



**Convention on
Biological Diversity**

Distr.
GENERAL

UNEP/CBD/BS/COP-MOP/5/INF/10
17 September 2010

ORIGINAL: ENGLISH

CONFERENCE OF THE PARTIES SERVING AS THE
MEETING OF THE PARTIES TO THE CARTAGENA
PROTOCOL ON BIOSAFETY

Fifth meeting

Nagoya, Japan, 11-15 October 2010

Item 6 of the provisional agenda*

**SUMMARY REPORT ON THE SURVEY ON THE APPLICATION OF AND EXPERIENCE IN
THE USE OF SOCIO-ECONOMIC CONSIDERATIONS IN DECISION-MAKING ON LIVING
MODIFIED ORGANISMS**

Note by the Executive Secretary

1. Article 26 of the Cartagena Protocol on Biosafety allows Parties, in reaching a decision on import under the Protocol or under their domestic measures implementing the Protocol, to take into account, “consistent with their international obligations, socio-economic considerations arising from the impact of living modified organisms on the conservation and sustainable use of biological diversity, especially with regard to the value of biological diversity to indigenous and local communities.”
2. In 2007, the United Nations Environment Programme’s Division of Global Environment Facility Coordination received funding from the Department for International Development of the United Kingdom to undertake a scoping exercise on socio-economic considerations in biosafety decision-making. The work included a survey to gather information on countries’ experience with socio-economic considerations which was to be undertaken in cooperation with the Secretariat of the Convention on Biological Diversity.
3. At the request of the United Nations Environment Programme, the Executive Secretary is circulating herewith, for the information of participants in the fifth meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety, a summary report containing the findings of the survey.

* UNEP/CBD/BS/COP-MOP/5/1.

SUMMARY OF THE FINDINGS FROM THE SURVEY ON THE APPLICATION OF AND EXPERIENCE IN THE USE OF SOCIO-ECONOMIC CONSIDERATIONS IN DECISION-MAKING ON LIVING MODIFIED ORGANISMS

Paul J. Thomassin, McGill University*

I. INTRODUCTION

1. Since 2001, the United Nations Environment Programme's Division of Global Environment Facility Coordination (UNEP DGEF) has been managing a global project on the development of national biosafety frameworks. In 2007, UNEP DGEF received funding from the Department for International Development of the United Kingdom to undertake a scoping exercise on socio-economic considerations in biosafety decision-making. The exercise was to include a survey to gather information on countries' experience with socio-economic considerations and the preparation of a draft outline for a toolkit module on socio-economic considerations.

2. A consultant was hired to prepare an initial draft of the survey and to organize an experts' workshop where the draft questionnaire would be discussed and further developed. A workshop of a group of experts on socio-economic considerations from both developed and developing countries was held in Mexico City in July 2008. The experts reviewed and substantially revised the draft questionnaire. A second consultant (the report author) with expertise in survey methods was engaged to finalise the survey, to launch the survey online and to prepare a report analysing the responses.

3. The survey was undertaken from October 14, 2009 to November 13, 2009 in English, French and Spanish. A total of 578 completed surveys were received from individuals and organizations. See annex II for the full text of the survey. A page in the Biosafety Clearing-House was also created to provide information on the survey.[‡]

4. The survey had 46 questions and was divided into four parts. The first part asked general questions about the organization and type of work of the respondents and the reference country they would use as the basis for responding to the survey. Respondents identified 154 different countries as points of reference. The second part of the survey asked respondents about experiences with decision-making regarding living modified organisms (LMOs) and the inclusion of socio-economic considerations in such decisions. Respondents whose reference country did not have a decision-making system in place for LMOs or who did not know if their country had such a system were directed to the third part of the survey in which they were asked their opinions on a number of questions. All respondents were asked to answer questions in the final section of the survey which addressed various aspects, including capacity-building, challenges to including socio-economic considerations in decision-making and the need for a methodological guide (toolkit).

5. Different methods were used to analyse the responses to different types of questions. Several of the questions asked respondents to select issues that applied to the situation of their reference country from a

* The author would like to thank the United Nations Environment Programme Division of Global Environment Facility Coordination (UNEP DGEF) and the UK Department for International Development for the financial support for this project. The author would also like to thank the Secretariat of the Convention on Biological Diversity for its assistance in this study including feedback on various versions of the survey, access to the preliminary survey from the expert committee, the administration of the e-mail contacts for the survey, and the responses to questions from respondents. I would also like to thank CIRANO for their support and access to their server and their technical expertise. The author would also like to thank FQRSC for their support. The author would like to thank David Duthie, Kathryn Garforth, Charles Gbedemah, and Erie Tamale for their assistance in providing feedback on the survey, the execution of the survey and administrative support.

The opinions expressed in this summary report are those of the author and do not represent the policies or views of the organizations that supported this research. The author is responsible for any errors or omissions.

[‡] <http://bch.cbd.int/onlineconferences/socioeconomics.shtml>.

given list (see question 10, for example.) In analysing these questions, the issues were ordered according to the number of times each issue was chosen.

6. Another type of question asked respondents to identify the level of importance of an issue (see questions 15 and 44, for example.) Two methods were used to analyse the results to this type of question. The first method (“the ranking system”) counted the number of times an issue was identified as being “Very important” and used the counts to rank the issues. The second method used a weighted scoring system. A response of “Not at all important” was given a weight of 1, “Not very important” a weight of 2, “Neutral” a weight of 3, “Somewhat important” a weight of 4, and “Very important” a weight of 5. The weighted values were then summed to grade the issues from most important to least important. This final method was identified as the “scoring system.” These two methods of analysis were also applied where issues were ranked in terms of priority (see question 38.).

II. SURVEY ANALYSIS AND RESULTS

(a) Socio-economic considerations and decision-making on LMOs

7. The survey asked respondents their opinion on the importance of including socio-economic considerations in decision-making on LMOs in their reference country. Eighty-five percent of the respondents indicated that socio-economic considerations were either “Very important” or “Somewhat important”, with 80 percent of these respondents identifying them as “Very important” (see figure 1 in annex I.) This would suggest that socio-economic considerations are considered important by the individuals and organizations that responded.

(b) Mechanisms for integrating socioeconomic considerations into decision-making processes

8. Respondents were asked to indicate if their reference country had a decision-making system for living modified organisms. A large number of respondents (83%) stated that their reference country had such a system in place or under development (see figure 2 in annex I.) Of the respondents whose country had such a system, a majority (66%) stated that the system could take socio-economic considerations into account (see figure 3 in annex I.)

9. The survey asked respondents whose reference country had a decision-making system to identify how socio-economic considerations are currently incorporated into the decision-making process. The largest number of responses (56%) identified that socio-economic considerations are covered through a general reference in the biosafety regulatory framework or other relevant framework. The next most common means of incorporating socio-economic considerations into the decision-making process, identified by 25% of respondents, was treating socio-economic considerations on an ad hoc or case-by-case basis without there being an explicit step for their inclusion in the decision-making system. The mechanism that was identified by the fewest number of respondents (19%) was one where the socio-economic considerations are covered specifically through the identification of particular elements for assessment during specific steps in the process.

10. A large number of respondents (46%) who identified their reference country as having a decision-making system for LMOs also identified their reference country as taking socio-economic considerations into account in other approval processes besides that for LMOs. Twenty-six percent of these respondents stated that socio-economic considerations were not taken into account when decisions on LMOs were made but were included in other approval processes. This would suggest that there is scope to expand the use of socio-economic criteria for decisions regarding living modified organisms.

11. All respondents were asked to identify the best way to incorporate socio-economic considerations into the decision-making process (question 45). This was an open-ended question and responses were coded

into one of nine categories. The largest group of responses (41%) supported having a specific, identifiable mechanism, such as a legislative framework or methodological protocol, for including socio-economic considerations in the decision-making process. The next largest group of responses (26%) supported incorporating socio-economic considerations as part of the risk assessment process in a general framework. In this group, it was often suggested that socio-economic considerations should be incorporated throughout the risk assessment process. The next most frequently identified mechanism was a participatory process whereby stakeholders across a broad spectrum would be asked to participate and provide comments (15%). A few respondents (5%) supported an ad hoc or case-by-case approach to incorporating socio-economic considerations into decision-making while at least five percent of the responses clearly remarked that socio-economic considerations should not be included in decision-making.

12. Respondents were also asked the extent to which they agreed with the following statements:

- Specific items or elements should be included in each socio-economic assessment; and
- Socio-economic assessments should be designed around the LMO being considered and thus would have different elements included in them.

The responses were split with the second approach receiving a slightly higher level of agreement than the first (see figure 4 in annex I, especially statements 5 and 6.)

(c) Socio-economic considerations and decisions concerning different types of LMOs

13. Respondents whose reference countries had taken decisions on LMOs that incorporated socio-economic considerations were asked whether these decisions concerned the import of LMOs, domestically developed LMOs or other situations. Socio-economic considerations were taken into account most often in decisions concerning the import of living modified organisms (52%). This was followed by domestically developed living modified organisms (38%) (see figure 5 in annex I.) A substantial number (43%) of the respondents identified their reference country as incorporating socio-economic considerations in at least two of the three situations.

14. Living modified seeds were the organism that was most often identified as being the subject of decisions where socio-economic considerations were taken into account (31%). This was followed by living modified plant products (27%), such as grains and fruits, and living modified micro-organisms (15%) (see figure 6 in annex I.) Several of the reference countries took socio-economic considerations into account in decisions on a number of different types of organisms. Twenty-five percent of the respondents identified their reference country as having taken socio-economic considerations into account in decisions concerning two different categories of organisms. A substantial number of respondents (17%) had reference countries that took socio-economic considerations into account for three different types of organisms, while an additional 17% identified socio-economic considerations as having been taken into account across four different categories of organisms. Fifteen percent of the respondents identified five categories of organisms as being subject to socio-economic considerations.

15. Respondents whose reference countries had taken socio-economic considerations into account in decisions on LMOs were asked about the intended uses of the LMOs, i.e. whether the decisions concerned LMOs intended for direct use as food or feed, or for processing (including placing on the market), LMOs for intentional introduction into the environment (including field trials) or LMOs for contained use (question 14). An equal proportion of respondents (38%) identified that the decisions were for food, feed or processing or for intentional introduction into the environment (see figure 7 in annex I.)

16. Reference countries that had taken socio-economic considerations into account in their decision-making tended to apply these considerations to decisions on LMOs for a variety of uses. For example, 29% of the respondents identified their reference country as applying socio-economic considerations across at

least two of the different uses above. This increased to 37% of respondents whose reference countries included socio-economic considerations in decisions regarding three uses.

(d) Key socio-economic issues for consideration in decisions concerning LMOs

17. Respondents whose reference countries' decision-making systems allowed for socio-economic considerations were asked to identify the socio-economic issues that could be taken into account in their countries' decisions on LMOs (question 10) and to identify the level of importance of certain socio-economic issues (question 15). For both questions, respondents were provided a list of 20 issues. The top five issues from both questions were similar with slight variations in their placement no matter which method was used to analyse the results. These five issues were: food security, health-related impacts, coexistence of living modified organisms, impacts on market access, and compliance with biosafety measures (Table 1). More variation occurred with the importance of the next five issues: two issues were common to all three methods of analysis: impacts on the conservation and sustainable use of biodiversity and economic impacts of changes in pest prevalence. Other issues common in two of the three methods of analysis included: macroeconomic impacts, farmers' rights, and intellectual property rights (IPRs). Three other issues were identified by only one of the methods: impacts on consumer choice, economic impacts of changes in the use of pesticides and herbicides, and indigenous and local communities. There seems to be a consensus on the top five socio-economic issues of importance from respondents whose reference countries had a decision-making system concerning living modified organisms.

