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CONFERENCE OF THE PARTIES TO THE CONVENTION
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MEETING OF THE PARTIES TO THE CARTAGENA
PROTOCOL ON BIOSAFETY

Sixth meeting
Hyderabad, India, 1-5 October 2012

REPORT OF THE WORKSHOP ON CAPACITY-BUILDING FOR RESEARCH AND INFORMATION EXCHANGE ON SOCIO-ECONOMIC IMPACTS OF LIVING MODIFIED ORGANISMS

INTRODUCTION

1. At its fifth meeting, the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety (COP-MOP) in decision BS-V/3 requested the Executive Secretary to convene a regionally-balanced workshop on capacity-building for research and information exchange on socio-economic impacts of living modified organisms (LMOs), with the following main objectives:

(a) Analysis of the capacity-building activities, needs and priorities regarding socio-economic considerations submitted to the Biosafety Clearing-House (BCH) by Parties and other Governments, and identification of options for cooperation in addressing those needs;

(b) Exchange and analysis of information on the use of socio-economic considerations in the context of Article 26 of the Protocol.

2. Accordingly, with the financial support of the Government of Norway and following the offer to host by the Government of India, the Workshop on Capacity-building for research and information exchange on socio-economic impacts of Living Modified Organisms under the Cartagena Protocol on Biosafety was held in New Delhi from 14 to 16 November 2011.

ITEM I. OPENING OF THE WORKSHOP

3. Mr. Hem Pande, Joint Secretary, Ministry of Environment and Forests, Government of India, chaired the opening of the workshop.

4. Mr. Charles Gbedemah, Principal Officer for Biosafety, Secretariat of the Convention on Biological Diversity (CBD), made an opening statement on behalf of the Executive Secretary. He thanked the Government of India for hosting the workshop and the Government of Norway for providing the necessary financial resources. He noted that socio-economic considerations will be one of the key items on the agenda for the sixth meeting of the Parties to the Protocol and that the outcomes of the

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workshop would be an important contribution to those deliberations. He paid tribute to Dr. Ranjini Warriar, Director of the Conservation and Survey Division of the Ministry of Environment and Forests, Government of India, and Dr. Sachin Chaturvedi, Senior Fellow, Research and Information Systems for Developing Countries (RIS) for their efforts in preparing for the workshop.

5. Dr. Casper Linnestad, Senior Adviser, Ministry of the Environment of the Government of Norway made a statement on behalf of his Minister, Mr. Erik Solheim. He welcomed the Government of India's continued commitment to the CBD and its Cartagena Protocol on Biosafety in the lead-up to the sixth meeting of the COP-MOP to be held in Hyderabad in October 2012. He noted the strengthening of bilateral cooperation between India and Norway on the environment over the past few years. He indicated that Norway hopes that one of the outcomes of the workshop would be a suggestion for the development of guidelines on socio-economic considerations in biosafety decision-making to be applied by countries, as appropriate. Mr. Linnestad pointed to the gaps in knowledge and capacity on this issue and the need to seek knowledge in this regard. Finally, he thanked the Government of India for hosting the workshop and the Convention Secretariat for its preparations.

6. Mr. T. Chatterjee, Secretary, Ministry of Environment and Forests, Government of India, expressed his privilege at being able to open the workshop. He outlined a number of socio-economic aspects of LMOs and their importance in the decision-making process. He indicated that capacity-building is necessary to enable countries to undertake socio-economic assessments and noted that the workshop offered a unique opportunity to learn, exchange ideas and engage in meaningful discussions on the implementation of Article 26 of the Protocol. He thanked the Government of Norway for co-chairing the workshop and the CBD Secretariat for organizing the workshop.

7. Dr. Biswajit Dhar, Deputy Director of RIS, offered a word of thanks to Norway and the Convention Secretariat. He noted that RIS was honoured to be involved in organizing the workshop. He said RIS has been undertaking research in this area for many years. He welcomed the participants to New Delhi.

ITEM 2. OBJECTIVES AND PROGRAMME FOR THE WORKSHOP

8. Following, the official opening of the workshop, Professor P.G. Chengappa, national professor of the Indian Council of Agriculture Research at the Institute for Social and Economic Change, and Dr. Linnestad continued as co-chairs of the workshop. Co-Chair Chengappa invited a representative of the CBD Secretariat to introduce the objectives and the programme for the workshop.

9. The Secretariat described the three-step process that was followed to implement the requests to the Executive Secretary made by the COP-MOP in decision BS-V/3 regarding the issue of socio-economic considerations. The three steps were:

(a) The call for submissions on socio-economic considerations and convening online discussion groups on socio-economic considerations through the BCH. This step also included seeking the advice of the Liaison Group on Capacity-Building for Biosafety on the organization of the workshop;

(b) Convening the regional online real-time conferences on socio-economic considerations through the BCH; and

Organizing the workshop according to the objectives set out in paragraph 25 of decision BS-V/3 (see paragraph 1, above).

10. The Secretariat noted that the agenda for the workshop followed the two objectives contained in the decision. Furthermore, it noted that, in paragraph 28 of decision BS-V/3, the Parties requested the Secretariat to synthesize the outcomes of the online conferences and the workshop and to submit a report

to the sixth meeting of the Parties for consideration of further steps. The Secretariat indicated that to this end, under agenda item 5, the workshop would consider possible next steps and conclusions.

11. Co-Chair Chengappa then invited the participants to introduce themselves.

ITEM 3. EXCHANGE AND ANALYSIS OF INFORMATION ON SOCIO-ECONOMIC CONSIDERATIONS

12. Co-Chair Chengappa invited the Secretariat to introduce the relevant documents under this agenda item. The Secretariat indicated that two documents had been prepared for this agenda item: “Synthesis of information on experiences with socio-economic considerations in decision-making in areas other than biosafety” (UNEP/CBD/BS/WS-SEC/1/2) and “Synthesis of information on national experiences with socio-economic considerations in decision-making on living modified organisms” (UNEP/CBD/BS/WS-SEC1/3). Both documents synthesized the relevant information made available through the submissions by Parties and relevant organizations, the online discussion groups and the regional online real-time conferences on socio-economic considerations.

