue of interest was to ensure, rather, that the forms of knowledge or types of arguments associated with, or pertaining to, different *expert* groups were equally represented at the conference, so as to avoid claims of bias or non-transparency in the proceedings.

The forms of knowledge or types of arguments that were deemed valid and legitimate in relation to the French conference seemed very much to be a given, as they were associated with issues concerning risk assessments, economics, national competitiveness, and transparency and control in relation to vested interests which, in turn, were issues that dominated the conference discussions. These discussion areas to a very large extent define the field of GMOs in a French context, something which is likely to generate certain types of questions, which again calls for certain types of expertise or forms of knowledge to be represented at the conference, in order for these questions to be discussed. This means that in the French consensus conference, the central questions that were being debated had to do with risks and benefits, profits - and notably who would gain from these profits; as well as with France's position *vis-à-vis* the US in terms of technology developments and patenting. Several informants argued that these issues were the only ones that it made sense to discuss in a French context, and also that these were the questions into which ordinary lay people had an interest of gaining insight.

The same types of issues were of course to a certain extent discussed at the Norwegian and Danish conferences, but the Danish and Norwegian interviewees emphasised the need for a more open and broad agenda, comprising also environmental, social, and ethical issues, in order for the conference to attain democratic legitimacy.

In Switzerland the appreciation of expert knowledge was rather ambivalent. On the one hand there was confidence stated in the scientific knowledge of the experts

and the moral competence of the lay people themselves, emphasising the role of lay participation as autonomous moral agents, for instance when setting the main questions and selecting the experts. On the other hand there existed a certain scepticism concerning a hierarchical lay-expert-relationship. Thus the Swiss lay people preferred to speak of 'informants' instead of 'experts'. This indicates also that within the process of participation the procedure can alter the estimation of knowledge forms - especially if knowledge is produced by a critical discourse rather than instructed by omniscient 'experts'. Moreover the term 'informants' does relate better to the role of the scientific experts in the discourse, since they allowed bringing in information, not evaluations.

A conference topic can be constituted very differently from country to country, and there may be highly different ideas about which types of questions it is relevant to ask and how the discussion should be framed. For organisers of consensus conferences this stresses the need for an in-depth and nuanced picture of the field that is related to the conference topic, in order for possible types of framing of the conference discussions to be anticipated and taken into account.

3.4.4 The role of ethics

The discussion of valid and legitimate knowledge forms is linked to the question of the role of ethics. In France, where technological and economic arguments were setting the agenda for the debates, explicit talks of ethics and values were ruled out, and it was argued by interviewees that these issues pertained to an altogether different realm. Questions regarding the normative and ethical implications of gene technology were largely absent and did not, in relation to the conference, constitute legitimate areas of concern or debate.

The absence of a discussion of ethics and values was due in no small part, interviewees argued, to the fact that in the case of France, ethics is seen to pertain to the private sphere of subjective beliefs and personal judgements. Thus, ethical reasoning was not, as was the case in Denmark and Norway, a part of the ways in which the topic was being framed and discussed.²⁷ In France, the dominant view that ethical reasoning should not be a part of the conference discussions is rooted in the country's inclination towards a procedural notion of democracy. After all, if ethics belong to the private sphere, as our French interviewees argue, then ethical assessments should not inform the decisions of publicly elected representatives. Informing the decision-makers should be the task of experts and specialists not lay people representing views and values that are not necessarily shared by the public, as this would detract from the political equality of citizens in the democratic state.

In the Scandinavian countries, the role of ethical reasoning in the debates was, in fact, seen to be that of a counterweight to balance the types of arguments and knowledge formulated by natural scientists and technical experts. Contrary to what was the case in the French conference, ethicists, social scientists, and philosophers

²⁷ It could be argued that this kind of reasoning implies a 'translation' of conflicts over *values* into conflicts over *interests*. It is worth considering that ideas about what constitutes risks, who might be subjected to them, and at what costs, are also notions which are based on ethical assessments. In the French case, however, conscious choices are taken to separate ethical distinctions from the collective sphere, and to see them as pertaining strictly to the private sphere. Thus, the different approach to ethics that was expressed by French interviewees might be rooted in both a substantial disagreement (different conceptions of ethics do prevail) as well as fundamental disagreement (ethical arguments are placed under a different heading and separated from explicit talks of ethics).

were included in the expert panels of the Norwegian and Danish conferences. In the Danish case, the argument in favour of including discussions of ethics and values in the conference debates was rooted in the ideal view that all types of knowledge and every angle of the debate should be discussed in order for the deliberative procedures to take place in the most open and unbiased manner. In the case of Norway - and very much in accordance with the communitarian model of democracy - the main reason why ethics was seen as such an important part of the debate, was primarily that ethics and values represented in a sense the essence of lay knowledge. As one Norwegian interviewee stated, *'ethics is the area where every person can be said to be an expert'*.

The Swiss situation was similar, and all participants pointed out the importance of ethics with respect to the topic 'GM food'. The ethical competence of the lays as autonomous agents seemed to be obvious, while on the other side the concrete competence of one invited ethical 'informant' sometimes has been criticised. This raises the question, how it is possible to improve the 'ethical input', if necessary, and the ethical discourse during the participation procedure. In table 3.2, the central points discussed in section 3.4 are summarised.

Table 3.2 Summary of central points from the case study

	The attainment of democratic legitimacy	Perceived roles of lay people in the conference	Valuing of knowledge forms	Perceptions of the role of ethics
Denmark	Deliberative procedures must be enabled in a way that allows all types of actors to participate and to voice their opinion on an equal footing	The role of lay people is to participate in the deliberative processes, by which consensual recommendations are made that can be used to inform political decision-making	A focus on equality between lay and expert knowledge. Inclusion of diverse types of experts such as ethicists, social scientists, or experts in environmental issues	Ethics is seen to be a central issue in the conference discussions, particularly because questions of ethics are central to an open debate on GM foods
France	Elected representatives with authority in decision-making processes should not receive advice from laypersons. Thus, public participation cannot be linked to parliamentary politics	The role of lay people is to participate in the debate in order to represent the position of non-experts. Their contribution consists in working to achieve knowledge so that they are in a position to discuss with experts	A focus on equal representation of different areas/positions in expert fields. Prioritising of natural scientists, law experts, economists, NGOs	Ethics is not seen to be a relevant or legitimate issue in the conference discussions. Ethics is seen to pertain to the private sphere and has no place in the collective arena of public deliberations
Norway	Political decisions must originate in the ideals, morals, and values of the general community. Lay people's opinions and perspectives should be allowed to influence the basis for decision-making	The role of lay people is to secure that political decisions are informed by ordinary people's values. They contribute by bringing to the debate an altogether different type of everyday knowledge or holistic perspective	A focus on equality between lay and expert knowledge. Inclusion of diverse types of experts such as ethicists, social scientists, or experts in environmental issues	Ethics is seen to be a central issue in the conference discussions, particularly because ethics and values represent the essence of lay knowledge. Ethics is an area where the contribution of every citizen is valuable
Switzerland	Lay people's judgements and perspectives should be heard as a basis for decision making in a concordance democracy with elements of half-direct democracy	The role of lay people is to contribute to the decision-making process by informing political decision makers about the opinions of a well-informed and (kind of) representative citizen. The lay produce recommendations in order to inform and influence the public debate	A mixture between former (paternalistic) fact-sheets and equality between lay and informant. Inclusion of diverse types of informants such as economists, politicians, NGO-members, scientists, civil servants, ethicists	Ethics was regarded as crucial in the debate but not satisfactory represented among the expert panel in the PubliForum concerning GM foods

3.5 Developing the model: Recommendations for the use of consensus conferences

The empirical insights described above stress the need for careful consideration of the various stages of planning and organising a consensus conference. Accordingly, recommendations will be outlined following the stages in this process.

3.5.1 Phase one: Initiation and planning

A variety of dimensions need to be considered at this initial phase of planning the conference. Some are perhaps obvious, while others might not be, at least not to first-time users of the model. This category of recommendations concerns those considerations that take place before the actual organising of the conference. The recommendations have been organised according to sub-categories, which will each of them be followed by some notes to elaborate and to outline some practical implications, on the basis of examples from the case study.

Aims and purposes of the conference

Central points to be considered:

- 1) What purpose(s) will be served by carrying out the conference;
- 2) Why is the consensus conference model thought to best serve these purposes rather than any other type of participatory procedure;
- 3) Is this the first time a consensus conference is being organised, or is it one in a series of several

Re. 1) A conference could serve a variety of purposes such as broadening and qualifying the public debate; affecting decision-making; altering the power balance in relation to a particular topic; or introducing participatory procedures and placing them on the political agenda. It is important to consider at an early stage what purposes the consensus conference is expected to serve and to consider how the national political culture and the dominant notion of democracy will affect the chances for succeeding in achieving these stated goals. For instance, as shown earlier in the French case, the stated aims of the conference clashed, in ways that were crucial, with the dominant notion of democratic legitimacy: The broadening of public debate and a consultation of lay perspectives and lay concerns in the political process is hardly attainable in a political culture where elected representatives are seen to lose democratic legitimacy if they receive advice from a panel of randomly selected lay persons.

Re. 2) The French organisers, however, still chose to have a consensus conference, and while, obviously, the argument is not that French political culture is at odds with public participation *per se*, the relevant point here is that perhaps the organisers could have been more critical in terms of exploring the possibilities of employing other types of participatory procedures, which were not in such stark contradiction to the democratic culture. Furthermore, the failure of the French conference to achieve its stated goals is mirrored in the fact that in a French context, a participatory procedure such as the consensus conference would be more likely to gain momentum if it was organised through a body not linked to parliament.

Re. 3) It is in many ways important to look at the history of the organiser country in terms of employing participatory methods in general and consensus conferences in particular. In the Danish case it was obvious that the country's long history in terms of developing and organising consensus conferences put a certain

perspective on the way each conference was being conceptualised. Interviewees argued that with each new conference the focus was very much on the given topic and not on the procedures, which followed a more or less fixed and taken for granted protocol. Contrary to this, in France and Norway, where in both cases this was the country's first conference ever, the focus turned out to be very much on the procedures and not so much on the topic, albeit for different reasons. In Norway, the time seemed to be just right for an innovation of this sort, and the introduction of this method was seen, in fact, as a way of lobbying for the establishment of Norway's new Board of Technology. This alternative agenda, it was argued, also in significant ways affected the choice of conference topic. In France, on the other hand, the focus on the procedures rather than the topic was a result, as shown earlier, of the sense of suspiciousness and criticism that prevailed in relation to the conference. Thus, prior experience or lack of experience proved to be crucial in terms of how a consensus conference is being conceptualised.