Table 1: Socio-economic issues that can be taken into account in reference countries' decision-making compared with ratings of the importance of socio-economic issues included in decision-making			
#	Socio-economic issues that can be taken into account in reference countries' decision-making systems for LMOs (Q10)	Importance of socio-economic issues considered in LMO-decision-making (Q15)	
		Method I: ranking system	Method II: scoring system
1	Food security	Food security	Health-related impacts
2	Impacts on market access	Health-related impacts	Coexistence of LMOs
3	Health-related impacts	Coexistence of LMOs	Food security
4	Compliance with biosafety measures	Impacts on market access	Impact on market access
5	Coexistence of LMOs	Compliance with biosafety measures	Compliance with biosafety measures
6	Impacts on biodiversity	Impacts on biodiversity	Macroeconomic impacts
7	Farmers' rights	Economic impacts of changes in pest prevalence	Economic impacts of changes in pest prevalence
8	Economic impacts of changes in pest prevalence	Macroeconomic impacts	Impacts on biodiversity
9	IPRs	Farmers' rights	Impacts on consumer choice
10	Indigenous and local communities	IPRs	Use of pesticides and herbicides

18. A comparison was also made between two groups of respondents: (i) respondents from reference countries that had a decision-making system for living modified organisms and that had taken socio-economic considerations into account and (ii) respondents whose reference countries did not have a decision-making system for LMOs or who did not know if their reference countries had such a system. Each group of respondents assessed the importance of 20 socio-economic issues in terms of their consideration in decision-making on living modified organisms.

19. There was a fair amount of similarity in the ten socio-economic issues identified by the two groups as being most important, regardless of the method used to analyse the results. Eight of the top ten socio-economic issues were the same across both groups and both methods of analysis (Table 2). More specifically, two of the top three issues – food security and health-related issues – were common to both groups across both the ranking and scoring systems. Also, compliance with biosafety measures can be found in the top five issues for the two groups. This would suggest that there is some consensus around the important socio-economic issues to be included in decision-making on LMOs.

20. There were differences in the assessed importance of the socio-economic issues that placed seventh through tenth (Table 2). For example, respondents whose reference countries had a decision-making system for LMOs in place or under development identified farmers’ rights, intellectual property rights and impacts on consumer choice as being important issues when decisions concerning LMOs were made. These were not identified as important issues by respondents whose reference country did not have a decision-making system for LMOs. Similarly, this latter group included indigenous and local communities as an important socio-economic issue and this was not included in the top ten by respondents whose reference country had a decision making system for living modified organisms that included socio-economic considerations.

Table 2: Comparison of most important socio-economic issues: respondents whose countries have an LMO decision-making system that includes socio-economic considerations versus respondents whose countries do not have such a system or who do not know whether their countries have such a system

#	With a system for decision-making (Q15)		Without a system for decision-making (Q31)	
	Method I: ranking system	Method II: scoring system	Method I: ranking system	Method II: scoring system
1	Food security	Health-related impacts	Health-related impacts	Compliance with biosafety measures
2	Health-related impacts	Coexistence of LMOs	Compliance with biosafety measures	Health-related impacts
3	Coexistence of LMOs	Food security	Food security	Food security
4	Impacts on market access	Impacts on market access	Coexistence of LMOs	Macroeconomic impacts
5	Compliance with biosafety measures	Compliance with biosafety measures	Impacts on biodiversity	Impacts on market access
6	Impacts on biodiversity	Macroeconomic impacts	Indigenous communities	Coexistence of LMOs
7	Economic impacts of changes in pest prevalence	Economic impacts of changes in pest prevalence	Macroeconomic impacts	Impacts on biodiversity
8	Macroeconomic impacts	Impacts on biodiversity	Impacts on market access	Microeconomic impacts
9	Farmers’ rights	Impacts on consumer choice	Use of pesticides and herbicides	Economic impact of changes in pest prevalence
10	IPRs	Use of pesticides and herbicides	Economic impacts of changes in pest prevalence	Indigenous and local communities

21. The five socio-economic issues that were ranked 16 through 20 were the same for both groups of respondents (Table 3). Gender issues and rural-urban migration had the lowest importance across respondent groups and methods of analysis. Cultural aspects were identified as the sixteenth most important socio-economic issues across both groups and methods of analysis.

Table 3: Bottom five socio-economic issues: respondents whose countries have an LMO decision-making system versus respondents whose countries do not have such a system or who do not know whether their countries have such a system				
#	With a system for decision-making (Q15)		Without a system for decision-making (Q31)	
	Method I: ranking system	Method II: scoring system	Method I: ranking system	Method II: scoring system
16	Cultural aspects	Cultural aspects	Cultural aspects	Cultural aspects
17	Labour and employment	Labour and employment	Land tenure	Land tenure
18	Land tenure	Land tenure	Labour and employment	Labour and employment
19	Gender impacts	Gender impacts	Gender impacts	Rural-urban migration
20	Rural-urban migration	Rural-urban migration	Rural-urban migration	Gender impacts

(e) Assessing socio-economic impacts and evaluating the assessments

22. The survey included a number of questions that were designed to identify which entities are or could be responsible for assessing possible socio-economic impacts of an organism and for evaluating the assessments. Respondents whose reference countries had a decision-making process for LMOs were divided into two groups. The first group comprised those whose reference countries assigned the responsibility for the assessment of socio-economic impacts and the evaluation of the assessment to two separate entities. This group constituted the majority (79%) of respondents. Within this group, the largest number of the respondents (29%) indicated that the National Competent Authority was the entity responsible for assessing socio-economic impacts, 19% said a multi-sectoral committee was responsible and 16% said this task was carried out by a government committee consisting of several government departments (see figure 8 in annex I.) With regard to evaluation of the assessment, 32% of respondents indicated that the National Competent Authority was the entity responsible for evaluating the assessment of socio-economic considerations. Others said a multi-sectoral committee (22%) or a government committee consisting of several government departments (17%) was responsible for this task (see figure 9 in annex I.)

23. The second group comprised respondents from reference countries where the entity that carried out the assessment was also the entity that evaluated it. In this group, the entity most often charged with these duties was the National Competent Authority (28%) followed by a multi-sectoral committee (26%), and a government committee consisting of several government departments (15%) (see figure 10 in annex I.)

24. Respondents whose reference countries did not have a decision-making system for LMOs were asked their opinion on which entity should be responsible for assessing socio-economic impacts and which entity should be responsible for evaluating the assessment. The results for the two questions were very similar. An equal proportion of respondents (32%) chose a multi-sectoral committee or the National Competent Authority as the entity that should be responsible for carrying out the assessment. The next most frequently selected entity for undertaking the assessment was a government committee consisting of several government departments (13%) followed by academic institutions (12%).

25. With regard to entities that should be responsible for evaluating the assessment, 23% of respondents were of the view that this task should be carried out by a multi-sectoral committee, 22% chose the National Competent Authority while 15% selected academic institutions.

26. Respondents were asked to identify the methods that were used or should be used to assess socio-economic considerations (questions 17 and 32). They were able to check as many methods as applied. Respondents whose reference country had a decision-making system for living modified organisms selected

the following methods by which the assessment was conducted: environmental/sustainability impact assessment (27%), cost-benefit analysis (20%), economic risk assessment (18%), participatory methods (15%), and cost effectiveness (14%). Respondents whose reference country did not have a decision-making system for living modified organisms identified the following methods: environmental/sustainability impact assessment (28%), participatory methods (20%), economic risk assessment (18%), cost benefit analysis (17%), and cost effectiveness (14%). The largest difference between these two groups of respondents concerned the participatory method. Respondents whose reference countries had experience with decision-making systems identified this in the fourth position, out of five, while respondents with no experience placed this method in second position. Similarly, cost-benefit analysis came in second position with respondents who had experience in an existing decision-making system, while it placed fourth with respondents who had no experience with decision-making systems for LMOs.

(f) Stages in the decision-making process for incorporating socio-economic considerations

27. Respondents whose reference countries had a decision-making system for LMOs were asked to provide a case or example of a living modified organism and to identify at what stage in the decision-making process socio-economic considerations were taken into account. Ranking the stages by the number of responses they received, these respondents most often identified the socio-economic assessment as occurring during the risk assessment stage. This was followed by “prior to the risk assessment” and “after the risk assessment”, however the difference in the number of responses between these two was extremely small. Taking socio-economic considerations into account during the appeal, review or renewal of the permit was identified the fewest number of times. This would suggest that the socio-economic assessment should be undertaken during the risk assessment.

28. Respondents whose reference countries did not have a decision-making system for LMOs were also asked to give their opinion on when socio-economic considerations should be taken into account. These respondents identified “prior to the risk assessment” more often than any of the other stages. This was followed by: during the risk assessment, after the risk assessment, and during the appeal, review or renewal of the permit. These latter three stages had similar numbers of responses (see figure 11 in annex I.)

29. In the general assessment portion of the survey, all respondents were asked to indicate their level of agreement with a number of statements. Several of these statements had to do with whether or not socio-economic considerations should be included in the decision-making system, when and how. The statement that received the highest level of agreement was “Socio-economic considerations should be included in all decision-making frameworks for living modified organisms” (Table 4). This suggests that respondents saw a need to incorporate socio-economic considerations into the decision-making system for LMOs. There was also a high level of agreement among respondents that decisions concerning living modified organisms should incorporate socio-economic information and scientific risk information at the same time during the decision-making process. Many respondents also agreed that socio-economic considerations should be undertaken separately from scientific risk assessment although others felt that such considerations should be part of the risk assessment. Of the statements reported in Table 4, the one receiving the lowest level of agreement was that “decisions concerning LMOs should incorporate socio-economic information only after scientific risk assessment information has been considered”. The responses to these statements are consistent with those of the respondents whose reference countries have a decision-making system for living modified organisms, since possible socio-economic impacts are considered mostly during the risk assessment stage and less frequently after the risk assessment (see paragraph 27).

Table 4: Ranking of the level of agreement with statements concerning the evaluation of socio-economic considerations (Q43)	
Rank	Statement
1	“Socio-economic considerations should be included in all decision-making frameworks for LMOs.”
2	“Decisions concerning LMOs should incorporate socio-economic information at the same time as scientific risk assessment information is being considered.”
3	“Socio-economic considerations should be undertaken separately from scientific risk assessments of LMOs”
4	“Socio-economic considerations should be part of the scientific risk assessment of LMOs”
5	“Decisions concerning LMOs should incorporate socio-economic information only after scientific risk assessment information has been considered”

(g) Limitations and constraints to incorporating socio-economic considerations in decision-making

30. Respondents whose reference countries had a decision-making system for living modified organisms but these systems did not include socio-economic considerations were asked to assess the importance of a number of possible reasons as to why socio-economic considerations had not been taken into account. The ranking and scoring methods of analysis were used to identify the importance of the different reasons as to why socio-economic considerations had not been taken into account. Both methods placed the reasons in the same order, namely:

1. Mechanism not in place (most important reason)
2. Lack of capacity
3. Lack of institutional coordination
4. Regulation does not require it
5. Political reasons (least important reason).