13. Co-Chair Chengappa noted that presentations¹ and discussions under this agenda item would begin with examinations of socio-economic considerations from a broader perspective than just biosafety and LMOs before moving to address national experiences with socio-economic considerations in decision-making on LMOs. He invited Dr. Asha Rajvanshi, Professor and Head of the Environmental Impact Assessment Cell of the Wildlife Institute of India to make a presentation on “Socio-economic considerations in environmental decision-making in India”. Dr. Rajvanshi outlined the following three phases characterizing the evolution of socio-economic considerations and environmental impact assessment (EIA) in India:

- From the 1970s to the mid-1990s: this period saw the beginning of the environmental movement in India but EIA was not mandatory in the country at the time;
- From 1994 to 2006: EIA became mandatory in 1994 and public participation in EIAs became mandatory in 1997. It was largely through public participation that socio-economic impacts were included and considered in EIAs;
- From 2006 onwards: the EIA process was reformed in 2006 to enable better integration of the issues raised during public hearings into the EIA.

14. Dr. Rajvanshi outlined some ongoing constraints and challenges in the EIA process in India. One was the lack of an inter-disciplinary approach among government ministries. She also noted that while there were requirements that only certified experts can conduct EIAs, capacity-building on methods for conducting EIAs and assessing socio-economic impacts is needed. She further noted that there were still limited options for integrating public views in decision-making. Furthermore, a lack of clarity about the linkages between biodiversity and socio-economic impacts posed one of the biggest challenges for decision-making. Finally, she noted that social impacts are difficult to mitigate, leading to a more complex risk landscape.

15. Dr. Rajvanshi concluded by noting a number of prospects for public participation and EIAs. She stated that public perceptions are becoming a powerful means of steering decisions. There is now a well-recognized role of civil society organizations in promoting accountability and transparency in decision-making.

16. The next speaker was Dr. José Falck-Zepeda, Research Fellow, International Food Policy Research Institute (IFPRI). He made a presentation entitled “Socio-economic Impact Evaluation: Topics, Methods and Ongoing Work” on behalf of Dr. Carolina Gonzalez of the International Centre for Tropical

¹ All presentations from the workshop have been made available at: http://bch.cbd.int/protocol/cpb_art26/workshop.shtml.

Agriculture (CIAT) who was unable to travel to New Delhi. Dr. Falck-Zepeda noted that impact evaluation is one of the themes addressed by CIAT and their objective is to assess the impacts of technologies, institutions and projects in order to target, document and increase the effectiveness of research and development.

17. Dr. Falck-Zepeda described four steps in the design and conduct of a socio-economic impact evaluation: (1) defining the objectives, technology and the target population; (2) designing the evaluation tools (e.g. questionnaire, interviews) and approaches (qualitative versus quantitative); (3) conducting field work to collect the data; and (4) analysing the data. He noted that the process for an evaluation includes conducting a survey to establish a baseline; monitoring and evaluation on the basis of a set of indicators; and replicating the baseline survey to assess the impact of the introduction of the technology.

18. Dr. Falck-Zepeda indicated that a number of projects are being undertaken in this area by CIAT including the “Latin America: Multi-country Capacity-Building for Compliance with the Cartagena Protocol on Biosafety Project”. The project, which includes Brazil, Colombia, Costa Rica and Peru, aims to improve understanding of the socio-economic impacts associated with the use of genetically modified (GM) crops in Latin America and to improve the countries’ capacity to carry out assessments of the effects of LMOs, including through strengthening technical capacity for socio-economic impact assessment.

19. Following questions and comments on Dr. Falck-Zepeda’s presentation, Co-Chair Chengappa invited the participants to break into small groups to discuss the two presentations in more detail. He suggested the following guiding questions to facilitate the small group discussions:

- What are some areas in my country where socio-economic considerations are taken into account in decision-making?
- How might these areas help inform the incorporation of socio-economic considerations into decision-making on LMOs?
- How does the application of socio-economic considerations in other areas relate to biosafety?

20. Co-Chair Linnestad invited the rapporteurs from each of the small groups to summarize the discussions for the plenary. In response to the first question, it was reported that, among countries represented at the workshop, socio-economic considerations are taken into account in processes such as road planning, electricity installations, agricultural development and pharmaceutical and chemical approvals. It was also reported that a number of countries have requirements for conducting *ex ante* assessments of the environmental impacts of large projects and for some, these assessments also include socio-economic aspects. It was noted that the *Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters* is also relevant for countries that are Party to it.

21. Points raised in response to the second and third questions were similar. Some of the groups noted that lessons learned from existing systems can be useful in the context of biosafety but the specific aspects or issues relevant to biosafety need to be taken into account when designing systems for decision-making on LMOs. One group suggested that existing systems can help inform the identification of objectives to be achieved by including socio-economic considerations in decision-making, can help in the development of predictable and transparent processes, and can help in the development of frameworks for the interpretation of outcomes and the incorporation of these outcomes into decision-making. Another group indicated that socio-economic considerations in decision-making can involve several different parts of government so cooperation is required for it to be effective.

22. After the reports from the small groups, Co-Chair Linnestad indicated that the next presentations would focus on national experiences with socio-economic considerations in decision-making on LMOs.² Under this part, four presentations were made representing perspectives from France, Bolivia, India and Norway. Participants had the opportunity to ask questions and make comments following each of the presentations.

23. Mr. Martin Rémondet, Chargé de mission with the Economics, Ethics and Social Committee of the High Council on Biotechnology of the Government of France made a presentation on the “French ‘High Council for Biotechnologies’: an innovative institution for GMO assessment”. He stated that the High Council for Biotechnologies (HCB) was created in 2008 and consists of a Scientific Committee and an Economic, Ethics and Social Committee. The HCB provides advice to the French authorities on any question related to biotechnology but it does not have decision-making power.

24. Mr. Rémondet explained that the Economic, Ethics and Social Committee conducts case-by-case analyses to determine the possible benefits and detriments of a GMO and to consider the GMO in the broader economic, social, ethical and agronomic context. The Committee then prepares recommendations that identify the stakes, arguments and different points of view but it does not aim to build consensus or to weigh the pros and cons.

25. Mr. Rémondet noted that the 2007 French law on GMOs provides for the freedom to produce and consume with or without GMOs and socio-economic evaluations is one way to guarantee this freedom and the co-existence of GM, conventional and GM-free production.