Institutional setting

Central points to be considered:

- 4) The role and status of the organising body and the significance of its position as e.g. NGO, grass root, corporate, or advisory to the parliament

Re. 4) The variety of different organising bodies that would potentially host a consensus conference range from research institutes, over science museums to boards or institutes that give advice to parliament. Such different institutional settings represent different work processes, and mechanisms and fill out different statuses and roles in society. Depending on a country's notion of democratic legitimacy, these processes, roles and mechanisms will be attributed democratic legitimacy in different ways and to different degrees, and this means that the choice of institutional setting greatly affects the chances for a consensus conference to achieve its goals.

For instance, our French interviewees point to the fact that a conference organised in 2002 by a French science museum attained democratic legitimacy and was generally well received, something which they attribute to the fact that this time, the conference was not associated with parliamentary politics, which had been the case in the 1998 conference. Contrary to this, Danish and Norwegian interviewees stressed that the link to parliament was what gained the consensus conference its legitimacy. In these countries - and in accordance with their respective models of democracy - the closer participatory procedures are to the processes of decision-making, the more legitimacy, validity, and trustworthiness they attain. Thus, considerations over the position, role, and status of the organising body are crucial in order for the conference to achieve desired goals.

Furthermore, different organisations and institutions may be associated with different vested interests and power struggles to different degrees. If one looks at TA-organisations - as a type of institution that would be likely to organise consensus conferences - they are in many ways regarded as neutral institutions, but in fact they are placed in a really difficult relationship in the midst of conflicting interests of politicians, industry, societal groups, the public and of citizens, and the institution itself. It is important to consider the ways in which this intricate relationship might play a role in affecting the conceptualisation of a consensus conference, such as the selection of the conference topic, the determination of the moment for arranging the conference, as well as the decision between technology- or problem-induced approaches.

Societal context

Central points to be considered:

- 5) The ways in which a consensus conference is expected to be perceived and received in the public;
- 6) The democratic ideal that characterises the national political culture, and the ways in which democratic legitimacy is attained within the political system

Re. 5) The French case in particular showed that it is crucial to have a clear idea of how a certain participatory procedure is viewed, what is expected of it, and how it corresponds to dominant democratic ideals. This is the point of departure from which to judge whether a participatory procedure will be appropriate and useful in a certain national and political context.

Re. 6) Insight into the dominant notion of democratic legitimacy is needed in order to assess how the processes and mechanisms of a consensus conference will be viewed and received both by the actors partaking in the actual conference proceedings and by the wider public. The wish for, or the need to, employ a participatory procedure can come from many different sides and be a consequence of many different types of developments. However, it may not be obvious how this wish to enable participatory processes is best managed, and often it is a question of finding out through which channels these processes might best be carried out. If for instance, as was the case in France, the best way for public participation to attain legitimacy is to organise it on the level of local politics rather than in relation to the parliamentary level, then this is a valuable lesson to be learned. In Denmark, on the other hand, the proximity to parliamentary politics and to the Parliament (also geographically in terms of the location for the conference proceedings), was the equivalence of relevance, legitimacy, and validity, and thus was an important element in a successful conference.

The conference topic

Central points to be considered:

- 7) Why is this particular topic chosen, and is it related to any power struggles or conflicts of interests

Re. 7) The selection of conference topic will of course deeply affect the ways in which the consensus conference is perceived. The choices that are made with regard to conference topic reflect many other central aspects of the conference such as: Which groups, positions, power struggles, and conflicts will be invoked through this initiative? Is it going to be controversial? Which types of outcomes can be expected to be the result of this conference? What can be said about timing in relation to the topic in terms of decision-making processes, new initiatives, legislation, etc.?

As has been argued in the Norwegian case, one by-product that was hoped to be achieved from the 1996 conference was the establishment of a Norwegian Board of Technology. Several interviewees believed that this alternate agenda had contributed in no small part to the choice of GM foods as the conference topic. GM foods was not, at the time, perceived to be a very controversial topic and was not related to very strong national interests or power bases. Thus, it was assumed that such a topic would be useful in terms of showcasing the legitimacy of the consensus conference as a participatory procedure. In France, on the other hand, organisers described the selection of topic as a case of being forced into having a consensus conference on GMOs, seeing as the issue was so contested and the demand for public consultation

was described as the inevitable path to take. Considerations regarding the desired outcomes(s) of the conference should also be taken into account in relation to the conference topic. It is of course of paramount importance whether the selected topic deals with an issue where crucial political decisions have already been made, or where perhaps there is a possibility for real change and influence. Here, the question of timing is immanent. If the carrying out of a consensus conference coincides with important political decision-making, then this political momentum and the possibility of seizing it, will surely affect the general perception of the conference.

3.5.2 Phase two: Organisation and deployment

In this second phase, where the actual organising and deployment of the conference takes place, choices and decisions need to be made which will greatly influence the possibility for the conference to achieve its stated goals. Here, organisers should take into account the two dimensions of the conference, concerning firstly the *topic* of the conference; how is it being framed, discussed, and which power struggles and conflicts are surrounding it; and secondly, the conference *procedures*; how will the consensus conference model be viewed and which criteria need to be fulfilled in order for its procedures to attain democratic legitimacy. Bearing these questions in mind, the following steps of the deployment of the consensus conference need to be taken into consideration.

Steering committee, preparation of lay panel

Central points to be considered:

- 8) How will the composition of the steering committee affect the conference procedures;
- 9) Is training a necessary prerequisite for lay participation, and what is thought to be achieved in this process

Re. 8) The more contested the topic, the more likely it is that conflicts will occur regarding the composition of the steering committee. Both in France and in Denmark the respective steering committees were criticised for not being balanced in terms of different opinions and positions being represented. In Denmark, the conference proceedings were negatively affected by the fact that some experts did not feel that the right persons had been invited to the steering committee, and therefore felt the agenda setting was biased. In the French case the conference procedures were subject to great scrutiny, and since there was an atmosphere of considerable suspiciousness towards a consensus conference, it was all the more important for organisers to defend it against allegations of bias and lack of transparency in the steering committee. In Norway, on the other hand, because the topic of GM foods was neither, at the time, a very well established field, nor a very contested issue, there was no controversy over the composition of the steering committee. As one interviewee put it '*everyone who was working with GMOs was going to participate anyway*', and this sense of inclusiveness contributed to a general perception of the conference procedures as fair, open, and unbiased.

Re. 9) A rather crucial point in the organisation of a conference is the preparation of the members of the lay panel. In all four case countries, training sessions were organised where lectures were given and material was handed out for the lay panel members to study. In Denmark and especially in France, organisers argued that it would be unthinkable to carry out a consensus conference without

giving the lay panel initial training in terms of teaching them about the topic at hand, and also teaching them how to fulfil their role of lay panel in the conference discussions. In Norway, however, the organisers were more open to the idea of letting 'people walk in from the street' so to speak, and thus felt convinced that the value of lay participation did not lie in them being trained, educated and otherwise prepared to take part in the conference. Here, organisers argued that since the contribution of laypersons to the conference consisted of a unique everyday 'down-to-earth' perspective and an approach that encompassed all types of concerns, values, knowledge, and emotion, teaching them about the topic of GM foods, for instance, should not necessarily be a prerequisite for their participation.

In the case of France, organisers felt that without training any involvement by laypersons would be senseless and futile. The training sessions were spoken of as getting the laypersons up-to-speed with the experts, and some saw it as a process through which the lay panel would become semi-experts. This view greatly contradicts the position of the Norwegian organisers, something that stresses the importance of considering carefully if/why training sessions are needed, what is thought to be achieved in the process, and how training sessions should take place.

Preparing lay panel members in terms of the procedural aspects of the conference, choices and decisions need to be made with regard to the ways in which information might be made accessible about the conference they shall take part in, the role of the organising body, and the role of all groups and individuals involved in the conference at stake including the lay panel itself. There may be a need for them to be informed about the targets of the arrangement and about what they are expected to do. It is important also to consider how laymen can be acquainted with the targets and expectations, connected with the conference in order to assess their own role including their possible achievements: as individuals, as a group, morally and politically.

Selection of lay and expert panels

Central points to be considered:

- 10) Which strategy for selecting the lay panel would be most favourable;
- 11) Which strategy for selecting the expert panel would be most favourable

Re. 10) Regarding the question of selecting the lay panel, several procedures can be followed. Again, it is important to assess how the different procedures would be perceived in terms of the legitimacy of the conference. Both the French and the Norwegian organisers discarded the procedure that was used at the time by the Danish Board of Technology (DBT), whose protocol they otherwise looked to for guidance and inspiration. At the time, DBT recruited its lay panel members by putting ads in newspapers and newsletters, but organisers in both Norway and France felt this procedure would detract from the legitimacy and validity of the conference. In order to avoid self-selection and bias in the lay panel, they both opted to use survey institutes to handle the random selection of lay panel members, a procedure that today is also being employed by the DBT.

Re. 11) With regard to members of the expert panel, in all case countries the steering committee worked out a comprehensive list of experts they thought might be relevant to invite to the conference. Then during the training sessions the lay panel was asked to list the types of expertise they would want to see represented in the expert panel. They were then presented with the comprehensive list from which they could accept or reject different experts. In France, some lay panel members requested

that several of the teachers from the training sessions be admitted to the expert panel, something which at first caused some concern among the steering committee members, but was ultimately accepted. All interviewees agreed that in this phase of the conference procedures, it is of utmost importance that the lay panel feel that every type of expert knowledge or expertise is represented in the expert panel, and that any type of expert whose views and perspectives they think might be relevant, is invited to the panel.

With regard to the selection of experts, some considerations concerning the inclusion of ethical expertise in a consensus conference might be fruitful. The inclusion of ethical experts does not represent the introduction of the moral point of view into the discourse, nor is it necessary to do this, but rather, it represents the potential of conflicts between several moral perspectives or normative ethical approaches. It must be considered whether inviting only one ethical expert is sufficient. As well as in the case of scientific experts, counter-expertise may be required in order to give the lay panel an idea of the ethical controversy. Such a plea for several ethicists would take into account the fact that several ethical approaches do exist and that every ethicist prefers a specific ethical position to others.