This would indicate that these reference countries did not have a mechanism in place to account for this information and they did not have the capacity to undertake the analysis (see also figure 12 in annex I.)

31. All respondents were asked to identify the importance of a number of challenges for including socio-economic considerations in the decision-making system (question 36). These challenges were prioritized using the ranking and scoring systems (Table 5). With both systems, financial challenges were the most important challenge to including socio-economic considerations. Institutional challenges were identified as the second most important challenge with the scoring system and the third most important with the ranking system. Informational challenges were the second most important challenge using the ranking system while this challenge placed third with the scoring system. Human resource challenges were tied for the third most important challenge with the scoring system and were the fourth most important challenge with the ranking system.

Table 5: Importance of challenges to including socio-economic considerations in decisions on LMOs (Q36)		
#	Method I: ranking system	Method II: scoring system
1	Financial challenges	Financial challenges
2	Informational challenges	Institutional challenges
3	Institutional challenges	Informational & human resources challenges
4	Human resources challenges	

32. Since the reasons why socio-economic considerations were not taken into account and the challenges were not identical, making comparisons of these results is difficult but some inferences can be drawn. Lack of a mechanism for including socio-economic considerations in decision-making and lack of capacity were identified as important reasons why socio-economic considerations were not included in the decision-making system while human resources and informational and financial challenges were all identified as challenges to including socio-economic considerations in decision-making. This would suggest that capacity building of human resources along with the development of guidelines could be important mechanisms that would decrease the challenges to and the reasons for not including socio-economic considerations in the decision-making system for living modified organisms. Developing human resource capacity and guidelines or toolkits would expand capacity, decrease the financial costs, and provide a mechanism to undertake the analysis.

(h) Capacity and capacity-building

33. Respondents were asked a series of questions on the skills and experience of the individuals making or evaluating the socio-economic assessments of LMOs. Responses to these questions were broken into two groups. The first were respondents whose reference countries had a decision-making system for living modified organisms and the entity responsible for carrying out the assessment also evaluated the assessment. The second group were reference countries with decision-making systems for living modified organisms but who had different entities to assess the socio-economic impacts and to evaluate the socio-economic assessment.

34. When one entity undertook both the assessment and the evaluation, 70 percent of respondents indicated that those responsible for these tasks had skills, professional training or experience in assessing socio-economic considerations (question 20). The skills most often held by these individuals were: economics, law and anthropology. Other skills held by individuals involved in the socio-economic assessment and evaluation included environmental impact assessment, agronomy and statistics.

35. When the entity to assess the socio-economic impacts was different from the entity that evaluated the assessment:

- 61% of the respondents indicated that the individuals carrying out the assessment had relevant skills;
- 63% of the respondents indicated that the individuals evaluating the assessment had relevant skills.

The skills most often identified for both the entity carrying out the assessment and evaluating the assessment were: economics, law and sociology. Other skills that were identified included biology, public policy, medicine, environmental management and anthropology.

36. All respondents were asked whether or not their reference country had adequate capacity to perform socio-economic assessments (question 37). In this case, 41% of the respondents answered in the affirmative while 49% answered in the negative and 10% did not know. It was expected that the capacity level would be

lower for this question because it included reference countries that did not have a decision-making system for living modified organisms or if they did, they did not take socio-economic considerations into account. These results provide a better indication of the need for capacity building in this area. Once decision-making systems are put in place to account for socio-economic considerations in the assessment of living modified organisms, then the skill levels of the individuals involved in the assessment increase. Increasing the capacity for socio-economic assessment could increase the number of reference countries that take socio-economic considerations into account in their decision-making process.

37. Eighty-four percent of the respondents whose reference countries were in need of capacity building thought that a methodological guide or toolkit would be a useful document to assist in the inclusion of socio-economic considerations in the decision-making process (see also figure 13 in annex I.) Respondents were asked to identify the importance of including information on different methods of assessing socio-economic impacts in a methodological guide. The importance of the different assessment methods changed depending on how the results were analysed. Cost effectiveness was the most important element with the ranking system while property rights assessment was in top place with the scoring system. Macroeconomic impacts and cultural/ethical assessment were ranked second and third with both methods of analysis. The ranking of importance for all seven elements is given in Table 6. It should be noted that more than half the respondents (50 to 70%) selected “do not know” when asked to rate the importance of including information on the different assessment methods in the toolkit.

Table 6: Ranking of the importance of assessment methods to be included in a methodological toolkit (Q40)		
#	Method I: ranking system	Method II: scoring system
1	Cost effectiveness	Property right assessment
2	Macroeconomic impacts	Macroeconomic impacts
3	Cultural, ethical assessment	Cultural, ethical assessment
4	Property right assessment	Cost effectiveness
5	Community analysis	Community analysis
6	Benefit-cost assessment	Benefit-cost assessment
7	Economic risk assessment	Economic risk assessment

38. Respondents were asked to identify to whom the methodological guide or toolkit should be directed. The responses indicated that the methodological guide should be directed to those who evaluated the assessment and recommended decisions, those responsible for conducting assessments, and the decision-making authority. All three of these types of individuals received a high ranking. The other groups that received substantially less prominence were: policy makers, civil society and industry. These responses would indicate that the methodological guide should be directed to the first three groups immediately and then to the latter groups.

39. Although many of the respondents did not know which elements to include in the methodological guide, they did recognize it as a good starting point for capacity building. All respondents were asked if a methodological guide would be a good starting point for capacity building in the socio-economic area. Eighty-seven percent said they “somewhat agreed” or “strongly agreed” with this statement, and 69% said that they “strongly agreed” with the statement. This would indicate that there is widespread support across all respondents for the development of a methodological guide to assess socio-economic considerations to build capacity.

(i) Priority areas for capacity-building with respect to socio-economic considerations

40. As stated in paragraph 36 above, 49% of all respondents identified their reference country as not having adequate capacity to undertake socio-economic assessments and another 10% did not know. These respondents answered a series of questions concerning the capacity needs of their reference country. Respondents were given a list of 20 possible socio-economic concerns that could require capacity building and were asked to rank their top 10 priorities. Nine of the top ten priorities were the same whether the ranking or scoring systems were used to analyse the results. Food security was the top priority for capacity building using both systems of analysis, and three of the next four areas were also the same, namely impacts on market access, impacts on the conservation and sustainable use of biodiversity, and coexistence of living modified organisms (Table 7, see also figure 14 in annex I.) The only two areas that were different between the two methods of analysis were labour and employment, which was included with the ranking system, and indigenous and local communities, which was included with the scoring system. These results would suggest that there is a consensus around these nine areas and they would be excellent initial subjects for capacity building.

#	Method I: ranking system	Method II: scoring system
1	Food security	Food security
2	Impacts on market access	Health-related impacts
3	Macroeconomic impacts	Impacts on market access
4	Impacts on biodiversity	Impacts on biodiversity
5	Coexistence of LMOs	Coexistence of LMOs
6	Compliance with biosafety measures	Macroeconomic impacts
7	Health-related	Compliance with biosafety measures
8	Microeconomic impacts	Farmers' rights
9	Farmers' rights	Indigenous communities
10	Labour and employment	Microeconomic impacts

41. A comparison was made between (i) ratings of the importance of 20 socio-economic issues made by respondents from reference countries that had decision-making systems for LMOs and that had taken socio-economic considerations into account with (ii) the rankings by all respondents of priority areas for capacity-building in socio-economic analysis. The result was a match in eight of the top ten socio-economic issues identified by responses to the two questions (Table 8). Food security was rated the most important socio-economic issue and also placed as the top priority for capacity-building. Impacts on market access and coexistence of living modified organisms were identified as being in the top five most important socio-economic issues and in the top five priority areas for capacity-building. Other issues that were common both in terms of importance and priority for capacity-building were: health-related issues, compliance with biosafety measures, impacts on the conservation and sustainable use of biodiversity, macroeconomic impacts, and farmers' rights. Socio-economic issues that were important but that did not have a match in terms of priority for capacity building were economic impacts of changes in pest prevalence and intellectual property rights. Labour and employment, microeconomic impacts, and indigenous and local communities were identified as priority areas for capacity building but were not rated as important socio-economic issues.

Table 8: Importance of socio-economic issues considered in decision-making in comparison to ranking of areas in need of capacity-building			
#	Importance of socio-economic issues considered in LMO decision-making (Q15) Method I: ranking system	Top-ranked priority areas for capacity building (Q38)	
		Method I: ranking system	Method II: scoring system
1	Food security	Food security	Food security
2	Health-related impacts	Impacts on market access	Health-related impacts
3	Coexistence of LMOs	Macroeconomic impacts	Impacts on market access
4	Impacts on market access	Impacts on biodiversity	Impacts on biodiversity
5	Compliance with biosafety measures	Coexistence of LMOs	Coexistence of LMOs
6	Impacts on biodiversity	Compliance with biosafety measures	Macroeconomic impacts
7	Economic impacts of changes in pest prevalence	Health-related impacts	Compliance with biosafety measures
8	Macroeconomic impacts	Microeconomic impacts	Farmers' rights
9	Farmers' rights	Farmers' rights	Indigenous and local communities
10	IPRs	Labour and employment	Microeconomic impacts

42. Respondents whose reference countries did not have a system for decision-making on living modified organisms were asked their opinion on how important it would be to include a number of socio-economic issues in such a decision-making system. These responses were compared to the ranking of priority areas for capacity-building by all respondents. Of the ten socio-economic issues that were identified as most important, seven were also in the top ten priorities for capacity-building. These seven issues were: food security, impacts on market access, macroeconomic impacts, impacts on the conservation and sustainable use of biodiversity, health-related impacts, biosafety measures, and coexistence of living modified organisms.

III. CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

43. A number of conclusions can be drawn from the above information. First, socio-economic considerations can be taken into account in the decision-making process concerning living modified organisms if countries want to do so. Second, once countries start to incorporate socio-economic considerations in their decision-making process they can do this across decisions, across multiple organisms and across intended uses of the organism.

44. The survey results also suggest that the current practice for including socio-economic considerations in decision-making for a majority of the reference countries was for one entity to assess the socio-economic considerations and a different entity to evaluate the assessment. Three entities, the National Competent Authority, a multi-sectoral committee and a government committee consisting of several departments, are most often involved in the assessment of socio-economic considerations and the evaluation of the assessment.

45. While there seems to be a strong consensus that socio-economic considerations should be included in the decision-making systems for LMOs, it is less clear how and where this information should be used. There was some support for the consideration of socio-economic information at the same time as scientific risk assessment information when decisions concerning living modified organisms were being made. There

was far less support for the idea that socio-economic information would be considered after scientific risk assessment information. Respondents were also split in terms of whether socio-economic information should be evaluated separately from the scientific risk assessment or whether socio-economic information should be incorporated into the scientific risk assessment.

46. Respondents strongly disagreed with providing more weight to either socio-economic information or scientific risk assessment information in the decision-making process but also did not express strong support for giving equal weight to both types of information. This may suggest that respondents were unsure about how these two different types of information could be used in the decision-making framework.