26. Co-Chair Linnestad invited Ms. Georgina Catacora, Advisor with the Directorate General for Biodiversity and Protected Areas, Government of Bolivia, to provide an overview of “Socio-economic Considerations in Decision-Making related to LMOs: Experiences from the Plurinational State of Bolivia”. Ms. Catacora outlined three cases of LMO introductions in Bolivia – living modified (LM) potato, soybean and maize – and the different socio-economic issues that were raised in these cases. These included: socio-economic and cultural impacts on rural and indigenous communities that could result from potential ecological changes caused by the introduction of an LM potato; changes in the mechanical and chemical management necessary to deal with volunteer Roundup Ready soybean plants following its approval; changes in access to differentiated markets; and ecological and social risks (such as changes in local livelihoods, knowledge, conservation strategies and cultural uses) to Bolivia as a center of origin of potato and a center of genetic diversification of both potato and maize.

27. Ms. Catacora also described Bolivia’s legal framework for addressing socio-economic considerations related to LMOs. She outlined a number of different regulatory instruments which establish the overall objective for the inclusion of socio-economic considerations in the decision-making process on LMOs, namely to promote well-being by preventing and avoiding potential risks and adverse effects on ecological, socio-economic and life systems resulting from LMOs, products thereof and related technological packages.

28. Ms. Catacora concluded by noting some of Bolivia’s challenges related to consideration of socio-economic aspects of LMOs. These included: the need for a clear understanding at the international level of what is ‘socio-economic considerations’; knowledge gaps on the socio-economic dimensions of biosafety, particularly regarding centres of origin and indigenous people; identification of suitable assessment methods; capacity-building; and the link between socio-economics and liability and redress.

29. Co-Chair Linnestad next invited Dr. Sachin Chaturvedi, Senior Fellow, RIS, to present on the “Indian Legislative Experience with Socio-Economic Provisions on GM Crops”. Dr. Chaturvedi noted that India’s biosafety regulatory system provides for an evaluation of the economic benefits of LMOs

² More information on national experiences with socio-economic considerations in decision-making on LMOs is available in document [UNEP/CBD/BS/WS-SEC/1/3](#).

through a systematic evaluation of agronomic performance. Furthermore, current guidelines require the generation of data on the economic advantage of a transgenic variety over existing varieties.

30. Dr. Chaturvedi reviewed a number of studies that addressed the socio-economic impacts of Bt cotton in India. He noted that the studies suggest that Bt technology has been a major factor in boosting cotton productivity, has had positive effects on human health and the environment due to reduced use of pesticides and has increased farmers' net returns. Dr. Chaturvedi also identified some issues with Bt cotton that remain to be addressed, including:

- the high price of seeds and the wide availability of hybrids versus a lack of open pollinated varieties;
- dominance by the private sector with only a small share for the public sector;
- the need for varieties with traits more relevant to small-holder and marginal farmers;
- lack of awareness of the need to set aside land as refugia; and
- development of varieties with stacked genes and multiple traits as linked to the need for pro-poor, inclusive and sustainable development in agriculture.

31. Dr. Chaturvedi then described the three criteria used by regulators in India when assessing LMOs: safety, efficacy and effectiveness. The criterion of effectiveness addresses how the LMO actually works in different contexts and conditions and he stated that this is directly relevant to the assessment of socio-economic impacts.

32. Dr. Chaturvedi outlined the proposed Biotechnology Regulatory Authority of India (BRAI) bill, which would reform the regulation of biotechnology in India. He noted that BRAI provides for the creation of an Economic Analysis Unit that would conduct *ex ante* and *ex post* impact analyses. He concluded by outlining some of the ongoing challenges, such as the need for capacity-building and political will for implementation; the different views of the state governments in India; the need for awareness-raising and education in policy-makers and farmers alike; and the need for the country to develop a domestically-appropriate system for decision-making.

33. Co-Chair Linnestad invited Mr. Bjarte Rambjør Heide, Senior Advisor to the Norwegian Directorate for Nature Management, to give a presentation on Norway's experiences with socio-economic considerations in decision-making on LMOs. Mr. Heide pointed to sections 1 and 10 of the Norwegian Gene Technology Act as setting the purpose of the Act and addressing requirements related to approvals. He indicated that five assessment criteria for applications for the release of GMOs were identified on the basis of these legislative provisions, namely: health, environment, ethics, sustainable development and benefit to society. It is the role of the Norwegian Biotechnology Advisory Board (NBAB) to evaluate the latter three of these criteria. Mr. Heide indicated that, in the year 2000, the NBAB had originally published its opinion on how to implement the concepts of sustainability, benefit to community and ethics. Some aspects of its opinion have since been incorporated into Appendix 4 of the Norwegian Gene Technology Act, which uses a series of questions to guide the evaluation of ethical considerations, sustainability and benefit to society.

34. Mr. Heide outlined the links between the Norwegian and European Union (EU) processes for LMO applications and noted the limitations of the information submitted by notifiers to the EU for evaluating the socio-economic criteria in the Norwegian approach.

35. Mr. Heide then described Norway's experience with applications for two different LMOs. In one case, the NBAB members agreed that a modified carnation was not particularly beneficial to society nor contributed to achieving sustainable development but a majority of the members were of the opinion that these factors could not be the basis for a negative decision. In another case, 14 of 15 NBAB members recommended a ban on a GM maize variety due to sustainability issues and overall lack of documentation on sustainability, benefit to society and ethics.

36. Mr. Heide noted that the Norwegian Directorate for Nature Management is currently considering how to develop trait-specific guidelines for assessment of sustainability and benefit to society. He concluded by observing that the Norwegian Gene Technology Act requires a broad approach to GMO assessment, which increases complexity. The country had developed a framework for the assessment of socio-economic criteria but has not finalized detailed guidelines as to how the socio-economic criteria should be assessed or weighed. He stated that Norway has not used the socio-economic criteria to any large extent in decision-making on LMOs and implementing the criteria requires continuous efforts.