Conference proceedings

Central points to be considered:

- 12) What is the primary role and contribution of the expert and lay panels respectively in the conference discussions;
- 13) Which characteristics or qualities constitute experts as being experts, and lay persons as being lay persons;
- 14) How are different knowledge forms being valued or prioritised in the conference discussions, and are any types of arguments seen as unacceptable or not legitimate
- 15) What is the role of the facilitator and what is expected to be his/her contribution

Re. 12) The roles of the lay panel and the expert panels in the conference discussions were crucial questions over which our interviewees disagreed considerably. The Scandinavian organisers, and experts for that matter, agreed that the role of the lay panel was to present the experts with views and concerns that they might not normally be confronted with. To them, the unique opportunity that was realised in the consensus conference was that an opening was made for both experts and lay persons to confront preconceived opinions and challenge each other's fears, prejudice, and stereotypical views. The members of the Scandinavian lay panels would support this view and saw the conference as an opportunity for both experts and lay persons to learn, and several experts also stated that they felt that it had given them a chance to learn from other experts representing other fields of expertise. With regard to these questions, the French interviewees took a very different approach. Both organisers, moderator, and experts felt that the role of lay people in the conference was to learn, be informed, and to gain a new basis from which to form their opinion on, in this case, GMOs. The conference was seen to be a unique opportunity for a handful of lay people to obtain insight into state-of-the-art knowledge and expertise that they would otherwise not have had a chance to consult and learn from. This informative and educational purpose of the conference was thought to contribute to a general elevation of the level of the debate on GMOs. As for the role and contribution of the expert panel, the French interviewees agreed that their task was to provide clear, valid, and professional in-put for the lay panel to consider,

and that their obligation was to refrain from using manipulative strategies. To the French interviewees, the idea of the experts learning something from the members of the lay panel seemed irrelevant, nor was there any expectation that members of the expert panel would learn from each other, seeing as each of them was there to elaborate, and argue from, his or her own position.

As suggested above, some interviewees would subscribe to a view of experts as informants and laymen as receivers of knowledge. It is revealing that all interviewees of the Swiss PubliForum on gene food remembered a member of the experts' panel complaining that the lay panel asked (the) wrong questions. One could argue that this approach fixes one-way conceptions of learning, and that these could be challenged through consensus conferences. Through the conference procedures in the discursive setting, the citizens' judgement is formulated as a complementary form of expertise. In contrast to a scientific counter-expertise, the citizens' expertise introduces a further perspective into political consideration, namely the perspective of the concerned. The laymen are, as representatives of the possibly concerned, asked to give their evaluative and normative judgement to the technological development at stake.

Re. 13) In relation to the question of the roles of experts and lay persons, it is relevant to consider what is meant by the term lay or expert in the first place. It seems, from the very differing viewpoints put forward by our interviewees, that quite different qualities or characteristics may be associated with these categories. Among participants in the Danish and Norwegian conferences, there was widespread agreement that what characterised lay participation as valuable in and of itself, was the idea that their contribution would represent the knowledge of everyday people with a very wide horizon comprising all types of considerations whether they be cultural, environmental, economic, religious, or social. Laypersons, in this view, would have legitimacy in their own right in relation to decision-making processes. In France, on the other hand, 'lay' is understood almost inseparably in relation to 'expert'. Thus, lay people are mostly spoken of as someone who lacks knowledge, insight, or experience possessed by the expert. In relation to the decision-making processes, the French approach, as discussed earlier, is that the involvement of lay people on the level of parliamentary politics detracts from the democratic legitimacy of the political procedures. Thus, lay people have no place or legitimacy in and of themselves in relation to the political process, and in addition are in most cases defined by what they are *not* vis-à-vis the experts.

These insights into the lay-expert roles and relations points to the importance of contemplating the meaning of lay and expert and considering what their roles and contributions are going to be, and such considerations must play a central role in the organising of a consensus conference.

Re. 14) The inclusion of different knowledge forms or types of arguments or expertise in the conference discussion is a point that is closely related to the attainment of legitimacy in the conference procedures. It is crucial in order for the conference discussion to be deemed fair and transparent that any type of question can be posed and that any viewpoint can be argued. In order for this to happen a variety of issues and topics must be allowed into the discussions and if some issues or questions are being left out of the debates at least some kind of attempt should be made to understand why this is the case. In the French conference, as shown earlier, (explicit) ethical reasoning was left out of the discussions, and the concept of bioethics was largely absent. This of course, had to do with the lack of bioethicists in the expert panel (and, as it were, in the French research community). However, it was also widely argued, as shown above, that talking of ethics in relation to the issue of GMOs

was not seen to be relevant in relation to the conference, nor was it seen to be in the interest of the public. It would seem that with the degree of framing that seems inevitable in relation to both the selection of conference topic and in the actual conference discussions, it is highly important to be aware which questions or knowledge forms are either being excluded or perhaps favoured in relation to the selection of experts as well as in the conference proceedings. It is particularly important to understand how the focus on certain knowledge forms or arguments in favour of others might affect both the lay panel's feeling of being listened to and having a fair chance of getting their questions answered; as well as the overall perception of the conference as being relevant, fair, open, and legitimate.

Re. 15) The role of the facilitator is in most cases conceptualised according to the role of an arbitrator, not of a judge. The facilitator has to take care of the participants and facilitate their working together as a group. He/she will most likely concentrate on the proceedings of the lay panel's discussions, on the internal dynamics of the group, on their work process towards stated aims (selection of topics, formulation of questions, writing up of final report), as well as on their performance in the actual conference *vis-à-vis* the expert panel. The facilitator often works to counteract intimidation and to encourage the participants to get involved in the discussions in such a way that the chances for lay panel members to express their opinion are allocated equitably and that the dialogue between laymen and experts is held in a language comprehensible for the laymen. The combination of such tasks is demanding with respect to psychological sensitivity, on the part of the facilitator. At the same time the facilitator has to remain neutral. He/she is thus not expected to make any substantial judgements or to contribute to the scope of arguments, but rather to foresee the optimal carrying out of the procedures surrounding the lay panel involvement.

In those consensus conferences we evaluated in our case studies, the respective facilitators had been recruited from the ranks of teachers, psychologists, and consultants alike. There was widespread agreement across the case countries that the facilitator ought to be someone with skills and experience in group dynamics, team building, and work processes. Interviewees agreed furthermore that the facilitator could not be someone with expertise or work experience in areas related to the conference topic, since this would gravely compromise his or her position.

Apart from involving a facilitator whose aim is to work closely with the lay panel members, it is also worth considering whether the involvement of an *observer* in relation to a consensus conference would be a fruitful development. The function of observing and giving orientation to the discursive processes unfolding at the actual conference would not adhere to the designated tasks of the facilitator. Thus, the possible involvement of an overall observer might contribute to gaining some sort of overview of how the conference proceedings take place, how the discussions unfold, and how the involved participants engage in them. However, the decision by organisers to involve an observer must be carefully considered against assessments of how this would be viewed and received in the context in which the conference is taking place. Depending on how the consensus conference is perceived and what is expected from it, the need for a conference observer might be judged quite differently. Further, it might be of importance - with regard to the decision to include an observer - whether the focus, in the conference in question, is seen to be primarily on the conference topic or on the conference procedures, which again might depend to a large extent on a country's history and experience with the use of consensus conferences.

Presentation and dissemination of results

Central points to be considered:

- 16) How should the results of the conference be presented to the public and who should be present at this event;
- 17) What role should be played by the media in the dissemination process

Re. 16) The results of a consensus conference are usually presented at a press conference, in the form of a final report, to the public and sometimes to specially invited groups or persons such as decision makers, politicians, NGOs. For the involved lay participants to feel that this expression of citizens' expertise is given appropriate attention and urgency, it is important to take into consideration the different expectations, on the part of both experts, lay panellists, and organisers, with regard to how the results should be disseminated. Thus, it is important to consider questions such as: Would the involved experts favour the presence of certain actors or interest groups at the press conference? Do the organisers aim at presenting the results to stakeholders, people with specific interests in the topic – or rather to members of the general public? Would the lay participants favour the presence of certain actors or groups that they consider to be addressees of the results? And what role does the presence of politicians play with regard to attributing legitimacy to the conference and its results?

It should be noted that in relation to these considerations, the question of consensus plays a significant role. One argument often voiced in favour of the lay panel striving for consensus in their recommendations and suggestions, is the important signal for political decision makers that lies in the fact that consensual agreements are not as easily dismissed as the expression of heterogeneous voices, opinions, and concerns. This represents one path that can be chosen, with regard to the question of achievement of consensus. In terms of making the information relevant or applicable organisers might consider whether it is more valuable to thoroughly work out areas of consent and areas of dissent. If majority- and minority-opinions turn out as a result, it should be considered whether and how both parties should have the opportunity of, firstly, presenting their opinions to the public and, secondly, of documenting them in the final report.

Re. 17) Insofar as not only political decision makers, but also the general public is the addressee of a consensus conference, the organising body may consider how to present the results of a consensus conference to the public with the help of the media. When presenting the citizens' judgement, the organising body may allow for the public to check the way the arrangement was done. That supports transparency and trust. One advantage of disseminating conference outcomes via the media could be the opportunity for organisers to feed back the media's coverage and use of the results - and their possible effect onto political decision making (so far this can be found out) - to the participants of the conference.

References chapter 3

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4 Food chain value communication (WP3)

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4.1 Introduction

In this chapter we present the results of the third task of Workpackage 3 (WP3) of the EU-financed project 'The Development of Ethical Bio-Technology Assessment Tools for Agriculture and Food Production' (QLG6-CT-2002-02594). The purpose of WP3 is to develop a set of tools that can help to integrate ethics in food chain management. The focus of the tools is to facilitate moral communication between economic actors in the food chain and between these food chain actors and consumers in order to gain trustworthiness.

The development of ethical bio-technology assessment tools for agriculture and food production should not be seen as an isolated project. In the last decade the world of business has been strongly influenced by concepts such as sustainability and social performance. Companies and firms are more and more challenged to reflect on their ecological and social responsibilities. The development of ethical bio-technology assessment tools can be integrated in the wider context of corporate social responsibility (CSR).

In the evaluation of the steppingstones in the second interim report we concluded:

'Most tools are not very helpful for developing communicative tools. In the innovative phase we should concentrate on value-clarification (self-clarification and other-clarification) and we should try to combine this with a kind of normative and creative version of stakeholder dialogue as a participatory tool to facilitate interaction'.