47. The capacity to undertake and evaluate socio-economic assessments in decision-making for LMOs varies by reference country. Reference countries that have decision-making systems that already take this information into account score high in terms of having individuals with skills, professional training or experience to undertake and evaluate socio-economic information (see paragraphs 34 and 35, above). However, less than half of all respondents indicated that their reference countries had adequate capacity to perform socio-economic assessments. Reasons why reference countries with existing decision-making systems that consider possible socio-economic impacts of LMOs have higher capacity to address these issues could include increased experience with the decision-making process and a larger capacity, in terms of trained personnel, to undertake this type of analysis. Reference countries that do not have capacity in this area may be reluctant to establish such a decision-making system. There was strong support for the development of a methodological guide by those respondents who felt that their reference country did not have the capacity to undertake socio-economic assessments.

48. The survey results would suggest that there is a consensus forming on the important socio-economic issues and the priority areas for capacity building. The important socio-economic issues that respondents identified as priorities for capacity building include food security, impacts on market access, health-related impacts, macroeconomic impacts and impacts on the conservation and sustainable use of biodiversity. These areas are similar to the important socio-economic issues that were identified by respondents whose reference countries had an existing decision-making system in place that took socio-economic considerations into account. A consensus on these two issues should facilitate the capacity building process and provide direction for the material to be included in the methodological toolkit.

49. Both groups of respondents, those with reference countries who had decision-making systems for living modified organisms and those with reference countries that did not have such systems, had similar assessments of the importance of 20 socio-economic issues that could be included in decision-making on LMOs. Eight of the top ten socio-economic issues of importance were the same for both groups, including three of the top five, namely food security, health-related impacts and compliance with biosafety measures. Similarly, the bottom five issues, in terms of importance, were also the same. A consensus on which socio-economic issues are important and which are less so can facilitate capacity and institutional building.

50. In the general assessment part of the survey, respondents strongly agreed that countries need to build their socio-economic assessment capacity. This response had the highest level of agreement among the statements in question 44. They also responded very positively to the development of a methodological guide or toolkit on how to undertake socio-economic assessments. They supported the guide as a means to start the capacity building process.

51. Respondents identified the primary audience for a methodological guide, namely those who evaluate socio-economic assessments, those who conduct the assessments and decision-making authorities. However, respondents were less clear on what methods for assessing socio-economic impacts should be included in the methodological guide, with a large number of respondents replying “do not know”. This latter response could be explained if respondents did not know how the assessment methods could be applied to the priority

areas where capacity building is required. Further research by experts is needed to illustrate how elements in the methodological guide could be used to address the priority areas of concern for capacity building.

52. Further analysis and survey work could be undertaken of individuals, organizations, governments and industry who are involved in decision-making on LMOs in different parts of the world. One would expect that the priorities and processes that may be acceptable in one region or area would not be the same in other regions. This type of analysis could be expanded beyond regional analyses to investigate priorities, capacity and institutions of developing and developed countries. Some of this analysis could be undertaken using the existing data from the survey. Other types of analysis could also be undertaken, such as examining correlations between the type of organization represented by the individual (e.g. industry, government, non-governmental organization) and their responses to other questions in the survey. Information generated from this additional analysis could be used to develop new surveys to address region-, country- or institution-specific issues.

53. Another area of research that could be explored is defining the elements that would be included in the methodological toolkit. This could include elaborating a clear definition of socio-economic considerations as they relate to decisions concerning living modified organisms and an expert committee to identify appropriate methods for conducting socio-economic assessments of living modified organisms. In addition, case studies and examples could be developed to illustrate how different methods for assessing socio-economic impacts may be applied to LMOs. These case studies could illustrate the strengths and weaknesses of the various assessment methods and provide guidance to practitioners.

54. A third area of research would be institutional development for socio-economic considerations and living modified organisms. This could include which institutions are best to address these issues, what protocol should be used in the assessment and evaluation process, identifying and developing protocols that could be used for the decision-making process, and how to obtain stakeholder input during the decision-making process. The current survey identified the lack of a mechanism to incorporate socio-economic information into the decision-making process and the lack of institutional capacity as barriers to including socio-economic considerations in decision-making. Both of these areas could be investigated. Examples of decision-making frameworks and institutions that have been successful in incorporating socio-economic considerations could be identified and described. Case studies could also be developed to examine the socio-economic assessment protocols used by different countries and their experiences with applying standardized assessment protocols versus assessment protocols designed around the LMO being considered.

55. Finally, work on the methodological guide should commence. This survey documents the need for such a guide as part of the capacity building requirements of countries. The guide could include a description of the methodological elements and their application to living modified organisms.

Annex I

Figure 1. Responses to the question “In your opinion, how important is including socio-economic considerations in decision-making concerning LMOs in your country” (question 5)

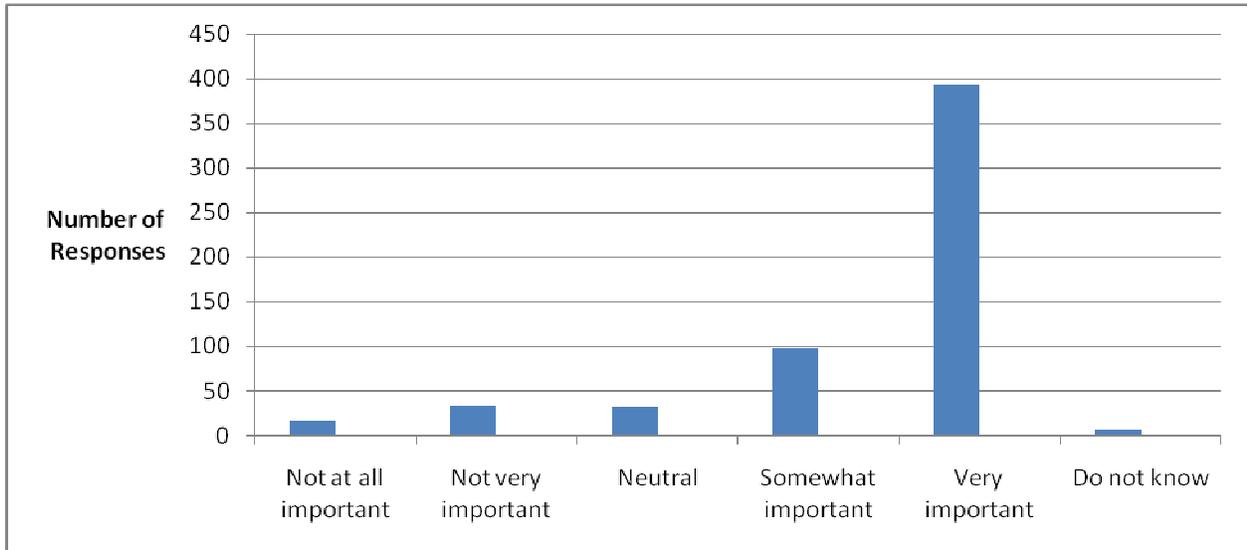


Figure 2. Responses to the question “Does your country have a system (proposed or in effect) for decision-making regarding LMOs?” (question 7)

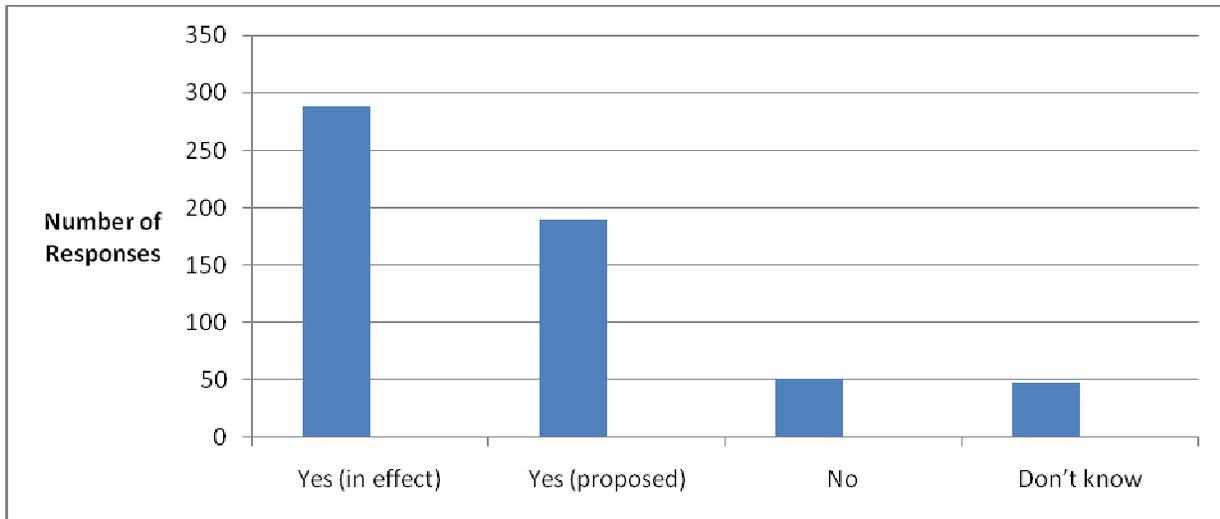


Figure 3. Responses to the question “Does your country’s decision-making system for LMOs allow for socio-economic considerations?” (question 8)