37. After the presentations, Co-Chair Linnestad invited the participants to break into small groups to discuss issues arising from the presentations in more detail. He suggested the following questions to guide the small group discussions:

- What goals may countries wish to achieve by taking socio-economic considerations into account in biosafety decision-making?
- What challenges do countries face to including socio-economic considerations in their decision-making on LMOs?

38. Following the small group discussions, Co-Chair Linnestad invited the rapporteurs from each of the small groups to summarize the discussions for the plenary. Some of the points that were raised in response to the first question included that countries' goals will differ depending on their policy choices; the goal of sustainability requires socio-economic considerations to be included in risk assessment; and socio-economic assessments have different goals, methodologies and expertise and should therefore be separate from the risk assessment. More specific goals that were identified included achieving food security; assessing the impact on the cost of inputs; encouraging research and development on sustainability issues; maintaining employment, income and livelihoods; and coordinating with policy goals in areas such as climate change and biodiversity protection.

39. On the second question, the groups identified a number challenges faced by countries in incorporating socio-economic considerations in their decision-making on LMOs including: lack of clarity on the meaning and scope of socio-economic considerations and the level at which analysis should be undertaken (e.g. household, community, country); lack of clear policy decisions or regulatory frameworks that include socio-economic considerations; limited understanding of what can and cannot be done by socio-economic assessments; lack of qualified personnel and information on methodologies; lack of cooperation between regulators working on biosafety and their colleagues in other sectors with experience conducting socio-economic assessments; lack of guidelines identifying relevant socio-economic indicators, how to weigh different socio-economic considerations and when in the regulatory process a socio-economic assessment should be performed; and a need for mechanisms to encourage public awareness and participation.

ITEM 4. CAPACITY-BUILDING ACTIVITIES, NEEDS AND PRIORITIES REGARDING SOCIO-ECONOMIC CONSIDERATIONS

40. Co-Chair Chengappa invited the Secretariat to introduce agenda item 4. The Secretariat indicated that one document had been prepared for this agenda item, a synthesis of information on capacity-building and socio-economic considerations (UNEP/CBD/BS/WS-SEC/1/4). It also indicated that the summary report on the survey on the application of and experience in the use of socio-economic considerations in decision-making on LMOs carried out by the Division of Global Environment Facility Coordination of the United Nations Environment Programme in collaboration with the Secretariat had been made available as an information document (UNEP/CBD/BS/COP-MOP/5/INF/10).

41. Co-Chair Chengappa invited Dr. Hartmut Meyer to give a presentation in his role as the Chair of the Coordination Meeting for Governments and Organizations Implementing and/or Funding Biosafety

Capacity-building Activities to provide an overview of the discussions on the issue of socio-economic considerations in this context.

42. Dr. Meyer began by summarizing activities on socio-economic considerations that took place in the context of the Biosafety Protocol between 2004 and 2011. He pointed to the mandate given to the Coordination Meeting by the Parties in decision BS-IV/16 to further consider possibilities for cooperation in identifying needs for capacity-building among Parties for research and information exchange on socio-economic impacts of LMOs and to submit any recommendation for consideration by COP-MOP 5. This was taken up at the sixth Coordination Meeting in February 2010 which recommended among other things that COP-MOP 5 establish an online forum to exchange information and experiences on socio-economic considerations as well as an *ad hoc* expert group on socio-economic considerations.

43. In the second part of his presentation, Dr. Meyer summarized the status of socio-economic considerations in countries' national biosafety frameworks (NBFs) and regulations based on information available in the Biosafety Clearing-House. He found that 56% of NBFs and regulations mention socio-economic considerations. He presented regional breakdowns of the numbers of NBFs as well as draft and enacted regulations that do and do not mention socio-economic considerations.

44. In the final part of his presentation, Dr. Meyer discussed needs and priorities for capacity-building on socio-economic considerations. He summarized the information in the BCH capacity-building needs and priorities database (see document UNEP/CBD/BS/WS-SEC/1/4) and also pointed to some publications on strategic environmental assessment and biofuels which could provide lessons and experiences relevant to biosafety.

45. Following discussion on Dr. Meyer's presentation, Co-Chair Chengappa invited Mr. Erie Tamale from the Convention Secretariat to give a presentation on the online survey on the application of and experience in the use of socio-economic considerations in decision-making on LMOs. Mr. Tamale indicated that the survey was conducted online from 14 October to 13 November 2009 in English, French and Spanish and received a very high response rate of 578 respondents from 154 countries. The survey contained 46 questions divided into four parts:

- (a) General questions;
- (b) Questions about experiences with decision-making regarding LMOs and the inclusion of socio-economic considerations in such decisions;
- (c) Questions on the opinions of 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; and
- (d) Questions on various issues including capacity-building, challenges to including socio-economic considerations in decision-making and the need for a methodological guide.

46. Mr. Tamale outlined the key survey results regarding capacity-building. He noted that approximately half the respondents indicated that their country did not have adequate capacity to perform socio-economic assessments. Mr. Tamale described how one question of the survey asked respondents to indicate their level of agreement with a number of statements. In that context, the two statements that received the highest levels of agreement were: that there is a need to build countries' socio-economic assessment capacity and that a methodological toolkit would be a good starting point to build that capacity. A large number of respondents also agreed that a methodological toolkit would assist in the inclusion of socio-economic considerations in decision-making on LMOs. Respondents identified the following three groups as a potential target audience for the toolkit: individuals responsible for evaluating assessments; individuals responsible for carrying out assessments; and decision-making

authorities. Mr. Tamale noted that these groups were quite similar to the priority target groups for capacity-building identified during the online discussion groups on socio-economic considerations.

47. Mr. Tamale concluded by noting that the priority areas for capacity-building in the field of socio-economic assessment as identified through the survey were food security, health-related impacts, impacts on market access and trade, and macro-economic impacts. He also noted that while respondents agreed that a methodological toolkit would be useful, the information to be included in the toolkit needs investigation.

48. Following questions and discussion on Mr. Tamale's presentation, Co-Chair Chengappa invited Dr. Falck-Zepeda to give a presentation on experiences of the International Food Policy Research Institute (IFPRI) in capacity-building on socio-economic considerations. Dr. Falck-Zepeda explained that socio-economic impact assessments examine the benefits, costs and risks from the adoption and use of a technology. They can focus on a diverse range of groups (e.g. households, farms, communities, industries) and factors (e.g. gender, health, age, biodiversity) and may be done before (*ex ante*) or after (*ex post*) the adoption of a technology. He also said the assessments compare the effects of an intervention against an alternative (a counterfactual).