In this chapter we confront these challenges and develop a tool to support corporations in the food chain that are willing to take part (or are already taking part) in a moral dialogue with stakeholders concerning biotechnology.

It is important to note that we believe that normally moral communication in the private sector is driven by ethical decision-making by governmental regulators (WP1) or by ethical opinion-formation by the general public (WP2). One could say that the ethical tool of WP 3 follows on developments that are taking place in the domains of the other workpackages. In our view this also implies that our ethical tool is subservient to the goals of the other tools. Strengthening and improving the moral communication of corporations with other stakeholders could support the working and effectiveness of the other tools.

We see our tool as an example of constructive ethics that stresses the possibility of a broad range of moral options. Our ethical tool aims at self-clarification, other-clarification and facilitating interaction with other stakeholders. While working out

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our tool, we start from the presupposition that moral deliberation does not only regard values but also responsibilities. In our ethical methods we will also pay attention to corporate integrity.

Our tool does not aim at an ethical label or an ethical checklist. It should help corporations to ascertain their moral position and responsibilities with respect to new (bio-)technologies. We formulate an umbrella list of eight values/concerns (food security, food safety, food quality, human welfare, animal welfare, ecological sustainability, transparency and traceability) that can serve as a convenient heading to classify moral and ethical debates on agricultural and food production. This list of eight values/concerns can also entice corporations in the food chain to look at a broad range of moral issues.

In section 4.2 we will summarize the pros and cons that pop up in the debate on CSR and give a definition of CSR. After that we will go into the circumstances and constraints that complicate corporate responsibility with respect to moral issues and pay attention to moral trustworthiness. At the end we will describe the objective, method and set-up of our ethical tool.

In the next sections we present ethical methods that can support the three stages in the process of moral deliberation - self-clarification (4.3), other-clarification (4.4) and deliberative interaction (4.5) - and we indicate the need for an organisation scheme which integrates these stages in a non-linear way (Brom et al., 2004).

4.2 Objective of a bio-ethical methodology

4.2.1 Corporate social responsibility

Pros and cons of CSR and a definition

According to the well-known economist Friedman, a corporation's only task is making profit for shareholders. His economic device is: '*the business of business is business*' (quoted in: Van Tulder & Van der Zwart, 2004; 75). In a world in which corporations are more than ever entwined in international and societal relations this classical doctrine seems hard to follow and not very realistic. In affluent societies corporations have to respond to the social expectations of stakeholders if they want to keep their 'license to produce'. The term corporate social responsibility points at this wider understanding of responsibilities of corporations.

Many corporations have indeed assumed a certain minimum role of social responsibility but is this sufficient? This debate is going on for more than thirty years and is still of topical interest. Davis (1973) summarised the pros and cons that supporters and opponents put forward. For an understanding of the debate on corporate social responsibility these arguments are still worthwhile to recall.

Arguments against corporate social responsibility

- Profit maximization (*cf.* Friedman) is the main economic function of business.
- Costs of social involvement: social goals do not pay their own way in an economic sense.
- Many businessmen lack the social skills to do the job.
- Involvement in social goals might dilute business's emphasis on economic productivity, divide the interests of its leaders and thereby weaken its position in the market place.
- The additional costs of social programs can weaken the international balance of payments.
- Business has enough power already and should not be given more social power.
- Social needs of people should not depend on the occasional helping hand of businessmen.
- Lack of agreement on this matter among the general public, in government and among businessmen themselves.

Arguments for corporate social responsibility

- Social involvement is in the long-run self-interest of business.
- Social involvement will enhance the public image of the firm.
- Viability of business will increase: society will be supportive to give business its charter to exist.
- Government regulation can be avoided if business engages in responsible behaviour.
- Businessmen should be aware of and take notice of socio-cultural norms.
- Stockholders can be interested in business that engages them socially.
- If other institutions fail in handling social problems, why not turn to business.
- Business has important resources and is known for its innovative ability; social problems can become profits.
- Prevention is better than curing.

We believe that the arguments in favour of CSR are underpinned by the increasing importance of (new) stakeholder groups. CSR has taken root on a worldwide level and is widely discussed in management science and business economics (e.g. Wood, 1991; Clarkson, 1995; Swanson, 1999; Waddock et al., 2002; Hopkins, 2003; Ten Pierick et al., 2004; Van Tulder & Van der Zwart, 2004). The 'Triple P Bottom Line' discussion about people, planet and profit has become acknowledged as a legitimate debate that cannot be brushed aside anymore by the argument that the only business of business is business.

Hopkins (2003) points at the negative tendencies of increasing poverty and inequality that urge the need for CSR, but we can also think of the wide-felt doubts that arise when new technologies are introduced in the agriculture and food production. Especially biotechnological innovations are often seen as dubious and dangerous. Because of these social issues there is a need in the food chain for a compact between corporations and public stakeholders such as governments, non-governmental organisations (NGOs) and consumer groups. CSR can be seen as a way to realise this compact. Under the flag of CSR it is difficult if not impossible for enterprises to ignore moral debates that are connected with new technologies. This is why the development of ethical bio-technology assessment tools can be integrated in the wider context of CSR.

CSR stimulates moral communication (in the corporation itself, between corporations and stakeholders) and the development of ethical tools is strongly connected with moral communication. For our cause CSR is especially important because of its affinity with moral communication. The following definition of Hopkins seems suitable for our perspective because it emphasizes the relation between responsibility and ethics and the importance of good (or ethical) relationships with stakeholders:

'CSR is concerned with treating the stakeholders of the firm ethically or in a responsible manner. 'Ethical or responsible' means treating stakeholders in a manner deemed acceptable in civil societies [...] The wider aim of social responsibility is to create higher and higher standards of living, while preserving the profitability of the corporation, for peoples both within and outside of the corporation' (Hopkins, 2003; 1, 10).

CSR does not refer to legal responsibilities. It is about taking responsibilities that go beyond compliance with the law. This also explains why there is no absolute standard for CSR. Each country has its own political and legal institutions that define the public role of the (welfare) state and the legal requirements that have to be met in the private sector. Therefore, responsibilities that go beyond these legal requirements will always be related to the context of political and legal institutions that can be very different. What can be seen as an act of CSR in one country can be considered merely an act of legal obedience in another country. In the development of our tool we are aware of this dependency of CSR on institutional arrangements. We also take notice of the culture of entrepreneurship that is considered typical for a country.

Social responsibilities that go beyond legal requirements usually refer to values and ideals that prompt for institutional changes. Therefore, responsibilities in the context of CSR are usually future oriented. In section 4.2.2 we will list the major values/concerns in the food chain that also outline the overarching future-oriented responsibilities of the agricultural and food sector.

CSR and stakeholder approach

Twenty years ago Freeman (1984) convincingly showed that a solid stakeholder approach is indispensable for the management of modern corporations. According to him, '*any group or individual who can affect, or is affected by, the achievement of a corporation's purpose*' (vi) should be considered as a stakeholder. Thorough attention for the needs and demands of different stakeholder groups is essential to put a modern corporation on the road of success. Corporations that limit the creation and distribution of wealth to only one stakeholder are probably following a self-defeating strategy. Other stakeholder groups will not accept such a one-sided strategy and the corporation will run the risk of losing its societal license to produce. However, we believe that a well-balanced stakeholder approach cannot only be grounded on practical reasons but also on normative reasons. In our development of ethical instruments our starting point will be a normative stakeholder approach.

Donaldson & Preston (1995) captured the implications of a normative stakeholder approach quite well by stating that stakeholder interests have intrinsic worth. That is, certain claims of stakeholders are based on fundamental moral principles unrelated to the stakeholders' instrumental value to a company. Stakeholder interests are thought to form the foundation of corporate strategy itself, representing 'what we are' and 'what we stand for' as a company. Given such a stakeholder

orientation, a firm shapes its strategy around certain moral obligations to its stakeholders.³⁰ Wempe, a scholar of business ethics, points to the crucial importance of (societal) trust that binds activities over the course of time. According to him, the guiding idea of a social contract between stakeholders and corporations justifies why corporations have certain social obligations. Contractual relationships of corporations are always embedded in a (comprehensive) social contract with other stakeholders.

CSR and stakeholder dialogue have much in common and one could think that both concepts refer almost to the same thing. Both are concerned with handling social responsibilities. However, the concept of stakeholder approach is less far-reaching than CSR. One could agree with Hopkins (2003; 22) that stakeholder dialogue takes place at the enterprise level and that CSR not only takes place at the enterprise level but also at the planetary level. Therefore, a well-balanced stakeholder approach is an essential part of CSR - maybe even the essential part - but it is not identical with it.

Firms and enterprises can be seen as a result of a social contract and as a consequence they have certain (social) obligations towards the stakeholders that make their (economic) functioning possible. Obligations are impossible to fulfil if one doesn't assume responsibility. In this sense a well-balanced stakeholder approach is directly connected with CSR.

4.2.2 Major concerns in the food chain

According to Draper (2000), a socially responsible company '*will seek and identify the concerns of its stakeholders and endeavour to treat those stakeholders fairly*' (quoted in Hopkins, 2003; 10). The question arises which major concerns can be identified in the domain of agricultural and food production. On the basis of our previous research we believe that the societal concerns about new technologies in the food chain can be brought back to eight values.

1. Food security: to what extent is the total amount of food in the world sufficient and fairly distributed?
2. Food safety: to what extent can we trust that our food is not dangerous for our health?
3. Food quality: to what extent is food authentic and nutritious and does it contribute to a healthier lifestyle?
4. Human welfare: to what extent are labour relations and a fair social distribution of resources threatened with (further) deterioration?
5. Animal welfare: to what extent are animals treated well and with respect?
6. Ecological sustainability: to what extent do we take care for our natural environment and does our development not compromise the living conditions of future generations?
7. Transparency: to what extent are firms in the food chain transparent about their methods of production?
8. Traceability: to what extent is it possible to trace back the different sources of food products in the (increasingly complex) food chain?

³⁰ In this vein, a Kantian posture (Bowie, 1994; Evan & Freeman, 1983), a feminist perspective (Wicks et al., 1994), and a fair contract approach (Freeman, 1994; Phillips, 1997) are examples of moral principles that can form the normative foundation for stakeholder-oriented management.

Transparency and traceability enable solutions for possible problems in the domains of the intrinsic values/concerns. Therefore, the last 2 values/concerns (transparency and traceability) can be seen as conditional (or process) values/concerns, while the first 6 values/concerns are intrinsic and have substantial content as they are.