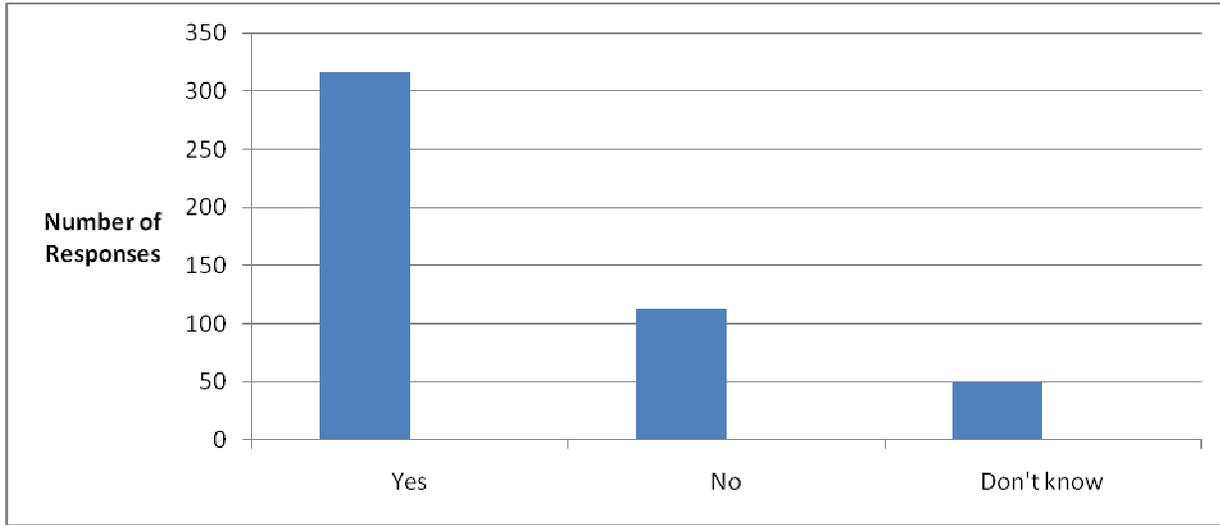
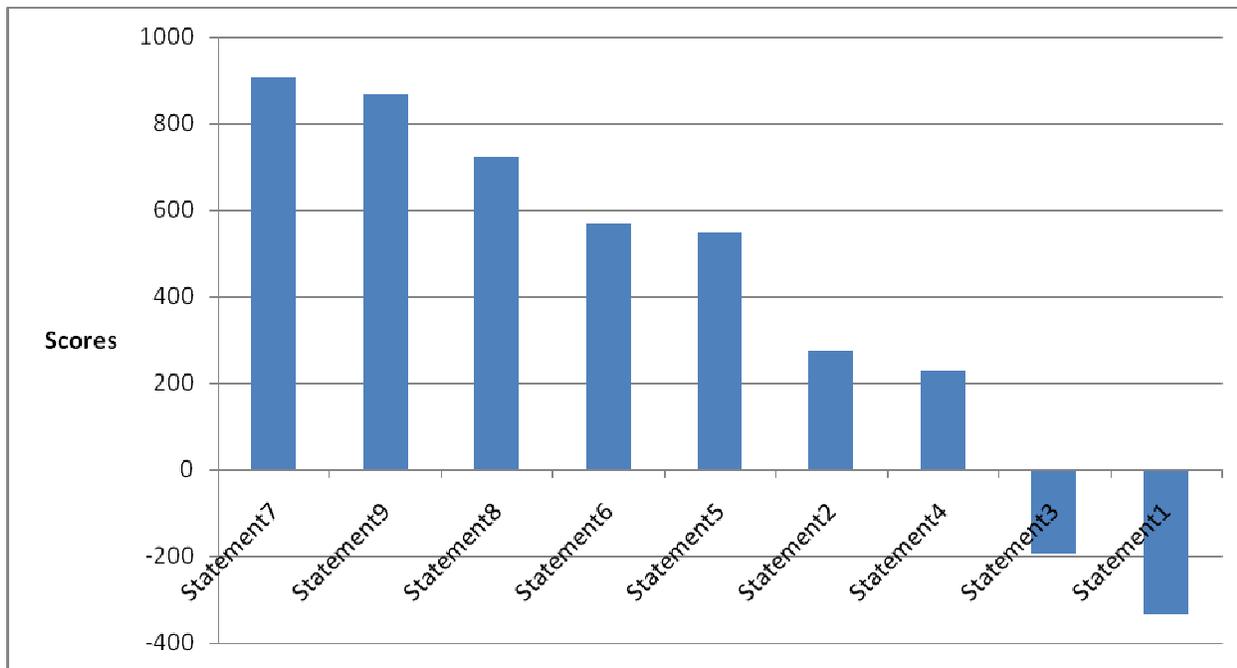


Figure 4. Respondents' level of agreement with nine statements (question 44)



Statement 1	Socio-economic information should be given more weight than scientific risk assessment information.
Statement 2	Socio-economic information should be given equal weight as scientific risk assessment information.
Statement 3	Socio-economic information should be given less weight than scientific risk assessment information.
Statement 4	Socio-economic assessment should be undertaken at each stage of the scientific risk assessment.
Statement 5	Specific items or elements should be included in each socio-economic assessment.
Statement 6	Socio-economic assessments should be designed around the LMO being considered and thus would have different elements included in them.
Statement 7	Countries need to build their socio-economic assessment capacity.
Statement 8	My country would be interested in building its socio-economic assessment capacity.
Statement 9	A methodological toolkit on how to undertake a socio-economic assessment is a good starting point for capacity- building in this area.

Figure 5. Situations where socio-economic considerations were taken into account in decision-making on LMOs (question 12)

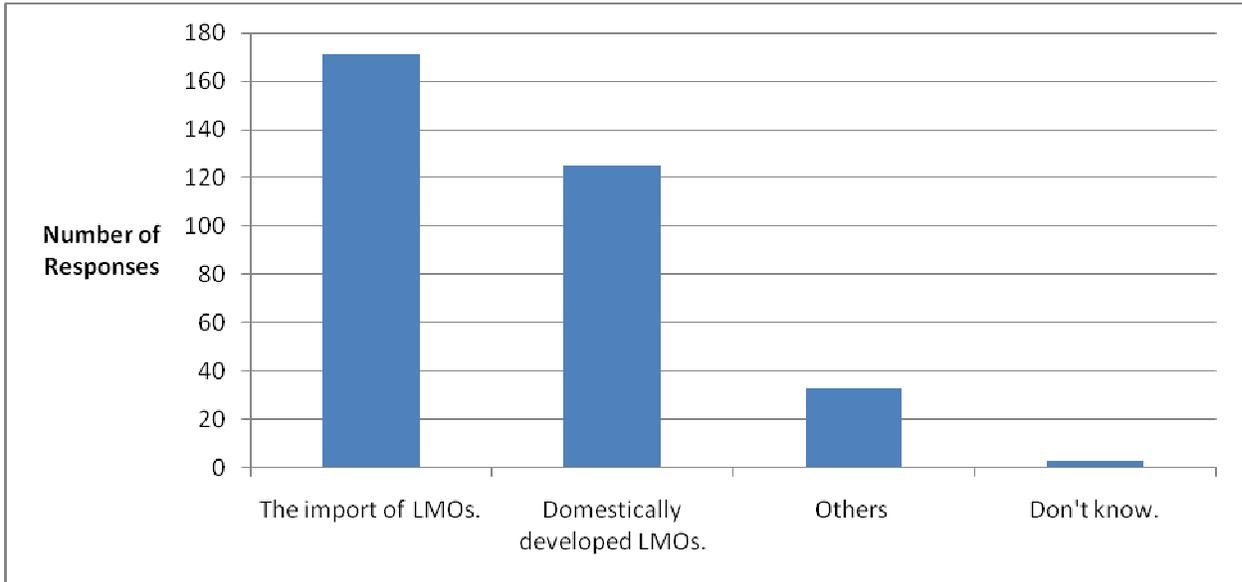


Figure 6. Types of organisms that were the subject of decisions in which socio-economic considerations were taken into account (question 13)

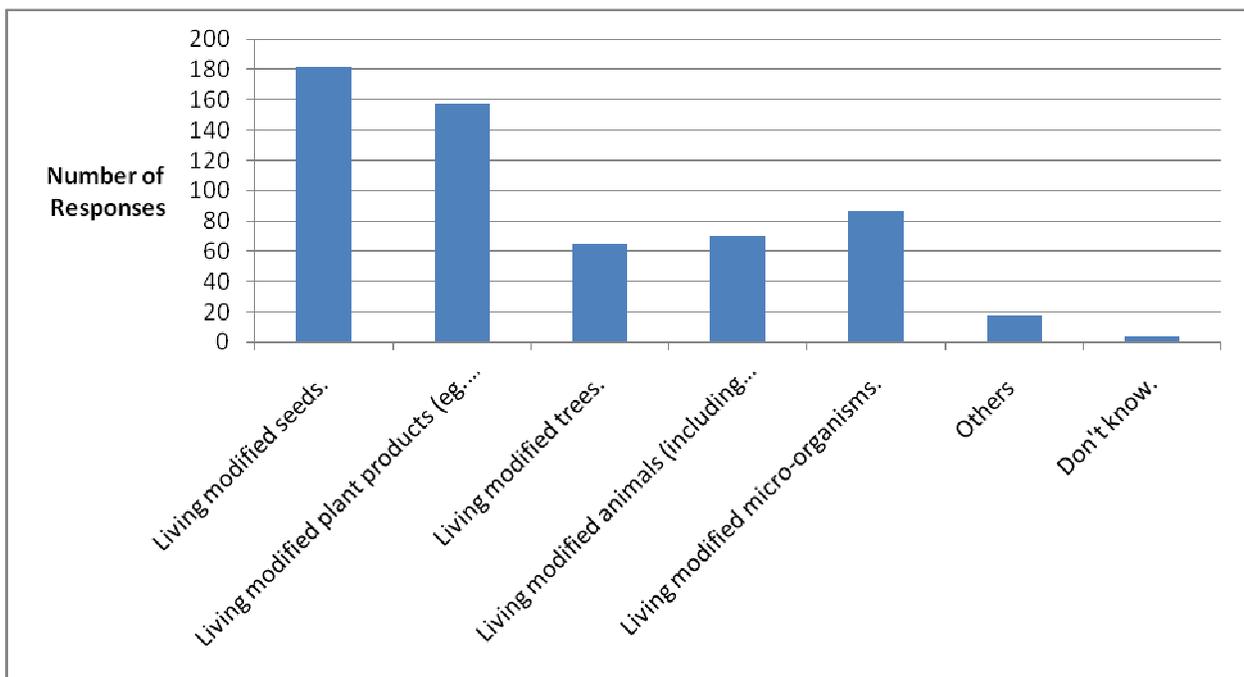


Figure 7. *Intended uses of the LMOs that were the subject of decisions in which socio-economic considerations were taken into account (question 14)*

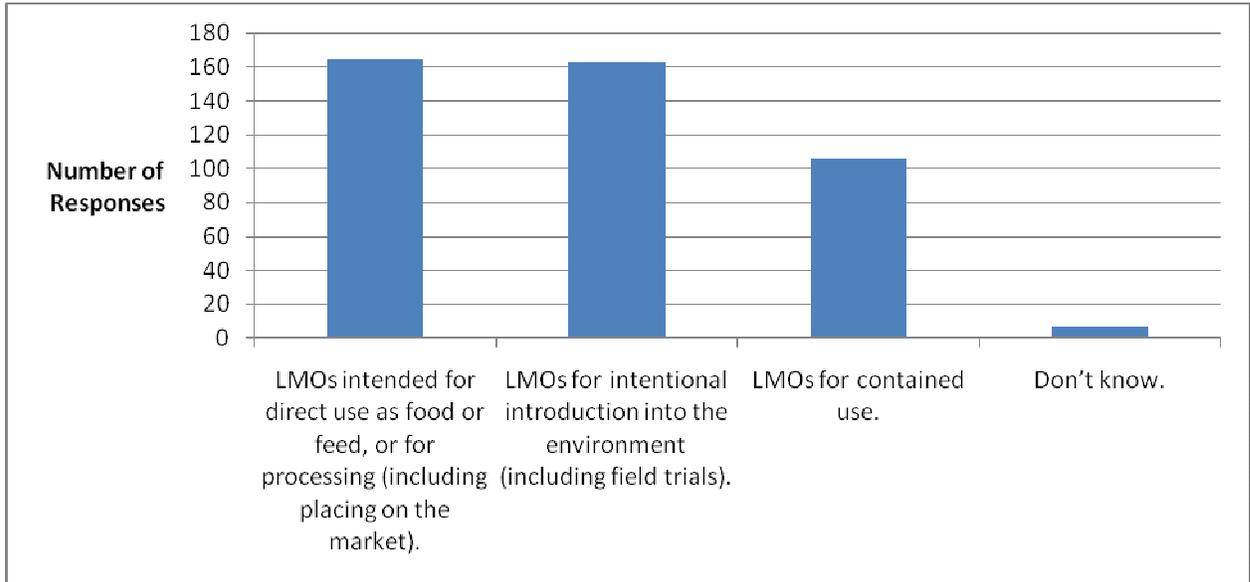


Figure 8. *Entities that were identified as being responsible for carrying out the assessment of socio-economic considerations (question 22)*