49. Dr. Falck-Zepeda addressed aspects of working towards a conceptual framework on socio-economic considerations. He suggested that it is prudent for countries to clearly describe their rationale for including socio-economic impact assessments in decision-making and to conduct a regulatory impact assessment to evaluate the costs and benefits of including such assessments and how these costs and benefits are distributed. He also stated that inclusion of socio-economic assessments in decision-making should be done with clear decision-making rules and standards.

50. Dr. Falck-Zepeda described a study conducted by IFPRI of 187 peer reviewed studies examining the economic impacts of transgenic crops. He also described some of the *ex ante* and *ex post* studies undertaken by IFPRI and its partners. *Ex ante* studies included examination of black sigatoka-resistant bananas and Bt cotton in Uganda, Bt rice in a number of Asian countries, Bt cotton in West Africa and various LM crops in Indonesia and the Philippines. *Ex post* studies were done on Bt maize in the Philippines and Honduras and Bt cotton in Colombia.

51. Dr. Falck-Zepeda noted a number of different issues for consideration in regulatory design such as the nature of the inclusion of socio-economic considerations in a regulatory system; the scope, approach and trigger for conducting an assessment; determining when assessments may be needed and how they should be conducted. He listed a number of attributes of a functional biosafety regulatory process, i.e. it should be transparent, feasible, efficient, fair, have explicit rules and decision-making standards and should maximize benefits. He noted some potential implications of including socio-economic considerations in decision-making, for example that the cost of compliance with regulatory requirements would increase; the length of time needed to fulfill the regulatory requirements may increase; there may be impacts on national innovative capacity; and that investment in research and development may be constrained.

52. In the final section of the presentation, Dr. Falck-Zepeda considered options for functional capacity-building on socio-economic considerations and outlined three approaches to capacity-building for different target groups of countries. He expressed the view that capacity-building should address existing needs and be avoided when it is not required. He noted that the approach to capacity-building on socio-economic considerations should be systematic, anticipatory, long-term and should be coordinated, especially with risk assessment.

53. Following discussion on Dr. Falck-Zepeda's presentation, Co-Chair Chengappa invited Dr. Dorothy Mulenga, Policy and Advocacy Officer with the Regional Agricultural and Environment Initiatives Network-Africa (RAEIN-Africa), to make a presentation entitled "Towards development of a

socio-economic impact assessment guideline of LMOs: RAEIN-African experience”. Dr. Mulenga indicated that most countries of the Southern African Development Community (SADC) have provided for socio-economic considerations in their national biosafety frameworks but they have taken different approaches to paragraph 1 of Article 26 of the Protocol, ranging from narrow to liberal interpretations. From RAEIN-Africa’s experience, she noted that there is a lack of clarity on how to operationalize Article 26, paragraph 1, including:

(a) A lack of international guidelines or standards on socio-economic assessments that meet the provisions of the Biosafety Protocol and relevant international trade obligations;

(b) A lack of clarity on what socio-economic issues can be considered in the context of Article 26; and

(c) A lack of methods and tools to assess some of the issues.

54. Dr. Mulenga outlined the steps taken by a RAEIN-Africa project to develop a socio-economic impact assessment guideline for LMOs. She explained that the purpose of the Guideline is to serve as a tool to enable evidence-based decision-making in biosafety. She stated that the Guideline seeks to facilitate an understanding of and provide guidance for the process involved in socio-economic impact assessments of LMOs.

55. She indicated a number of questions that should be answered by a socio-economic impact assessment including: what socio-economic impacts the technology may have; whether these impacts are positive or negative; what conditions may make a community more vulnerable and which groups within a community would be most vulnerable; how likely any adverse impacts are to occur; and if the impacts occur, what magnitude of change are they likely to cause. She also noted that assessments should be case-by-case and context- and location-specific.

56. Dr. Mulenga concluded by indicating a number of lessons learned by RAEIN-Africa in developing the socio-economic impact assessment Guideline. These included the low levels of awareness of LMOs and their potential benefits and impacts; that strongly embedded socio-cultural practices and survival strategies make analysis of issues complex; challenges with the reliability of data; that differing approaches to and interpretations of Article 26(1) of the Protocol are difficult to bring together; and there is a need for capacity-building on socio-economic impact assessments.

57. Following the discussion on Dr. Mulenga’s presentation, Co-Chair Linnestad invited the participants to break into regional groups to discuss capacity-building on socio-economic considerations. Specifically, he invited the groups to identify criteria that could be used to prioritize capacity-building needs. He also asked the groups to prioritize specific capacity-building needs from the perspective of each region and to identify options for cooperation to meet those needs. Co-Chair Linnestad also indicated that one of the points highlighted during the online activities on socio-economic considerations was the importance of conceptual clarity on the issue of socio-economic considerations in order to improve the effectiveness of capacity-building activities in this field. He thus invited the groups to discuss how to develop conceptual clarity on socio-economic considerations in decision-making on LMOs.

58. Following the regional group discussions, Co-Chair Linnestad invited the rapporteurs from each of the groups to report to plenary. The participants from Asia reported that their group recognized that capacity-building for socio-economic considerations was not yet a priority for some countries in the region. It also noted that for countries that have already provided for socio-economic considerations in their legal systems and are looking to implement these provisions, capacity-building on tools and methodologies, criteria for assessment and effective administrative structures would be useful. The issues

of public awareness and participation and their links to socio-economic considerations were also raised. The Asian participants also noted that there are different contexts and situations in the region. In this regard, it was suggested that South-South cooperation, cooperation among like-minded countries across regions as well as regional workshops may be useful.

59. Regarding the development of conceptual clarity, the Asia group noted that there is tension between narrow and broad interpretations of the parameters set by paragraph 1 of Article 26 of the Biosafety Protocol. They also noted that national frameworks may be intended to meet other objectives defined by national needs and priorities. The group recognized that the level of conceptual clarity varies from country to country, depending on their national situations. The group emphasized that for countries already taking socio-economic considerations into account in their decision-making, there is a need for capacity-building to build conceptual clarity within and across existing institutions and to enable national policy coherence.