The eight values/concerns mentioned above will be directive for the development of our ethical 'tool-box' that should help corporations in agricultural and food production to ascertain their moral position and responsibilities with respect to new (bio-)technologies.

4.2.3 Corporate dilemmas regarding moral communication

Looking at the discussion about CSR it becomes clear that the public at large in affluent societies does impose moral responsibility on corporations. At the same time it must be realised that CSR is governed by certain limits and constraints. Wempe (1998) and Kaptein (1998) describe two dilemmas with respect to moral communication that determine the 'corporate condition' of contemporary Western corporations: (i) the many hands dilemma and (ii) the dirty hands dilemma. While the first dilemma is at play in the (internal) relationships that employees within the corporation maintain in order to fulfil the responsibilities the corporation has, the second dilemma is at play in the (external) relationships maintained with various stakeholders on behalf of the corporation (Wempe, 1998; 190).

The many hands dilemma

As is obvious, a corporation is not a person of flesh and blood. Therefore, the responsibility of a corporation cannot be equated with the responsibility of a natural person. The many hands dilemma points at the problem that the internal specialisation and division of labour, that characterize modern corporations, often leads to the dilution of responsibility. Owing to the growing complexity of the organisational structures of corporations and the increase of responsibility at lower levels, the model of a pyramidal bureaucracy, in which the person at the top is bearing ultimate responsibility for all corporate activities, has become obsolete (Wempe, 1998; 26). Who can be held responsible in specific situations and can a corporation bear moral responsibility as a whole? (Kaptein, 1998; 4)

In a reductionist model of business ethics corporate responsibility is reduced to a sum of individual actions. This means that the corporation itself cannot be held responsible for immoral behaviour or action. An opposite point of view can be found in the autonomy model. In this model the corporation is considered as a moral subject that bears responsibility as a whole. It is argued that within the corporation an organisational structure and culture exist which can be distinguished from the individuals who work within the corporation. The organisational structure concerns the tasks and responsibilities which are formally given to the various functions and the hierarchical relationships among these various functions, while organisational culture embraces the informal structuring dimension within an organisation: the ideas, expectations, habits, ways of thinking, feeling and doing specific to the corporation. *'Culture and structure are linked. Together, they form the corporate practices. The tradition and mission of the company becomes visible in its culture and structure'* (Wempe, 1998; 151).

Because of the identifiable culture and structure that underlie corporate practices, it is possible to judge the actions, conscience and intentions of a corporation in moral terms.

The dirty hands dilemma

While the first dilemma concerning moral communication in a corporate context is about the organisational structure and culture *inside* the corporation, the second dilemma is about the relations with various stakeholders *outside* the corporation. The interests and demands of specific stakeholders on a corporation may contradict the needs and expectations of other stakeholder groups or be at odds with the self-interest and the survival of the corporation. The dirty hands dilemma refers to this contradiction of interests and expectations. In the process of balancing the different interests and expectations it is almost impossible for the corporation to avoid dirty hands. According to Wempe, corporations, entrepreneurs and all managers representing corporations find themselves in an ambiguous situation:

'In order to ensure the continuity of the corporation, they must assure themselves of the efforts and goodwill of the internal and external stakeholders. This requires a maximum effort on behalf of stakeholders' rights and interests. At the same time, the legitimate claims of the individual stakeholders must be honoured as minimally as possible. Only then can the continuity of the whole and, thereby, the rights and interests of the collective stakeholders, be best assured' (Wempe, 1998; 25).

This tension of upholding the belief to each individual stakeholder that their claims will be honoured versus the efforts, in the interest of the corporation, to honour these claims in a minimal way is difficult to resolve. According to Wempe, the idea of a social contract between stakeholders and corporations could be an answer to the dirty hands dilemma.

Dirty hands are unavoidable and must be made, but this can be done in a responsible way if the corporation reflects on its wider social obligations towards stakeholders and is aware of the crucial importance of (societal) trust that binds activities over the course of time.

4.2.4 Corporate stance towards moral communication

The many and dirty hands dilemmas shed light on the constraints and complications corporations have to confront in moral communication. Nevertheless, corporations can follow different strategies to deal with the inevitability of moral communication. Clarkson (1995; 109) distinguishes four different strategies to approach stakeholder issues:

Table 4.1 Different strategies to approach stakeholders

Rating	Posture or Strategy	Performance
1. Reactive	Deny responsibility	Doing less than required
2. Defensive	Admit responsibility but fight it	Doing the least that is required
3. Accommodative	Accept responsibility	Doing all that is required
4. Proactive	Anticipate responsibility	Doing more than is required

(Source: Clarkson 1995; 109)

For our development of ethical bio-technology assessment tools we take as point of departure corporations that are proactive or accommodative towards stakeholder issues.

4.2.5 Moral trustworthiness and corporate integrity

Within the field of business ethics, both Wempe and Kaptein stress the importance of corporate integrity in stakeholder dialogue. Integrity is strongly related to trust. This implies *inter alia* predictability and consistency. According to Kaptein, a corporation's trustworthiness 'is determined by how much the stakeholder's belief that the corporation was, is, or will be faithful to their positive expectations' (Kaptein, 1998; 32). He distinguishes between economic and moral trustworthiness:

'A corporation's economic trustworthiness concerns the extent to which the corporation is able to realize the expectations with regard to, for example, the profit and revenues of the organisation. A corporation's moral trustworthiness concerns the question of whose interests the corporation pursues and how the corporation balances conflicting interests. Moral trustworthiness refers to the correctness, sincerity, intactness, meticulousness, and fairness of a corporation' (Kaptein, 1998; 4).

Moral communication in the context of free market competition is often called in question. The economic interests at stake in the market, one could argue, contradict with the ethical prerequisite of non-strategic communication that is characterized by open moral discussion and sincere involvement of the participants. Although corporations are very much occupied with business and economic opportunities and are confronted with difficult dilemmas, moral communication in a competitive context is possible. The relationships between corporations and stakeholders could be seen as a social contract that regulates moral rights and duties. Firms can be pressured by different stakeholders to take part in debates on moral issues. Organisational integrity is an important key in the communication with stakeholders.

Calling attention to corporate integrity could open the door to a moral dialogue with stakeholders that is characterized by honest reflection on social issues and sincere involvement. The integrity approach of Kaptein & Wempe (2002) distinguishes between different ethical methods that can serve to audit and improve integrity. In the development of our ethical tool we will integrate some elements of this integrity approach.

4.2.6 Objective, method and set-up of the ethical tool

Target group and relation to the other workpackages

As already stated we take as point of departure for our development of ethical bio-technology assessment tools corporations that are proactive or accommodative towards stakeholder issues. In accordance with this starting point our ethical tool aims at enterprises in agriculture and food production that have already an ongoing dialogue with stakeholders or are on the verge of developing such a dialogue.

On the basis of our analysis of the circumstances and constraints that complicate corporate responsibility with respect to moral and ethical issues, we believe that it is not realistic to expect from corporations in the private sector that they initiate debates on social issues. Our view is that the private sector itself will not initiate moral

debates but that enterprises can decide to take part in debates on social issues initiated by the public at large or by government regulation. In other words, we believe that normally moral communication in the private sector is driven by ethical decision-making by governmental regulators (WP1) or by ethical opinion-formation by the general public (WP2). In our view this also implies that our ethical tool is subservient to the goals of the other tools.

One could say that the ethical tool of WP 3 follows on developments that are taking place in the domains of the other work packages. Strengthening and improving the moral communication of corporations with other stakeholders could support the working and effectiveness of the other tools.

Constructive ethics

Many ethical methods take as starting point societal controversies that do ask for acute choices, not uncommonly directly related to life-and-death questions of, for instance, medical choices with regard to (active or passive) euthanasia. However, the paradigmatic moral issues we have in mind for our toolkit are not acute in this sense. Present-day examples of social issues in the food chain are the future of animal production and consumption, deliberate releases of genetically modified plants into the environment for experimental or commercial purposes, animal welfare in particular production practices, and so on. Such issues are examples of unstructured problems. This means that a lot of controversies exist with regard to which values and which facts are relevant. In this context it seems wise to avoid dual approaches that only think in terms of 'right or wrong'. The trap of such dual approaches is that moral debate can easily result in a stalemate that silences further discussion. In the case of unstructured moral problems, there is a need for ethical methods that can help clarify and evaluate the normative and factual sources of the controversies and that can stimulate substantiated opinion formation and decision taking.

We deem an interpretation of ethics as a constructive endeavour a necessary starting point for the evaluation of new technologies in the agricultural and food production. A constructive ethics emphasizes the possibility of a broad range of moral options. It is both pragmatic and participatory. A constructive ethics is pragmatic because it is pluralistic; it pays special attention to appropriate procedures and focuses on concrete contexts (Beekman & Van der Weele, 2004; 15). It recognizes that a lot of approaches can provide fruitful contributions to the problem definition and to the search for possible solutions.

A constructive ethics is participatory both for democratic and for qualitative reasons (Beekman, 2004; 31). Participatory arrangements are desirable since they are considered as unmistakable features of a democracy. The quality of opinions formed and of decisions taken depends, among other things, on the extent to which a plurality of visions, experiences, types of knowledge and perspectives has been recognized. This plurality should, ideally, be reconstructed on the base of active involvement of various actors.