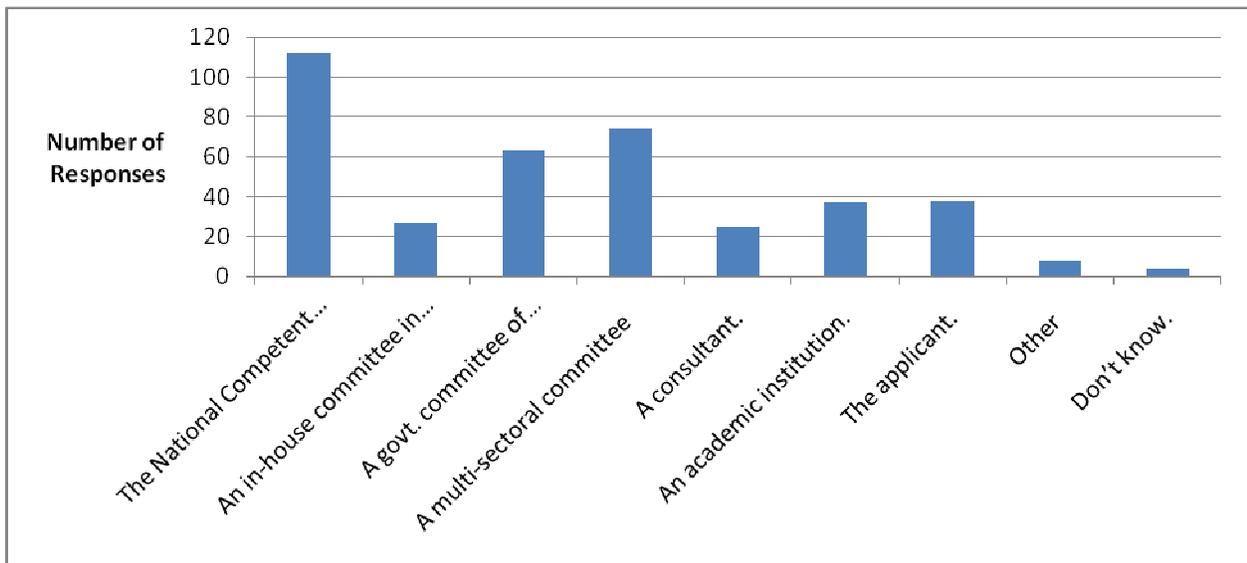


Figure 9. Entities that were identified as being responsible for evaluating a socio-economic assessment in order to recommend a decision (question 25)

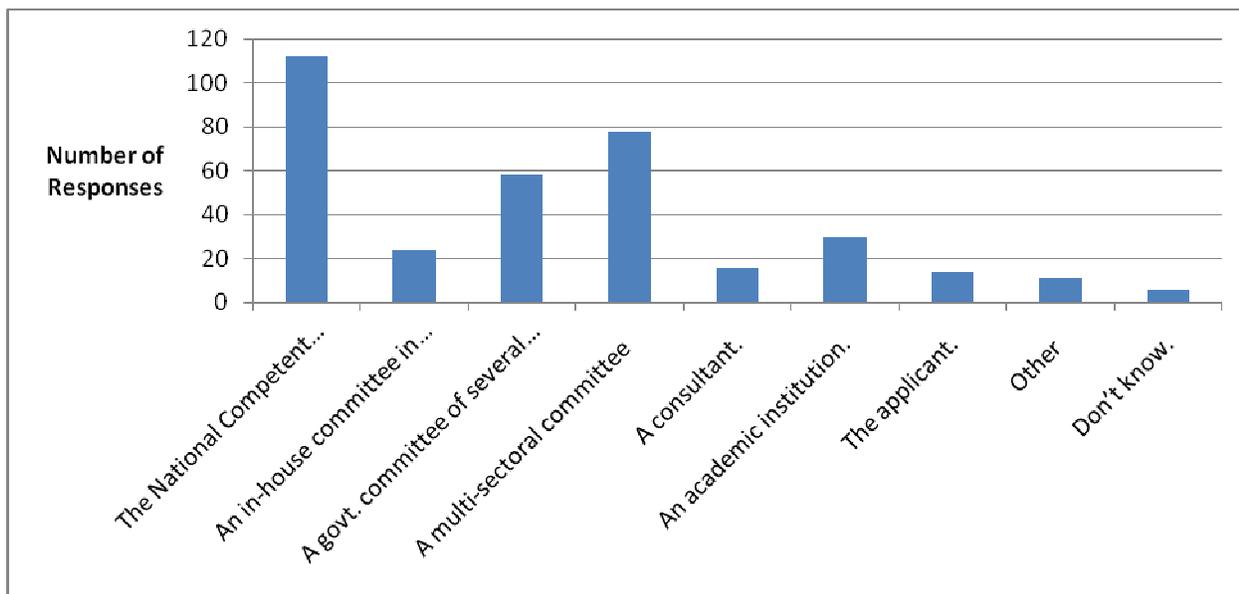


Figure 10. Entities that were identified as being responsible for carrying out and evaluating the assessment of socio-economic considerations (question 19)

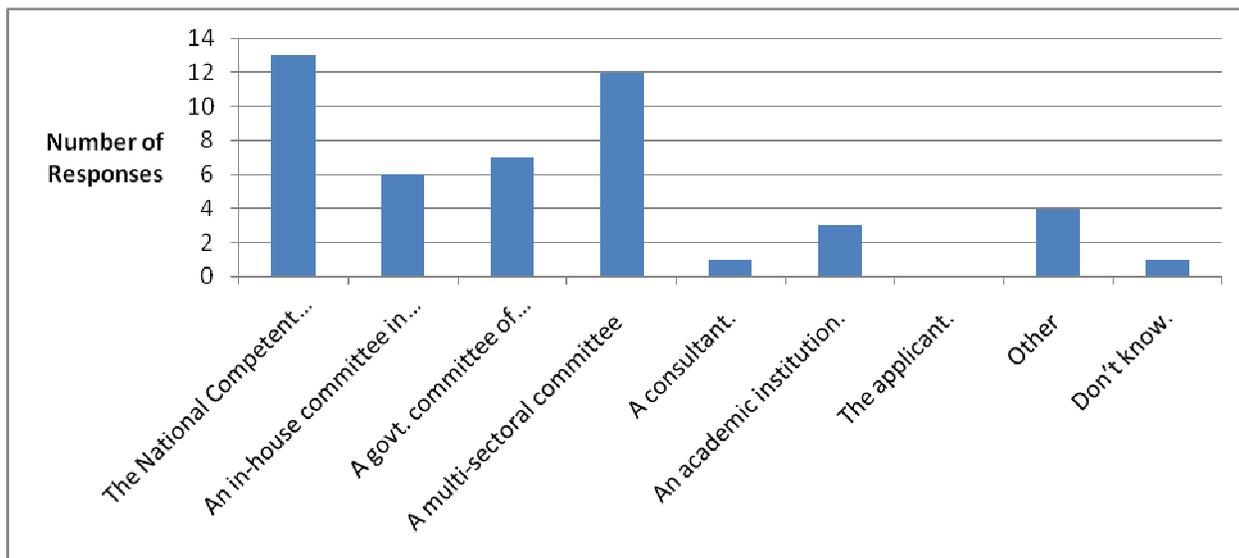


Figure 11. Opinion of respondents whose countries did not have a decision-making system for LMOs on stage at which socio-economic considerations should be taken into account in the decision-making process (question 35)

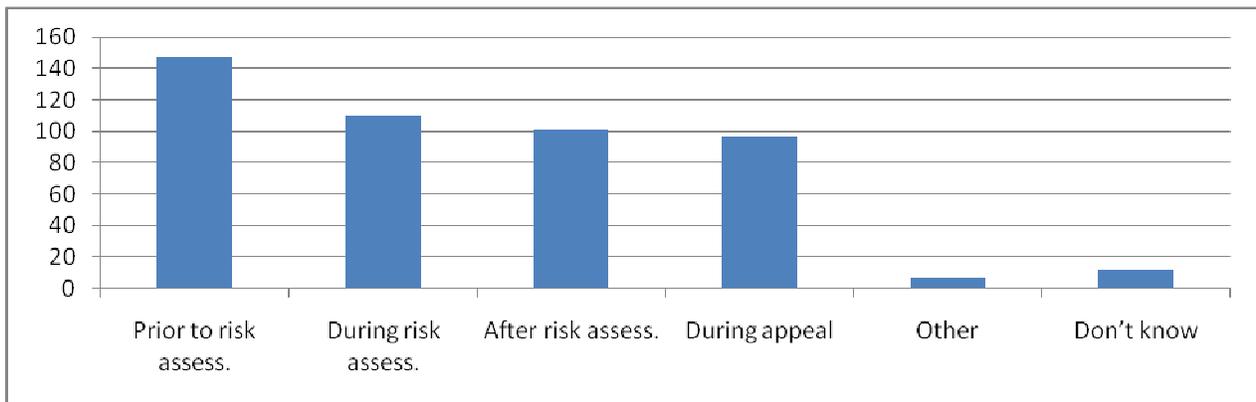


Figure 12. Importance of possible reasons why socio-economic considerations were not taken into account in decisions concerning LMOs: ranking system (question 29)

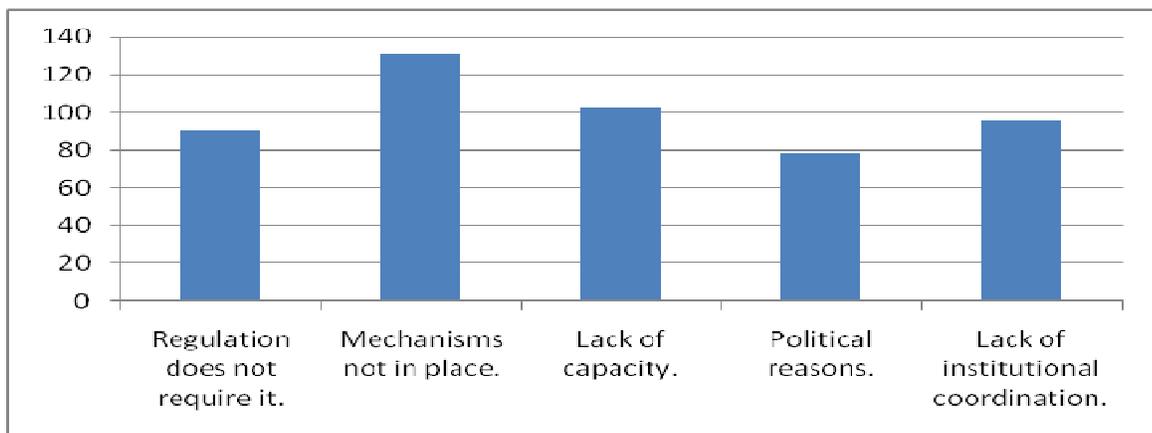


Figure 13. Responses to whether a methodological toolkit would be a useful document to assist in the inclusion of socio-economic considerations in decision-making on LMOs (question 39)