60. Participants from countries in the Western Europe and Others Group (WEOG) and Central and Eastern Europe (CEE) noted that first and foremost, there is a need to agree to a legal concept of socio-economic considerations and its scope and aims in a country. Thereafter, it would be possible to identify capacity-building needs that are directly linked to the legal requirements. They noted, however, that the Biosafety Protocol does not provide a clear statement of socio-economic considerations. They suggested a two-step approach as the way forward. The first step would be to develop conceptual clarity by taking decisions on the scope and aims of socio-economic considerations. This should involve further discussions under the Biosafety Protocol (for example, through an *ad hoc* technical experts group) as well as national consultations, research cooperation and information exchange. This would also involve countries deciding whether to take a narrow or broad approach to paragraph 1 of Article 26 of the Protocol.

61. According to the WEOG and CEE participants, the second step would be the selection of issues and priorities by countries. They noted in this regard that guidelines and toolkits are helpful; national stakeholder consultations would be necessary for gathering information; and research and information exchange should continue. They identified a number of steps that would be necessary to assess capacity-building needs including stock-taking of existing national experience in including socio-economic considerations in environmental decision-making; deciding which socio-economic issues are of relevance for the decision-making system and for specific cases; choosing the appropriate means of capacity-building; and creating the interface between socio-economic considerations and the environmental and health risk assessment of the LMO.

62. The WEOG and CEE group also identified a number of criteria for prioritising capacity-building needs including the links to: the legal framework, the findings of national stakeholder consultations, national goals and the needs of vulnerable groups. They also suggested collaboration with regional organisations that have experience with socio-economic considerations such as the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO).

63. The participants from Latin America identified two criteria that could be used to prioritize capacity-building needs: (i) the urgency and priorities expressed by Parties in their capacity-building needs assessments; and (ii) the balance and complementarity between the generation of information on the one hand and implementation of socio-economic considerations on the other. The group discussed some of the categories of capacity-building needs related to socio-economic considerations as contained in the capacity-building needs assessment questionnaire (see UNEP/CBD/BS/WS-SEC/1/4, table 1). They also identified more specific capacity-building needs regarding training in socio-economic considerations relating to LMOs (such as socio-economic considerations in centres of origin and genetic diversification, socio-economic considerations related to co-existence, and the need for quantitative and

qualitative assessment methodologies) and regarding the national system for taking into account socio-economic considerations in decision-making regarding LMOs (e.g., adaptation of decision-making approaches to LMOs.)

64. Regarding the question of how to develop conceptual clarity on socio-economic considerations in decision-making on LMOs, the participants from Latin America suggested that this could be done through analysing different case studies, identifying relevant socio-economic parameters and developing a description of socio-economic considerations in the context of the Biosafety Protocol. They had different suggestions as to who could carry out this work. One suggestion was to convene an *ad hoc* technical experts group so that the work would incorporate the perspectives of different regions and stakeholders. The other suggestions were to engage a consultant or to use online discussions.

65. The participants from Africa identified two priorities for capacity-building in this area: training and the integration or relationship between socio-economic considerations and risk assessment. They stated that a matrix of institutions versus disciplines could be developed to prioritize capacity-building needs. They called for regional cooperation at the political, government/regulatory and institutional levels.

66. On the question of how to develop conceptual clarity on socio-economic considerations, the participants from Africa suggested defining a set of questions for which the answers are needed. They identified the following as examples of such questions: is there a need for the LMO, can it solve a problem, is it better than alternative products, does it impact employment, does it cause problems for existing production processes, does it impact traditional practices and cultural values, and what are the impacts of intellectual property rights protection?

ITEM 5. CONSIDERATION OF THE CONCLUSIONS OF THE WORKSHOP

67. Co-Chair Chengappa invited the Secretariat to introduce the agenda item. The Secretariat presented the document prepared for this agenda item, namely a synthesis of views on next steps regarding socio-economic considerations (UNEP/CBD/BS/WS-SEC/1/5). The document provided a synthesis of the views expressed during the online discussion groups and the regional online real-time conferences regarding the next steps in addressing the issue of socio-economic considerations, including how operational objective 1.7 of the Strategic Plan for the Biosafety Protocol should be implemented and key issues for deliberation at the sixth meeting of the Parties in the context of socio-economic considerations.

68. Co-Chair Chengappa noted that during the online discussions and the workshop on socio-economic considerations, there had been a number of suggestions for further work on this issue that should be considered by the Parties to the Biosafety Protocol. He invited the participants to express their views on next steps that should be taken on this issue at the national, regional and international levels and how to implement operational objective 1.7 of the Strategic Plan.

69. A number of points were raised during the discussion that followed. These included:

- (a) The need for conceptual clarity on socio-economic considerations;
- (b) The need to provide guidance on socio-economic considerations further to operational objective 1.7 of the Strategic Plan, including suggestions that:
 - (i) Such guidance should be flexible enough to accommodate the situations of different countries but should be supplemented by more specific information through case studies, for example;

(ii) The guidance could take the form of guiding questions for evaluating different socio-economic elements, terms of reference for conducting socio-economic assessments, or guidelines;

(c) The need for continued information exchange; and

(d) Possible means to carry out further activities on socio-economic considerations would be to engage a consultant or to establish an ad hoc technical expert group. The latter approach would ensure regional representation and the involvement of stakeholders.

70. Co-Chair Chengappa thanked the participants for their suggestions. He noted that a number of ideas on possible next steps on this issue had been raised and he indicated that he and his co-chair would take these views and prepare draft conclusions for review by the group.

71. Accordingly, during the last session of the workshop, a document with draft conclusions and next steps was circulated. In opening the floor for comments on the document, Co-Chair Linnestad recalled that the outcomes of the workshop would form an important contribution to the deliberations to take place at the sixth meeting of the Parties, in October 2012. He noted that the conclusions were not intended to summarize all the points raised during the discussions but to highlight the key messages that emerged during the workshop.

72. The participants made a number of comments on and suggestions for the draft conclusions. Co-Chair Linnestad indicated that a revised version of the conclusions, incorporating the comments made during the last session would be included in the final report of the workshop (see annex I below).