Set-up of the tool

Our tool aims at value clarification and finding responsible ways to deal with the dirty and many hands dilemma. The umbrella list of eight values/concerns (food security, food safety, food quality, human welfare, animal welfare, ecological sustainability, transparency and traceability) will serve as a convenient heading to classify moral and ethical debates on agricultural and food production. It can also entice corporations in the food chain to look at a broad range of moral issues. Special attention will be paid

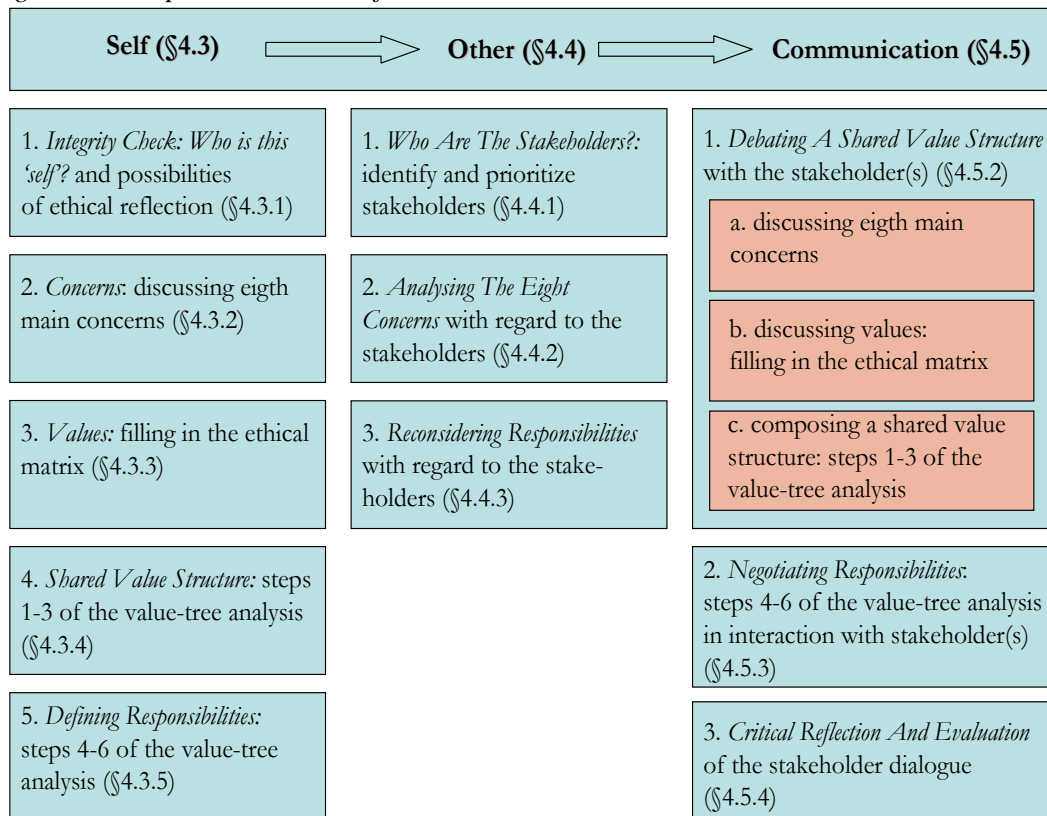
to the corporate integrity that comes into play when companies and firms are engaged in moral communication with other stakeholders.

Our tool is strongly connected with a normative stakeholder approach that can be considered as an essential part of CSR and can be subdivided in three non-linear stages or components:

1. Facilitating self-clarification: who or what is the 'moral self' in a corporate context, which values and concerns are crucial, how can the many hands dilemma be properly handled (section 4.3).
2. Facilitating other-clarification: who are the 'moral others' that demand special efforts of corporations and what are their main values and concerns (section 4.4).
3. Facilitating interaction with other stakeholders: how can the moral position of the corporation be communicated and how can the dirty hands dilemma be properly handled (section 4.5).

The following figure presents an overview of the different steps and methods of our ethical tool:

Figure 4.1 Steps and methods of the ethical tool



4.3 Self-clarification

Self-clarification aims at a better understanding of the moral position of the corporation regarding the major values/concerns in the food chain. The phase of self-clarification consists of five steps:

- Firstly, checking the integrity of a corporation concerning the possibilities of ethical reflection within the firm (4.3.1).
- Secondly, making an inventory of the different values and concerns of the participants (4.3.2).
- Thirdly, deriving ethical values by using an ethical matrix (4.3.3).
- Fourthly, translating the result of the ethical matrix into a value-tree (4.3.4).
- Fifthly, defining responsibilities on the basis of the previous steps (4.3.5)

4.3.1 Integrity check: Who is this 'self'?

Which members of a corporation should participate at the stage of self-clarification depends on the ethical issue that is the object of moral deliberation. A first question that should be asked is, therefore, which members within the corporation have relevant experiences, types of knowledge, opinions, visions, perspectives with regard to the issue at hand. Which members of a corporation will effectively be invited to participate at this first stage depends, among other things, on the integrity of a corporation: can the various workers communicate openly with each other, do they mutually trust each other, are employees considered an essential sub-group of a corporation's 'self' or are they considered a particular stakeholder.

Kaptein (1998; 58 ff.) distinguishes seven ethical qualities that are important for evaluating the ethical content and integrity of corporations. Ethical discussion and reflection within the corporation are very much influenced by organisational qualities such as clarity, supportability, visibility and discussability. These four qualities can serve as a checklist to see if the problem of the many hands dilemma with respect to ethical reflection within the firm has been adequately dealt with.

Table 4.2 Organisational qualities and the many hands dilemma

Organisational qualities	'Many hands dilemma'
Clarity	It is clear what functional responsibilities of employees are
Supportability	The organisation stimulates support for an adequate co-ordination between employees
Visibility	(Consequences of) conduct regarding the realization of functional responsibilities can be observed
Discussability	Dilemmas, problems, and criticisms regarding realization of functional responsibilities can be discussed

(Source: Kaptein, 1998; 117)

4.3.2 Concerns

The method of value clarification is an inductive way of making an inventory of relevant values (Beekman & Van der Weele, 2004; 32-37). It starts with choosing a value indicator. Possible value indicators are goals or purposes, aspirations, attitudes, interests, feelings, beliefs and convictions, activities, worries, problems and obstacles. Relevant values are, to start with, values that people perceive as being threatened. For that reason we suggest to take the concerns that individuals experience as a starting point for ethical deliberation. We expect that this indicator will inform us on those values that appeal to a sense of responsibility. Our umbrella list of major values of the agricultural and food sector - food security, food safety, food quality, human welfare, animal welfare, ecological sustainability, transparency and traceability - will be used as an initial input to guide participants' reflections on their concerns. The concerns within a corporation will be made explicit in two steps:

- Step 1, participants are asked to indicate which actual facts or situations that touch on the eight main concerns mentioned trouble them (e.g. too much manure, a bad income for animal breeders, use of antibiotics, demanding national/European - administrative and other - rules).
- Step 2, participants are asked to give reasons why these actual facts or situations are troubling them (e.g. contamination of the soil results in health risks; only big, industrial farms will at the end remain within the country; threatened animal welfare; rules implying a growing cost factor in the production and distribution process so that competition is even harsher).

The personal inventories of the participants are put together so that a common picture of a corporation's concerns can be composed. This composition of a common picture can already provoke debate: participants can question both the actual and normative content of concerns raised. It is important not to sweep these 'uncertainties' aside too soon, but to pay due attention to them, because they tell a lot about the different perspectives, visions, beliefs and values the various participants hold.

4.3.3 Values

The next phase within the method of value clarification consists of deriving ethical values out of the concerns mentioned. The participants at the exercise of self-clarification are invited to translate the commonly accepted inventory of concerns into ethical values. An ethical matrix can be helpful here by making explicit which actors are (possibly) affected by the actual situations a corporation worries about and which ethical principles come into play with the reasons why a corporation is worried.

We suggest that the participants start with a matrix composed of the principles suggested by Mepham (2000) (welfare, autonomy, justice) and add other ones (e.g. solidarity) in case they feel the need. The division proposed by Beekman & Van der Weele (2004) - self, fellows, community, humans, and animals - is a good starting-point since it invites the participants to enlarge their scope. Participants can, consequently, make further subdivisions. A possible subdivision of 'fellows' could, in case of corporations, consist of suppliers, customers, competitors, stockholders, employees, consumers and nearby residents.

		Welfare	Autonomy	Justice	...
Self					
Fellows	Suppliers				
	Customers				
	Competitors				
	Stockholders				
	Employees				
	Consumers				
	Nearby residents				
Community					
Humans					
Animals					

A specified matrix (build upon Mephram, 2000)

This matrix should be used in an interactive way (see also Beekman & Van der Weele, 2004; 31; Kaiser & Forsberg, 2000). This could either mean that the participants in the process first make the exercise of filling in this matrix on their own before they put the results together. Or they immediately translate the commonly accepted inventory of concerns into values and situate them in the ethical matrix. The aim of the exercise is, anyhow, to complete the matrix as far as possible so that all participants of the group agree with the combined result. This implies that, where dissension arises, a discussion should take place in order to explore whether consensus can be reached or not and, in the latter case, to decide how to integrate divergent views in a way that everybody can agree with.

By converting concerns into values and situating them in the ethical matrix, the matrix itself hints, through the cells that are left open, at 'forgotten' values. In order to make the matrix more complete, one can follow two strategies.

- The first strategy consists of moving to and fro between the matrix and the personal concerns of the participants, until no relevant concerns remain left to convert into the matrix.
- The second strategy consists of turning to the mission statements, ethical codes, codes of conduct, ethical or quality standards that the corporation disposes of as an additional source of inspiration.

4.3.4 Shared value structure

The following phase of our self-clarification tool is to translate the result of the ethical matrix into a value structure. A value structure reflects the relationships between the various values and, hence, their relative importance or weight. Insight into the relative weights of values is needed to reach ethical judgements and to inform later decision processes concerning respective responsibilities and their authors. Within value-tree analysis, the guiding question is: which values/objectives are the more general ones and which values support these general values (Craye et al., 2001; 35). The more general values are, the higher they are situated in the value-tree. One can, further, assign weights to the various values according to their relative importance. Value-tree analysis consists of several steps: (i) identifying the overall objective, (ii) clarifying its

meaning with more specific sub-objectives, (iii) associating these with goals and attributes, (iv) iterating the steps until a clear structure of objectives and characteristics of alternatives have been mapped and (v) then show how each alternative comes out regarding the desired attribute level of all sub-objectives.

This method can be adapted so that it integrates the results of the ethical matrix composed in a previous phase and is suited for the kind of paradigmatic ethical issues we have in mind. We intend to use value tree analysis as an instrument to structure values and, consequently, to define responsibilities. Such an adapted value-tree analysis could consist of the following steps:

1. Identify the first-order value(s)/objective(s).
2. Clarify its or their meaning with more specific second-order values/objectives (until all the values in the ethical matrix have found their place in the value-tree).
3. Debate the different opinions and visions that pop up, until all the values mentioned in the ethical matrix have found their place in the value-tree
4. Associate the various values/objectives with goals and attributes.
5. Imagine actions that have to be performed or initiatives that have to be taken in order to make a realisation of attributes/goals/values possible
6. Define the actors that are well/best situated for the various actions and initiatives.