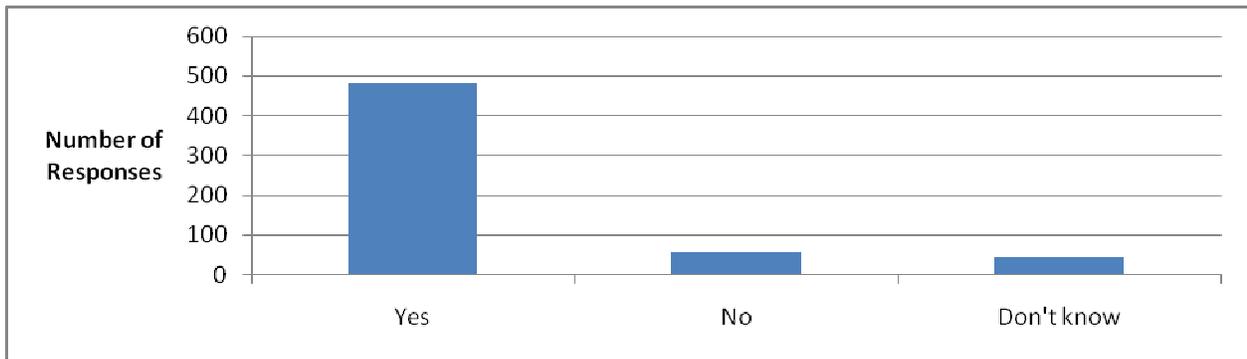
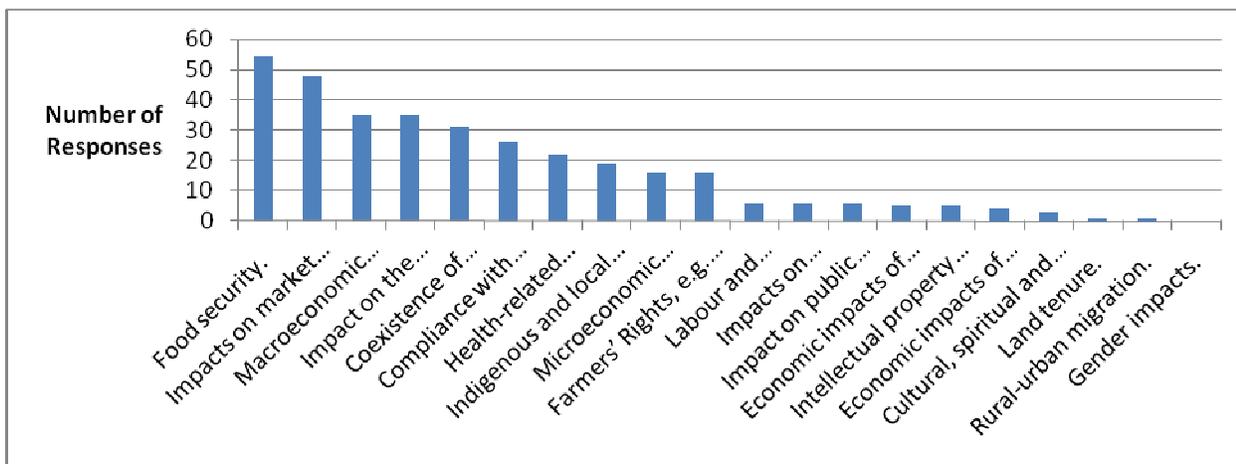


Figure 14. Priority of different areas for capacity-building with respect to socio-economic considerations using the ranking system (question 38)



*Annex II***SURVEY ON THE APPLICATION OF AND EXPERIENCE IN THE USE OF SOCIO-ECONOMIC CONSIDERATIONS IN DECISION-MAKING ON LIVING MODIFIED ORGANISMS**

Socio-economic considerations in decision-making for living modified organisms (LMOs) were a significant and sensitive part of the negotiations of the Cartagena Protocol on Biosafety, and resulted in the adoption, as part of the Protocol, of Article 26 which specifically addresses this issue (see text box 1 below).

Text Box 1: Cartagena Protocol on Biosafety, Article 26 on Socio-economic considerations:

1. The Parties, in reaching a decision on import under this Protocol or under its domestic measures implementing the Protocol, may take into account, consistent with their international obligations, socio-economic considerations arising from the impact of living modified organisms on the conservation and sustainable use of biological diversity, especially with regard to the value of biological diversity to indigenous and local communities.

2. The Parties are encouraged to cooperate on research and information exchange on any socio-economic impacts of living modified organisms, especially on indigenous and local communities.

We are conducting a survey on the “application of and experience in the use of socio-economic considerations in decision-making on living modified organisms”. We hope that this survey will be able to document the practical experience with socio-economic considerations in biosafety decision-making at the grassroots level across a broad range of biosafety stakeholders.

The following responses are your opinions as someone who works in the area and do not necessarily reflect your country, government or organization's opinion. All responses will remain anonymous and only aggregate results will be presented.

1. Check the box that identifies your organization

- Government
- Educational
- Non-Government Organization
- Inter-Governmental
- Private Sector
- Other (Specify): _____.

2. What type of work do you undertake?

- Government/Regulatory
- Academic
- Research for public institutions
- Public information and/or education
- Consulting
- Other (Please specify): _____.

3. Is this survey being answered after consultations with colleagues and other persons?

- Yes
- No

4. The following questions will ask about national experience with socio-economic considerations. Based on your experience, please choose from the menu below the country you will be using as your point of reference: _____.

5. In your opinion, how important is including socioeconomic considerations in decision-making concerning living modified organisms (LMOs) in your country?

	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Response	O	O	O	O	O	O

6. Has your country taken any decisions with regard to the transfer, handling or use of LMOs?

- Yes
- No
- Don't know

7. Does your country have a system (proposed or in effect) for decision-making regarding LMOs?

- Yes (in effect)
- Yes (proposed)
- No
- Don't know

If you answered 'yes (in effect)' or 'yes (proposed)', please proceed to question 8.

If you answered 'no' or 'don't know', please go to question 31.

8. Does your country's decision-making system for LMOs allow for socio-economic considerations?

- Yes
- No
- Don't know

If you answered 'yes', please proceed to question 9.

If you answered 'no' or 'don't know', please go to question 11.

9. How does the decision-making system take into account socioeconomic considerations (choose one):

- Socio-economic considerations are treated in an ad hoc manner or case-by-case, but are not an explicit step in the decision-making system.
- Socio-economic considerations are covered through a general reference in the biosafety regulatory framework or other relevant framework.
- Socio-economic considerations are covered specifically through the identification of particular elements for assessment during specific steps in the process.

10. Which of the following specific socio-economic issues are provided for, or can be considered, under your country's decision-making system for LMOs? (check all that apply)

- Impacts on market access and trade at national and international levels.
- Macroeconomic impacts, e.g. on sustainable development.
- Microeconomic impacts at the individual, household or community level.
- Economic impacts of changes in pest prevalence due to changes in farm management practices.
- Economic impacts of changes in application rates and effectiveness of pesticides and herbicides.
- Compliance with biosafety measures, including institutional costs.
- Coexistence of LMOs, e.g. with conventional and organic agriculture.
- Health-related impacts, including those resulting from changes in the use of pesticides and herbicides.
- Gender impacts.
- Labour and Employment.
- Impacts on consumer choice or consumption patterns.
- Food security.
- Land tenure.
- Rural-urban migration.
- Farmers' Rights, e.g. control of seeds.
- Indigenous and local communities, e.g. livelihoods, traditional knowledge associated with biodiversity.
- Cultural, spiritual and ethical aspects.
- Impact on the conservation and sustainable use of biodiversity, e.g. use value, cultural and spiritual value of biodiversity.
- Intellectual property rights.
- Impact on public sector research and development.
- Other (please specify)
- Don't know.

11. Have socio-economic considerations been taken into account in decisions that have been taken on LMOs?

- Yes
- No
- Don't know

If you answered 'yes', please proceed to question 12.

If you answered 'no' or 'don't know', please go to question 29.

12. Were these decisions concerning: (check all that apply)

- The import of LMOs.
- Domestically developed LMOs.
- Others (please specify).
- Don't know.

13. What types of organisms were the subject of these decisions? (check all that apply)

- Living modified seeds.
- Living modified plant products (eg. grains, fruit, etc).
- Living modified trees.
- Living modified animals (including fish and crustaceans).
- Living modified micro-organisms.
- Others (please provide details).
- Don't know.

14. What intended use(s) of the LMOs were considered in the decisions? (check all that apply)

- LMOs intended for direct use as food or feed, or for processing (including placing on the market).
- LMOs for intentional introduction into the environment (including field trials).
- LMOs for contained use.
- Don't know.

15. How important were the following socio-economic issues when decisions concerning LMOs were made?

	Not considered	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Impacts on market access and trade at national and international levels.	○	○	○	○	○	○	○
Macro-economic impacts, e.g. on sustainable development.	○	○	○	○	○	○	○
Micro-economic impacts at the individual, household or community level.	○	○	○	○	○	○	○
Economic impacts of changes in pest prevalence due to changes in farm management practices.	○	○	○	○	○	○	○
Economic impacts of changes in application rates and effectiveness of pesticides and herbicides.	○	○	○	○	○	○	○

	Not considered	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Compliance with biosafety measures, including institutional costs.	O	O	O	O	O	O	O
Coexistence of LMOs, e.g. with conventional and organic agriculture.	O	O	O	O	O	O	O
Health-related impacts, including those resulting from changes in the use of pesticides and herbicides.	O	O	O	O	O	O	O
Gender impacts.	O	O	O	O	O	O	O
Labour and Employment.	O	O	O	O	O	O	O
Impacts on consumers choice or consumption patterns.	O	O	O	O	O	O	O
Food security.	O	O	O	O	O	O	O
Land tenure.	O	O	O	O	O	O	O
Rural-urban migration.	O	O	O	O	O	O	O
Farmers' Rights, e.g. control of seeds.	O	O	O	O	O	O	O
Indigenous and local communities, e.g. livelihoods, traditional knowledge associated with biodiversity.	O	O	O	O	O	O	O

	Not considered	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Cultural, spiritual and ethical aspects.	<input type="radio"/>						
Impact on the conservation and sustainable use of biodiversity, e.g. use value, cultural and spiritual value of biodiversity.	<input type="radio"/>						
Intellectual property rights.	<input type="radio"/>						
Impact on public sector research and development.	<input type="radio"/>						

Please specify any other issues that were very important.

16. Choose one case where socio-economic considerations were taken into account in a decision on an LMO. Please specify the case.

Given the case you identified, at what stage in the decision-making process were socio-economic considerations taken into account? (Check all that apply.)

	For research (contained use of LMO)	For field trials of LMO	For commercial use of LMO
Prior to risk assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During risk assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After risk assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During appeal, review or renewal of permit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Don't know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify the “other” above where applicable.

17. What methods were or are intended to be used to assess socio-economic considerations? (check all that apply)

- Environmental/sustainability impact assessments.
- Cost-benefit assessment.
- Economic risk assessment.
- Cost effectiveness.
- Participatory methods.
- Others (please specify):

Don't know.

18. Are the people who evaluate the socio-economic assessment the same individuals as those who carried out the socio-economic assessment?

- Yes.
- No.
- Don't know.

If you answered ‘yes’, please proceed to question 19.

If you answered ‘no’ or ‘don’t know’, please go to question 22.