73. The participants also completed an evaluation of the workshop. The results of the evaluation are summarized in annex II below.

ITEM 6. CLOSURE OF THE WORKSHOP

74. Following the customary exchange of courtesies, Co-Chair Linnestad closed the workshop at 4 p.m. on 16 November 2011.

*Annex I***WORKSHOP CONCLUSIONS AND SUGGESTIONS FOR NEXT STEPS**

1. Participants in the workshop noted that paragraph 1 of Article 26 is not mandatory but recognized that several Parties need further guidance in order to implement their policy choice to include socio-economic considerations.

A. *Exchange and analysis of information on socio-economic considerations*

2. Participants in the workshop:

(a) Noted that:

- (i) Some countries have already included socio-economic considerations as a recommendation or requirement in their policy- and decision-making frameworks;
- (ii) There are divergent views on the practicability of including socio-economic considerations in decision-making on LMOs;
- (iii) Tools and methodologies for socio-economic assessments have already been developed and used in other contexts and may be adapted and applied to biosafety decision-making;
- (iv) There is also a need to develop new methodologies specific to LMOs, focusing in particular on social assessments and going beyond methods for assessing economic considerations;
- (v) Socio-economic assessment processes should be participatory, transparent, strategic and cost-effective and should include pre-defined steps;
- (vi) There are divergent views on whether consideration of socio-economic issues should be done on a case-by-case basis by LMO and the context of introduction or whether socio-economic assessments may be performed at a more general level, e.g. on the basis of categories of introduced characteristics (such as insect resistance, herbicide resistance, etc.);

(b) Recognized the need to:

- (i) Improve understanding of the socio-economic impacts associated with LMOs;
- (ii) Draw on existing experience in other fields that implement social and economic impact assessments at the local, national and regional levels;
- (iii) Develop conceptual clarity on socio-economic considerations;
- (iv) Raise awareness of biosafety among practitioners in relevant disciplines (including anthropology, sociology and economics) as it relates to their respective fields;

- (c) Recognized the importance of:
 - (i) A multi-disciplinary and inter-disciplinary approach to socio-economic considerations;
 - (ii) Policy-makers clearly defining, through stakeholder consultations, the goals and objectives for taking socio-economic considerations into account in order to establish a framework for conducting socio-economic assessments;
- (d) Considered that:
 - (i) While the consideration of socio-economic issues associated with LMOs and the determination of factors that may need to be considered are country- or LMO-specific, it may still be useful to identify some minimum elements that could be relevant across countries or LMOs;
 - (ii) For a system that provides for the inclusion of socio-economic considerations, it should include assessments both prior to and after the introduction of an LMO (ex ante and ex post assessments).

B. *Capacity-building activities, needs and priorities regarding socio-economic considerations*

3. Participants in the workshop:

- (a) Recognized:
 - (i) The importance of having conceptual clarity on socio-economic considerations in order to design and implement appropriate and effective capacity-building activities in this regard;
 - (ii) The need to identify existing methodologies and develop new ones for the assessment of socio-economic considerations, particularly regarding social impacts and impacts on indigenous and local communities;
 - (iii) That, at the international level, there are other existing tools on socio-economic impact assessment that may be relevant and useful;
 - (iv) The need for stock-taking of existing capacity and resources and assessing capacity-building needs;
 - (v) The need for provision of guidance, containing minimum common elements, regarding socio-economic considerations;
 - (vi) The usefulness of continuing to share experiences, for example through case studies, and to cooperate in building capacities regarding socio-economic considerations;
 - (vii) A continued need for research and information exchange;
- (b) Noted that, for some countries, capacity-building on socio-economic considerations is not required or not a priority, given their domestic situation.

C. *Next steps*

4. The participants acknowledged that further work is needed on socio-economic considerations in order to help Parties that have already taken or wish to take measures to consider socio-economic impacts of LMOs in their decision-making.

5. In that regard, the following suggestions were made:

(a) Any further work should take into account existing information, tools, methodologies, experience, expertise and capacities available in other relevant sectors;

(b) Consideration should be given to the nexus of socio-economic assessment and risk assessment;

(c) The interests of stakeholders as well as indigenous and local communities need to be taken into account.

6. The following actions were suggested as possible next steps:

(a) Undertake further research and studies to fill knowledge gaps and to identify the specific socio-economic issues related to LMOs;

(b) Take stock of:

(i) Existing institutional frameworks, legislation and policies with provisions on socio-economic considerations;

(ii) Capacity-building activities related to biosafety and socio-economic considerations;

(iii) Existing expertise; and

(iv) Other policy initiatives concerning social and economic impact assessments, to develop a global overview;

(c) Continue exchanging information, e.g. through online discussions, and sharing experiences through the analysis of different case studies on socio-economic considerations;

(d) Develop a framework to provide conceptual clarity on socio-economic considerations;

(e) Develop general guidelines that provide minimum common elements that could be used in the consideration of socio-economic impacts of LMOs while providing flexibility to take into account the situations in different countries;

(e) Continue the work on socio-economic considerations through the establishment of an *ad hoc* technical experts group, which may undertake the following tasks:

(i) Develop conceptual clarity on socio-economic considerations;

(ii) Compile and review information on socio-economic impacts of LMOs, including information available on specific cases;

- (iii) Develop guidelines on socio-economic considerations in the context of operational objective 1.7 of the Strategic Plan (decision BS-V/16), that, among other things, identify key questions to be answered in considering socio-economic impacts of LMOs and are supplemented by more specific information through case studies.

*Annex II***WORKSHOP EVALUATION**

1. At the end of the workshop, participants were asked to complete a workshop evaluation form. They were asked to rate, on a scale of 1 to 6, the usefulness of the workshop regarding: (a) the exchange and analysis of information on socio-economic considerations; and (b) capacity-building activities, needs and priorities regarding socio-economic considerations. The participants were also invited to provide an overall assessment of the workshop in terms of how well it was organized and conducted and the extent to which it had met their expectations. The results of the evaluation are summarized below.