In this phase of the process it suffices to go through the first three steps (1, 2, and 3) that will result in a clarification of the relationships between and the relative weights of the values made explicit in the ethical matrix. A lot of debate can be needed before a common value-tree comes into existence with which this 'self' can agree and which integrates an agreed on value-pluralism. The decisive test for the quality of the result is whether this substantiated result is compatible with the participants' intuitions.

4.3.5 Defining responsibilities

In the last phase of self-clarification we concentrate on the responsibilities that can be defined on the basis of the previous steps and elaborations. In this phase the focus is on the last three steps of our value-tree analysis: (4) associating the various values/objectives with goals and attributes, (5) imagining actions that have to be performed or initiatives that have to be taken, (6) defining which actions and initiatives can be taken by the corporation.

Especially during steps 4 and 5, Weston's advice to stimulate a wide variety of options via creative processes seems worth following (Beekman & Van der Weele, 2004; 11, 19, 44-46). The Dilemma Decoder, another instrument that is a possible part of an ethics audit, can also be helpful (Kaptein, 1998; 129-30). The aim of a Dilemma Decoder is *inter alia* to make a list of dilemmas faced within a corporation (during Dilemma Gathering Sessions), to analyse which norms and values are in conflict, which risks are related to various options for responding to the dilemmas, which principles and core values merit precedence, what demands this makes on the employees and what organizational provisions are necessary (during Dilemma Analysing Sessions).

Step 6 consists of investigating which actions and initiatives the corporation itself is able (and willing) to take and which other actors could be assigned with responsibilities to realize institutional changes that are deemed useful.

4.4 Other-clarification

Other-clarification aims at moral understanding of other stakeholders. The phase of other-clarification consists of three steps:

- Firstly, the company must identify and prioritise the different stakeholders (4.4.1).
- Secondly, the company must analyse the eight concerns with regard to the prioritised stakeholders (4.4.2).
- Thirdly, the company must reconsider the responsibilities with regard to the stakeholders defined in step 6 of the value-tree analysis (4.4.3, see also 4.3.5).

4.4.1 Who are the stakeholders?

Typology of stakeholders

In order to effectively start a dialogue with those who have an interest in the functioning or are affected by the functioning of a corporation, a firm has to know who its stakeholders are, the nature and basis of the stakes they hold, and whether or not they must be given priority. Stakeholder theories offer a maddening variety of signals on how questions of stakeholder identification might be answered. According to these theories, stakeholders can be identified as primary or secondary stakeholders; as owners and non-owners of the firm; as owners of capital or owners of less tangible assets; as right-holders, contractors, or moral claimants; as resource providers to or dependents of the firm; and so on.

What is needed is a method of stakeholder identification that can reliably separate stakeholders from non-stakeholders and that can also give insight in the position and importance of the stakeholders. Such a method is given by the theory of stakeholder identification and salience of Mitchell *et al.* (1997). They propose that stakeholders can be identified by the possession of the following attributes: (1.) the stakeholder's power to influence the firm, (2.) the legitimacy of the stakeholder's relationship with the firm, and (3.) the urgency of the stakeholder's claim on the firm. A corporation can identify different classes of stakeholders by asking questions along these dimensions of power, legitimacy and urgency:

1. What is the power of the stakeholder? Is the stakeholder able to impose its will in the relationship with the company?
2. Does the claim of the stakeholder have legitimacy? Are the actions of a stakeholder desirable, proper, or appropriate *vis-à-vis* the norms, values, and beliefs of the acting stakeholder, the corporation, or society?
3. How urgent is the claim of the stakeholder? Does the claim require immediate attention? How critical or important is the claim?

On the basis of the answers on these questions 7 classes of stakeholders can be distinguished to which the firm should pay attention (table 4.3). The positions of these different classes of stakeholders along the dimensions of power, legitimacy and urgency are illustrated in figure 4.2.

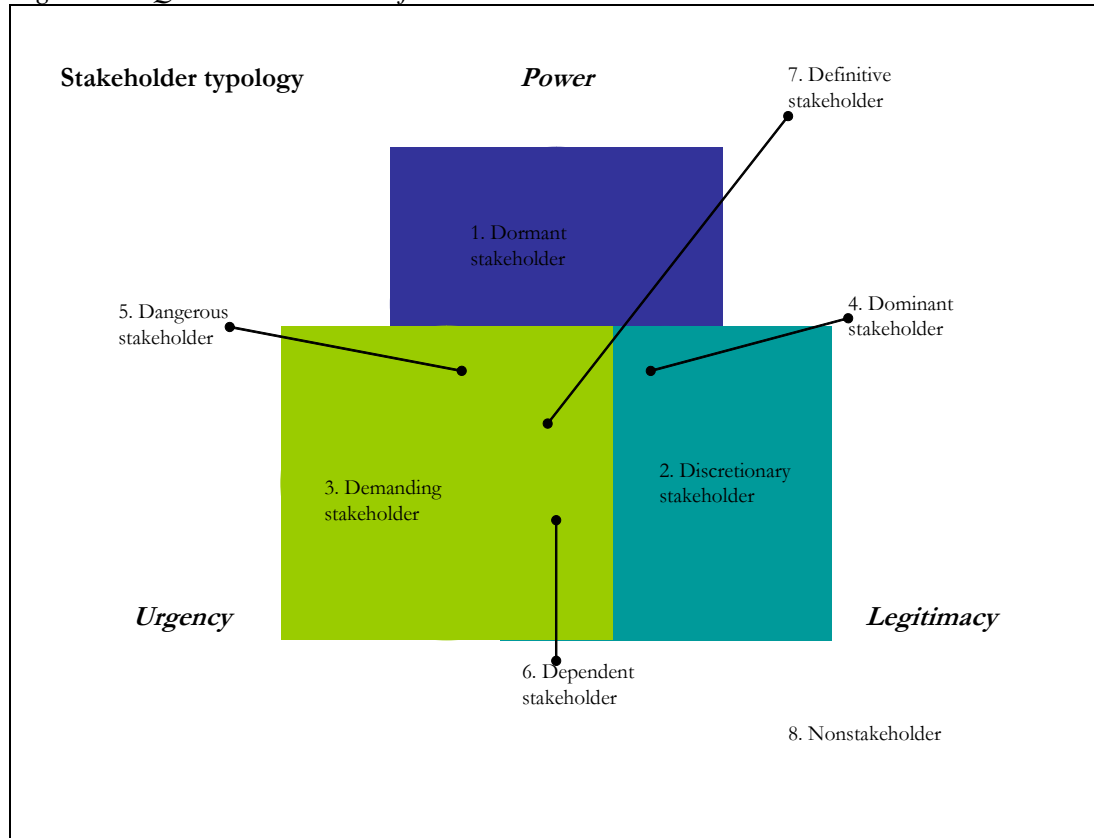
Table 4.3 Type of stakeholders and their characteristics

Type of stakeholder	Characteristics
1. Dormant stakeholder	Does not exercise its power since claim lacks legitimacy and urgency. Little interaction with the company. Has the potential of acquiring legitimacy or urgency (e.g. person or organization that commands the attention of the news media)
2. Discretionary stakeholder	Has a legitimate but not an urgent claim. Is unable to influence the company since the stakeholder lacks power. Is most likely to be the recipient of corporate philanthropy. No pressure on management to engage in an active relationship with this stakeholder (e.g. non-profit and volunteer organizations)
3. Demanding stakeholder	Has an urgent claim that lacks legitimacy. Stakeholder power is absent. Can be bothersome, but does not demand much management attention – if any at all.
4. Dominant stakeholder	Is powerful and legitimate, but has no urgent claims. Forms the 'dominant coalition' in the company. Expect and receive much management attention (e.g. employees, labour union representative in the company's board of directors).
5. Dependent stakeholder	Lacks power, but has a legitimate and urgent claim. Depends on others, like dominant stakeholders, having the power necessary to exercise the stakeholder's will (e.g. the natural environment itself).
6. Dangerous stakeholder	Has power and an urgent claim, but with the claim lacking legitimacy. Possible coercive and violent. Should be identified by management, but the claim should not necessarily be acknowledged (e.g. employees with unlawful claims leading a wildcat strike, interest groups with purposely biased reports of a company's environmental performance).
7. Definitive stakeholder	Have power and a claim that is both legitimate and urgent. Also member of the 'dominant coalition' (e.g. stockholders seeing their stock values plummet).

(Source: Mitchell et al., 1997)

The above-presented typology of stakeholder is very relevant for our purpose of facilitating moral communication because it avoids naïveté. The 'score' on the legitimacy dimension is highly important for the moral communication between corporations and stakeholders, but this communication will always be influenced by the attributes of power and urgency of stakeholders. All three dimensions are relevant to prioritise the different stakeholders and to decide with which stakeholders the company should start a dialogue about moral issues. Different sets of stakeholders require different approaches of the company to maintain adequate relations with the stakeholders. The typology of stakeholders can help companies to understand its stakeholder relationships and to engage in effective stakeholder dialogue.

Figure 4.2 *Qualitative classes of stakeholders*



(Source: Mitchell et al., 1997; 872)

Stakeholder salience map

To gather a more fine-grained insight into the concerns, values and expectations of the stakeholders, the 'Stakeholder Salience Map' (CRS Academy, 2003) can be useful. This map can be used to structure the information about the different stakeholders (see table 4.3) and to prioritise the different stakeholders more thoroughly.

Information on stakeholders can be gathered in several ways. Some members of a corporation experience the expectations and frustrations of particular stakeholders (stockholders, suppliers, and customers) via direct contacts with them. Information can be gathered via desk research or via more direct ways of consultation: questionnaires, individual interviews or focus groups meetings with stakeholder groups (Pearce, 1996 cited in Kaptein, 1998; 124).

In the CSR Academy Stakeholder Salience Map the three stakeholder attributes power, legitimacy, and urgency are rated (ranging from 'non-existent' to '+++'' indicating a high degree of attribute presence). This exercise is done both for the current situation and for possible future situations (likely scenario and worst case scenario). Consequently, the Stakeholder Salience Map is also future oriented.

Stakeholder identification and diagnosis is highly dynamic and must be an ongoing effort. Stakeholders and their claims may evolve over time. An illegitimate claim may evolve into a legitimate claim quickly. Stakeholder claims that are not that urgent at the moment may become urgent later on. People or organizations that are currently not identified as stakeholders may well be serious stakeholders in the near

future. Therefore, corporations should reconsider, and if necessary, revise their taxations of stakeholder salience on a continuing basis.