19. What entity is responsible for carrying out and evaluating the assessment of socio-economic considerations?

- The National Competent Authority or other decision-making authority or institution.
- An in-house committee within one government department, office or agency.
- A government committee made up of several government departments, offices or agencies.
- A multi-sectoral committee (e.g. a committee with representatives from government, non-governmental organizations and industry).
- A consultant.
- An academic institution.
- The applicant.
- Other (please specify): _____.
- Don't know.

20. Do those responsible for carrying out and evaluating the assessment have skills, professional training or experience in assessing the socio-economic considerations?

- Yes
- No
- Don't know

If you answered ‘yes’, please proceed to question 21.

If you answered ‘no’ or ‘don’t know’, please go to question 28.

21. What skills do those responsible for carrying out and evaluating socio-economic assessments have? (check all that apply)

- Economics
- Sociology
- Anthropology
- Law
- Other (please specify): _____.
- Don't know.

Please go to question 28.

22. What entity or entities is/are responsible for carrying out the assessment of socio-economic considerations? (check all that apply)

- The National Competent Authority or other decision-making authority or institution.
- An in-house committee within one government department, office or agency.
- A government committee made up of several government departments, offices or agencies.
- A multi-sectoral committee (e.g. a committee with representatives from government, non-governmental organizations and industry).
- A consultant.
- An academic institution.
- The applicant.
- Other (please specify): _____.
- Don't know.

23. Do those responsible for carrying out the assessment have skills, professional training or experience in assessing the socioeconomic considerations?

- Yes
- No
- Don't know

If you answered 'yes', please proceed to question 24.

If you answered 'no' or 'don't know', please go to question 25.

24. What skills do those responsible for carrying out socio-economic assessments have? (check all that apply)

- Economics
- Sociology
- Anthropology
- Law
- Other (please specify): _____.
- Don't know.

25. What entity or entities is/are responsible for evaluating a socio-economic assessment in order to recommend a decision? (check all that apply)

- The National Competent Authority or other decision-making authority or institution.
- An in-house committee within one government department, office or agency.
- A government committee made up of several government departments, offices or agencies.
- A multi-sectoral committee (e.g. a committee with representatives from government, non-governmental organizations and industry).
- A consultant.
- An academic institution.
- The applicant.
- Other (please specify): _____.
- Don't know.

26. Do those responsible for evaluating the assessments have skills, professional training or experience in any of the socio-economic considerations?

- Yes
- No
- Don't know

If you answered 'yes', please proceed to question 27.

If you answered 'no' or 'don't know', please go to question 28.

27. What skills do those responsible for evaluating socio-economic assessments have? (check all that apply)

- Economics
- Sociology
- Anthropology
- Law
- Other (please specify): _____.
- Don't know.

28. Who pays for the cost of the socio-economic assessment? (check all that apply)

- The applicant.
- The National Competent Authority or other decision-making authority.
- Other (please specify): _____.
- Don't know.

Please go to question 30.

29. If your country has not taken socio-economic considerations into account in its decisions on LMOs, how important are the following reasons for why it has not done so?

	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Regulation does not require it.	O	O	O	O	O	O
Mechanisms not in place.	O	O	O	O	O	O
Lack of capacity.	O	O	O	O	O	O
Political reasons.	O	O	O	O	O	O
Lack of institutional coordination.	O	O	O	O	O	O

Were there other important reasons why your country did not take socio-economic considerations into account in its decisions on LMOs?

_____.

30. Are there other approval processes in your country where socio-economic considerations are included (e.g. approvals for new pharmaceuticals, new pesticides, etc.) even though they are not related to living modified organisms?

- Yes
- No
- Don't know

Please go to question 36.

31. How important do you think the following socio-economic issues would be to include in your country's decision-making system on LMOs?

	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Impacts on market access and trade at national and international levels.	O	O	O	O	O	O
Macro-economic impacts, e.g. on sustainable development.	O	O	O	O	O	O

	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Microeconomic impacts at the individual, household or community level.	O	O	O	O	O	O
Economic impacts of changes in pest prevalence due to changes in farm management practices.	O	O	O	O	O	O
Economic impacts of changes in application rates and effectiveness of pesticides and herbicides.	O	O	O	O	O	O
Compliance with biosafety measures, including institutional costs.	O	O	O	O	O	O
Coexistence of LMOs, e.g. with conventional and organic agriculture.	O	O	O	O	O	O
Health-related impacts, including those resulting from changes in the use of pesticides and herbicides.	O	O	O	O	O	O
Gender impacts.	O	O	O	O	O	O
Labour and Employment.	O	O	O	O	O	O

	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Impacts on consumers choice or consumption patterns.	0	0	0	0	0	0
Food security.	0	0	0	0	0	0
Land tenure.	0	0	0	0	0	0
Rural-urban migration.	0	0	0	0	0	0
Farmers' Rights, e.g. control of seeds.	0	0	0	0	0	0
Indigenous and local communities, e.g. livelihoods, traditional knowledge associated with biodiversity.	0	0	0	0	0	0
Cultural, spiritual and ethical aspects.	0	0	0	0	0	0
Impact on the conservation and sustainable use of biodiversity, e.g. use value, cultural and spiritual value of biodiversity.	0	0	0	0	0	0
Intellectual property rights.	0	0	0	0	0	0
Impact on public sector research and development.	0	0	0	0	0	0

32. In your opinion, what methods should be used to assess socio-economic considerations? (check all that apply)

- Environmental/sustainability impact assessments.
- Cost-benefit assessment.
- Economic risk assessment.
- Cost effectiveness.
- Participatory methods.
- Others (please specify): _____.
- Don't know.

33. In your opinion, who should be responsible for carrying out the assessment of socio-economic considerations? (check all that apply)

- The National Competent Authority or other decision-making authority or institution.
- An in-house committee within one government department, office or agency.
- A government committee made up of several government departments, offices or agencies.
- A multi-sectoral committee (e.g. a committee with representatives from government, non-governmental organizations and industry).
- A consultant.
- An academic institution.
- The applicant.
- Other (please specify): _____.
- Don't know.

34. In your opinion, who should be responsible for evaluating the assessment of socio-economic considerations? (check all that apply)

- The National Competent Authority or other decision-making authority or institution.
- An in-house committee within one government department, office or agency.
- A government committee made up of several government departments, offices or agencies.
- A multi-sectoral committee (e.g. a committee with representatives from government, non-governmental organizations and industry).
- A consultant.
- An academic institution.
- The applicant.
- Other (please specify): _____.
- Don't know.

35. In your opinion, at what stage in the decision-making process should socio-economic considerations be taken into account? (Check all that apply.)

	For research (contained use of LMO)	For field trials of LMO	For commercial use of LMO
Prior to risk assessment	○	○	○
During risk assessment	○	○	○
After risk assessment	○	○	○
During appeal, review or renewal of permit	○	○	○
Other	○	○	○
Don't know	○	○	○

Please specify the "Other" above where applicable.

36. How important are the following challenges to your country in including socio-economic considerations in its decisions on LMOs?

	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Institutional challenges	○	○	○	○	○	○
Human resources challenges	○	○	○	○	○	○
Financial challenges	○	○	○	○	○	○
Informational challenges	○	○	○	○	○	○

Are there other important challenges that your country faces when trying to include socio-economic considerations in its decisions on LMOs? (Please specify)

37. In your opinion, is the capacity adequate in your country for the performance of socio-economic assessments?

- Yes
- No
- Don't know

If you answered 'yes', please go to question 39.

If you answered 'no' or 'don't know', please proceed to question 38.

38. From the following list, please rank the top 10 areas that are in need of capacity-building in the field of socio-economic assessment for your country? (A ranking of 1 is the top priority while a ranking of 10 is the lowest priority.)

- Impacts on market access and trade at national and international levels.
- Macroeconomic impacts, e.g. on sustainable development.
- Microeconomic impacts at the individual, household or community level.
- Economic impacts of changes in pest prevalence due to changes in farm management practices.
- Economic impacts of changes in application rates and effectiveness of pesticides and herbicides.
- Compliance with biosafety measures, including institutional costs.
- Coexistence of LMOs, e.g. with conventional and organic agriculture.
- Health-related impacts, including those resulting from changes in the use of pesticides and herbicides.
- Gender impacts.
- Labour and Employment.
- Impacts on consumers choice or consumption patterns.
- Food security.
- Land tenure.
- Rural-urban migration.
- Farmers' Rights, e.g. control of seeds.
- Indigenous and local communities, e.g. livelihoods, traditional knowledge associated with biodiversity.
- Cultural, spiritual and ethical aspects.
- Impact on the conservation and sustainable use of biodiversity, e.g. use value, cultural and spiritual value of biodiversity.
- Intellectual property rights.
- Impact on public sector research and development.

39. Do you think a methodology guide (toolkit) would be a useful document to assist the inclusion of socio-economic considerations in your country's decision-making concerning LMOs?

- Yes
- No
- Don't know

If you answered 'yes', please proceed to question 40.

If you answered 'no' or 'don't know', please go to question 42.

40. How important would information on these elements be in a methodological guide (toolkit)?

	Not at all important	Not very important	Neutral	Somewhat important	Very important	Do not know
Benefit cost assessment	O	O	O	O	O	O
Economic risk assessment	O	O	O	O	O	O
Cost effectiveness	O	O	O	O	O	O
Macro-economic impacts	O	O	O	O	O	O
Community analysis	O	O	O	O	O	O
Property right assessment	O	O	O	O	O	O
Cultural, ethical assessment	O	O	O	O	O	O

What other elements would you find useful in a toolkit?

_____.

41. To whom should a toolkit be targeted? (check all that apply)

- Those responsible for conducting assessments.
- Those responsible for evaluating assessments and recommending decisions.
- The decision-making authority.
- Policy makers.
- Civil society organizations.
- Industry.
- Others (please specify): _____.

42. Please provide any other information on tools that your country would find useful for taking socio-economic considerations into account in decision-making on LMOs.

_____.

44. Please indicate your level of agreement with the statements given below.

	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree	Do not know
Socioeconomic information should be given more weight than scientific risk assessment information.	<input type="radio"/>					
Socioeconomic information should be given equal weight as scientific risk assessment information.	<input type="radio"/>					
Socioeconomic information should be given less weight than scientific risk assessment information.	<input type="radio"/>					
Socioeconomic assessment should be undertaken at each stage of the scientific risk assessment.	<input type="radio"/>					
Specific items or elements should be included in each socioeconomic assessment.	<input type="radio"/>					
Socioeconomic assessments should be designed around the LMO being considered and thus would have different elements included in them.	<input type="radio"/>					

	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree	Do not know
Countries need to build their socioeconomic assessment capacity.	<input type="radio"/>					
My country would be interested in building its socioeconomic assessment capacity.	<input type="radio"/>					
A methodological toolkit on how to undertake a socioeconomic assessment is a good starting point for capacity-building in this area.	<input type="radio"/>					

45. What is the best way for socio-economic considerations to be incorporated into the decision-making framework on living modified organisms?

46. Please provide any other comments on the socio-economic considerations for decision-making on living modified organisms.

Thank you for taking the time to complete this survey on the use of socio-economic considerations in decision-making on living modified organisms. Results from the survey will be posted on the Biosafety Clearing-House.

Click on the "Next" button to be redirected to the Biosafety Clearing-House.