Item	Average rating (1-6)	Rating	Level of satisfaction
A. Exchange and analysis of information on socio-economic considerations			
<i>How useful has the workshop been in:</i>			
(i) Improving your understanding of the Cartagena Protocol on Biosafety?	5	Very Useful	75%
(ii) Improving your understanding of the use of socio-economic assessments in areas other than biosafety?	4	Useful	67%
(iii) Improving your understanding of the use of socio-economic assessments in agriculture in general?	4	Useful	70%
(iv) Improving your understanding of national experiences with socio-economic considerations in decision-making on LMOs?	5	Very Useful	81%
B. Capacity-building activities, needs and priorities regarding socio-economic considerations			
(i) Improving your awareness and understanding of different capacity-building activities concerning socio-economic considerations in decision-making on LMOs?	5	Very Useful	76%
(ii) Prioritizing capacity-building needs in this area?	4	Useful	73%
(iii) Identifying options for cooperation on capacity-building for socio-economic considerations in your region?	4	Useful	70%
C. Overall workshop assessment:			
(i) How useful was the workshop in identifying next steps that may be taken on socio-economic considerations?	5	Very Useful	82%
(ii) How useful were the background synthesis documents from the real-time conferences, online discussion groups and submissions, in facilitating small group discussions?	5	Very Useful	83%
(iii) Has the workshop met your expectations?	5	Very Useful	85%
(iv) How useful was the workshop for you as an individual?	5	Very Useful	85%
(v) How well organized was the workshop?	5	Very Useful	87%
(vi) How did you find the balance between presentations and the small group discussions?	4	Useful	73%

Item	Average rating (1-6)	Rating	Level of satisfaction
(vii) Overall, how would you rate the workshop?	5	Very Useful	82%
Overall appreciation	5	Very Useful	78%

2. In the written comments, a number of participants considered the following to have been the most helpful parts of the workshop:

(a) The presentations. Comments included that there was a great choice of presentations and that the presentations were very useful;

(b) The exchange of knowledge, experiences and views among countries and the opportunity to meet the other participants, engage with them both formally and informally and have the space and time to gain insight into different perspectives on the issue of socio-economic considerations;

(c) The discussions on next steps and building common ground on future directions;

(d) Building capacity to grasp the diversity of stakes and contexts of the socio-economic evaluation of LMOs; and

(e) The synthesis documents and other background information made available for the workshop.

3. Some of the participants identified the following as having been the least helpful aspects of the workshop:

(a) The small group discussions. Comments included that there was insufficient time allocated to the small groups to address the guiding questions and the wording of the questions was not always clear;

(b) Limited perspectives from countries that have decided not to include socio-economic considerations in their decision-making;

(c) Repetition of elements presented in the synthesis documents provided before the workshop; and

(d) The discussion of the draft conclusions and next steps. Some felt that too much time was spent on this item while others would have wished to have been able to formulate more concrete recommendations.

Annex III

WORKSHOP PROGRAMME

Monday <i>14 November 2011</i> 9 a.m. – 10 a.m.	<i>Agenda item:</i> 1. Opening of the workshop.
10 a.m. – 10.30 a.m.	<i>Agenda item:</i> 2. Objectives and programme for the workshop.
10.30 a.m.– 10.45 a.m.	Coffee/Tea Break
10.45 a.m. – 1 p.m.	<i>Agenda item:</i> 3. Exchange and analysis of information on socio-economic considerations: - Presentation on socio-economic assessments in fields other than biosafety; - Presentation on socio-economic assessments in agriculture; - Breakout group discussions.
1 p.m. – 2 p.m.	Lunch Break
2 p.m. – 3.30 p.m.	<i>Agenda item 3 (continued):</i> - Reports from breakout groups; - Presentation on socio-economic considerations in decision-making on LMOs: experiences from France; - Presentation on socio-economic considerations in decision-making on LMOs: experiences from Bolivia.
3.30 p.m. – 3.45 p.m.	Coffee/Tea Break
3.45 p.m. – 5.30 p.m.	<i>Agenda item 3 (continued):</i> - Presentation on socio-economic considerations in decision-making on LMOs: experiences from India; - Presentation on socio-economic considerations in decision-making on LMOs: experiences from Norway. - Breakout group discussions; - Reports from breakout groups.
Tuesday <i>15 November 2011</i> 9 a.m. – 10.45 a.m.	<i>Agenda item:</i> 4. Capacity-building activities, needs and priorities regarding socio-economic considerations: - Perspective from the Chair of the Coordination Meeting for Governments or Organizations Implementing and/or Funding Biosafety Capacity-Building Activities; - Findings of the Online survey on the application of and experience in the use of socio-economic considerations in decision-making on LMOs; - Plenary discussion.

10.45 a.m. – 11 a.m.	Coffee/Tea Break
11 a.m. – 1 p.m.	Agenda item 4 (<i>continued</i>): <ul style="list-style-type: none"> - Presentation on experiences with capacity-building activities on socio-economic considerations: experiences from IFPRI; - Presentation on experiences with capacity-building activities on socio-economic considerations: experiences from RAEIN-Africa.
1 p.m. – 2 p.m.	Lunch
2 p.m. – 3.30 p.m.	Agenda item 4 (<i>continued</i>): <ul style="list-style-type: none"> - Regional breakout groups.
3.30 p.m. – 3.45 p.m.	Coffee/Tea Break
3.45 p.m. – 5 p.m.	Agenda item 4 (<i>continued</i>): <ul style="list-style-type: none"> - Regional breakout groups (<i>cont.</i>); - Reports from breakout groups; - Plenary discussion.
Wednesday 16 November 2011	<i>Agenda item:</i>
9 a.m. – 10.30 a.m.	5. Consideration of the conclusions of the workshop: <ul style="list-style-type: none"> - Introduction; - Brainstorming on next steps.
10.30 a.m. – 10.45 a.m.	Coffee/Tea Break
10.45 a.m. – 12.00 p.m.	Agenda item 5 (<i>continued</i>): <ul style="list-style-type: none"> - Brainstorming on next steps (<i>continued</i>).
12.00 p.m. – 2.00 p.m.	Lunch
2 p.m. – 3.30 p.m.	Agenda item 5 (<i>continued</i>): <ul style="list-style-type: none"> - Summary of workshop discussions; - Consideration of workshop conclusions.
3.30 p.m. – 4 p.m.	<i>Agenda item:</i> 6. Closure of the workshop.

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