The result of filling in the stakeholder salience map for all the stakeholders is a priority list. This priority list of stakeholders, grounded on a more fine-grained insight into the stakeholder relationships, is an important basis for the second step of other-clarification: analysing the eight concerns with regard to the prioritised stakeholders.

4.4.2 Analysing the eight concerns

The second step in the phase of other-clarification is to gain more insight into the score on the legitimacy dimensions of the prioritised stakeholders. For this analysis we use our umbrella list of eight values/concerns (section 4.2.2). Each value/concern will be connected with a 'stakeholder question'.

Table 4.4 Values/concerns and prioritised stakeholders

Value/concern	Main question
1. Food security	To what extent does the stakeholder make a positive contribution to a sufficient amount of food in the world and a fairly distribution?
2. Food safety	To what extent does the stakeholder make a positive contribution to the trustworthiness that our food is not dangerous for our health?
3. Food quality	To what extent does the stakeholder make a positive contribution to the authenticity and the nutritiousness of the food and to a healthier lifestyle?
4. Human welfare	To what extent does the stakeholder make a positive contribution to labour relations and a fair social distribution of resources threatened with (further) deterioration?
5. Animal welfare	To what extent does the stakeholder treat animals well and with respect?
6. Ecological sustainability	To what extent does the stakeholder take care for the natural environment and does the stakeholder not compromise the living conditions of future generations?
7. Transparency	To what extent is the stakeholder transparent about its methods of production?
8. Traceability	To what extent does the stakeholder make a positive contribution to the traceability in the food chain?

The second step within the phase of other-clarification should be focused on answering these questions for each of the prioritised stakeholders. The company has already done this in the phase of self-clarification with regard to the concerns of the company itself. In this phase of other-clarification the company should do this exercise for the priority list of stakeholders.

4.4.3 Reconsidering responsibilities

The final step in the phase of other-clarification is to reconsider the actions and initiatives that can best be taken by the company itself and the stakeholders that are well/best situated to take up other actions and initiatives (see the last step in the phase of self-clarification - defining responsibilities, section 4.3.5).

The participants should now reconsider and define which of them are well/best situated for the various actions and initiatives and which actors/stakeholders are well/best situated for the remaining actions and initiatives. The methods proposed for the phases of self-clarification and other-clarification can help companies to understand their own position with respect to a certain ethical issue and the stakeholder relationships that are relevant here. This understanding can result in a sounder basis to interact with stakeholders and to engage in moral communication. In the next section we will focus on ethical methods and instruments that can support deliberative interaction with stakeholders.

4.5 Deliberative interaction

4.5.1 Moral communication in the food chain

Communication about ethical aspects is hard to establish in a highly competitive market but is possible in:

- Hierarchic corporations that are willing to discuss moral issues and that have adequately dealt with the many hands dilemma to arrange and enable ethical reflection within the firm.
- Reciprocal (economic) networks where relationships are based on mutual expectations and norms are suited for moral communication.

As stated in the introduction we take as point of departure for our development of ethical assessment tools corporations that are proactive or accommodative towards stakeholder issues. The toolkit is first of all intended for individual firms that have already an ongoing dialogue with stakeholders or are on the verge of developing such a dialogue. However, this does not exclude that a reciprocal network of firms in the food chain or an overarching organisation that coordinates such a network could also use our tool.

Our supportive methods for deliberative interaction with stakeholders are threefold:

- Firstly, searching for a shared value structure (4.5.2).
- Secondly, negotiating responsibilities with stakeholders (4.5.3).
- Thirdly, a critical reflection on the integrity of the corporation and the political and cultural constraints with respect to moral communication (4.5.4).

4.5.2 Debating a shared value structure

Stakeholder dialogue can start with different stakeholders together or with stakeholders individually. When the company has a clear view of the stakeholders that should participate in the stakeholder dialogue, an interactive setting has to be arranged, for instance a workshop that is guided by a facilitator. Starting point of the

dialogue are the answers on the eight main concerns (see table 4.4 in section 4.4.2). These answers will be discussed and reconsidered with the stakeholder(s).

The second step is filling in the ethical matrix in interaction with the stakeholder. For each relevant concern the shared and probably the disputed values will be derived. This second step in the phase of deliberative interaction builds upon the second step in the previous phase of other-clarification and consists of deriving ethical values out of the concerns mentioned. The ethical matrix developed by Mepham (2000, see section 4.3.3) will once again be used as a starting point in this interactive setting. The participants are invited to translate the commonly accepted inventory of concerns into ethical values in interaction with the prioritised stakeholders.

The third step in the stakeholder dialogue is to compose a shared value structure. The corporation has already constructed and debated a value tree in the phase of self-clarification. Now it will be executed in interaction with the stakeholder(s). For this step we will once again use our adapted value-tree analysis that we described in section 4.3.4 and that consists of the following steps:

1. Identify the first-order value(s)/objective(s).
2. Clarify its or their meaning with more specific second-order values/objectives (until all the values in the ethical matrix have found their place in the value-tree).
3. Debate the different opinions and visions that pop up, until all the values mentioned in the ethical matrix have found their place in the value-tree
4. Associate the various values/objectives with goals and attributes.
5. Imagine actions that have to be performed or initiatives that have to be taken in order to make a realisation of attributes/goals/values possible
6. Define the actors that are well/best situated for the various actions and initiatives.

In the phase of composing a shared value structure it suffices to go through the first three steps of the value-tree analysis, because it is during these steps that the relationships between and the relative weights of the values made explicit in the ethical matrix are clarified. The next phase of 'negotiating responsibilities' is done by going through the second half of the value-tree analysis.

A lot of debate can be needed before a value-tree comes into existence on which the different parties can agree. It is possible that agreement on certain values and goals is unattainable and that at the most a consensus on the extent and content of disagreement can be achieved. This is in line with our starting principle of value pluralism.

4.5.3 Negotiating responsibilities

In this phase we concentrate on the last three steps of our value-tree analysis: (4) associating the various values/objectives with goals and attributes, (5) imagining actions that have to be performed or initiatives that have to be taken, (6) defining which actions and initiatives can be taken by the corporation.

As in the final step in the phase of self-clarification (defining responsibilities, see section 4.3.5), Weston's advice to stimulate a wide variety of options via creative processes seems worth following (especially during steps 4 and 5). The Dilemma Decoder (see section 4.3.5) can be used once again to help making various options and their relation with conflicting values explicit.

4.5.4 Critical reflection and evaluation

An important final step in the process of stakeholder dialogue and moral communication is critical reflection. This reflection can be done together with stakeholders in an interactive setting but it is also possible for corporations to critically contemplate on the process of moral communication solely, thus without the presence of outsiders. The reflection on the process of stakeholder dialogue and moral communication should both concern the integrity of the corporation in dealing with the dirty hands dilemma and the political and cultural and conditions that influence corporate social responsibility (CSR).

For reflecting on the integrity of the corporation concerning a responsible and fair treatment of stakeholders, we suggest to use the seven qualities of Kaptein (1998). These qualities can serve as a convenient method to review the process of the stakeholder dialogue and the quality of the outcome.

Table 4.2 Organisational qualities and the dirty hands dilemma

Organisational qualities	'Dirty hands dilemma'
a) Clarity	It is clear what stakeholders expect of employees
b) Consistency	Referents make enough effort to realize the expectations of stakeholders
c) Sanctionability	If the expectations of stakeholders are (not) realized deliberately, staff is sanctioned
d) Achievability	The expectations raised to stakeholders can be realized
e) Supportability	The organisation stimulates support for an adequate co-ordination of the interests of stakeholders
f) Visibility	(Consequences of) conduct regarding the realization of stakeholders' expectations can be observed
g) Discussability	Dilemmas, problems, and criticisms regarding realization of stakeholders' expectations can be discussed

(Source: Kaptein, 1998; 117)

In the introduction we stated that there is no absolute standard for CSR. Each country has its own political and legal institutions that define the public role of the (welfare) state and the legal requirements that have to be met in the private sector. What can be seen as an act of CSR in one country can be considered merely an act of legal obedience in another country. One should also take notice of the culture of entrepreneurship in a country. Therefore, the reflection on corporate integrity will be complemented with a list of topics and questions that will be helpful to discuss the implications of different social, cultural, and political contexts and the different boundaries between private sector, governmental regulators, and the general public. Such an evaluation could raise more awareness among the participants of the problems and challenges that have to be encountered in moral communication and the instigation of institutional changes.

4.6 Conclusion

In this chapter we have developed a tool to support corporations in the food chain that are willing to take part (or are already taking part) in a moral dialogue with stakeholders concerning bio-technology. Our ethical tool is subservient to the goals of the other tools. Our tool is strongly connected with a normative stakeholder approach that can be considered as an essential part of CSR. Strengthening and improving the moral communication of corporations with other stakeholders can support the working and effectiveness of the other tools. Our ethical tool aims at self-clarification, other-clarification and facilitating interaction with other stakeholders. It can help corporations to ascertain their moral position and responsibilities with respect to new (bio-)technologies. Our ethical tool can be subdivided in three non-linear stages or components:

1. Facilitating self-clarification: self-clarification aims at a better understanding of the moral position of the corporation regarding the major values/concerns in the food chain. This phase consists of five steps:
 - Firstly, checking the integrity of a corporation concerning the possibilities of ethical reflection within the firm.
 - Secondly, making an inventory of the different values and concerns of the participants.
 - Thirdly, deriving ethical values by using an ethical matrix.
 - Fourthly, translating the result of the ethical matrix into a value-tree.
 - Fifthly, defining responsibilities on the basis of the previous steps.
2. Facilitating other-clarification: other-clarification aims at moral understanding of other stakeholders. The phase consists of three steps:
 - Firstly, the company must identify and prioritise the different stakeholders.
 - Secondly, the company must analyse the eight concerns with regard to the prioritised stakeholders.
 - Thirdly, the company must reconsider the responsibilities with regard to the stakeholders defined in step 6 of the value-tree analysis.
3. Facilitating interaction with other stakeholders. These methods support deliberative interaction with stakeholders. This phase consists of three steps:
 - Firstly, searching for a shared value structure.
 - Secondly, negotiating responsibilities with stakeholders.
 - Thirdly, a critical reflection on the integrity of the corporation and the political and cultural constraints with respect to moral communication.

For an overview of the different steps and methods of our ethical tool, we refer to figure 4.1. In the last task of our Workpackage - task D: application - we will create a practically oriented version of our tool that will be discussed with experts and possible users in different countries. On the basis of these discussions we will make alterations in our tool and write the final report.

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