
Report on Group Activity 1:

Case Study Exercise on Integrated Assessment of Trade-related Policies

*UNEP-UNCTAD CBTF Training Workshop in Integrated Assessment
for African Countries*

19-20 July 2004 in Nairobi

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Short Summary of the Group Activity

Case study exercise on integrated assessment

This exercise was based on the country projects on integrated assessment of trade-related policies that were supported by UNEP. The projects have been published in 2002 and summarized to serve as case studies for this exercise. In the context of this training, they were used as samples for study purposes only and did not want to provide any statement on the policies of the countries involved.

The aim of the exercise was to enable participants

- To understand for what purposes an integrated assessment can be undertaken
- To understand how integrated assessment is carried out, in terms of methods and participatory process, and
- To gain some perception of what might be involved in the process in their country or region.

The trainers explained objectives and gave the instructions for group work. The participants could sign up for the case study they preferred to work on and received the relevant case study and questions for group work. In total, four case studies were available. They chose to work on case studies 2 (China), 3 (Nigeria) and 4 (Senegal).

The groups worked step-by step on the case study using the questions provided. The first set of question was answered after session 1 and 2, the second set after session 3 and 4. For each set of questions the groups prepared a presentation. Back in the plenary, each group briefly presented the results of their discussion. They spent three hours to answer the first and another three hours to answer the second set of questions (six hours in total), including presentations by participants.

The following materials were distributed to the participants:

- Case study synopsis 2 to 4
- Questions for group discussion
- Flipchart paper and markers

Summary of main suggestions by participants:

- Clarify concepts of ownership and initiator of Integrated assessment (separate ownership and initiator)
- Include examples from case studies in the presentations
- Make sure there is a chairman for each group to facilitate the discussion and provide more time for group discussion.
- Enrich information provided in the case studies so that participants can better answer the questions
- Explain that studies could be conducted in all kinds of sectors, including the service sector (Cover more sub-sectors in the case studies: livestock, water, wildlife, industrial product etc.)
- Include more case studies / more practical group work

Annex 1: Handouts to participants

Case Study 2

Integrated assessment of the impact of trade liberalization on the cotton sector in China (GA 1-2)

This study was undertaken before China's entry into the World Trade Organization (WTO) in September 2001, and examined the economic, social and environmental impacts of projected agricultural imports with particular focus on the cotton sector. The main objectives of the assessment were to propose policy recommendations for the sustainable management of the cotton industry and to strengthen China's negotiating capacity in subsequent rounds of trade talks.

China is a huge agricultural country, and large quantities of chemical fertilizers, pesticides, plastic film and irrigation water are used in agricultural production. China is also one of the largest cotton producing countries in the world, with around 300 million people working in this sector. From 1978 to 1984, China's cotton output increased steadily, and reached a historic high of 6.26 million metric tons in 1984. Afterwards cotton output fluctuated between 4.1 - 5.7 million metric tons, but dropped to 3.8 million metric tons in 1999.

The policy assessed in China was the projected impact of import liberalization rather than export expansion. The study examined the impact of tariff rate quotas (TRQs)¹ on the production and import of selected agricultural products, focusing on the cotton and related sectors (such as textiles and clothing).

As the study was based on theoretical projection, two assumptions were made. First, it was assumed that the bilateral trade concessions given by China to the US (under the US-China Bilateral Agricultural Agreement of 1999) would have to be extended on a most favoured nation (MFN)² basis to all member countries of the WTO subsequent to China's accession. Second, it was assumed that the entire TRQ would be imported, irrespective of whether the imports are competitive with domestic products.

The prospect of China joining the WTO is expected to bring both opportunity and challenge in the agricultural sector generally and in the cotton sector in particular. While increased agricultural exports are expected to bring opportunity, there are major concerns about the expected influx of agricultural imports in the early period of China's accession to the WTO (due to TRQs), which could have huge impacts on the domestic market.

Thus, the objectives of the integrated assessment included:

- (1) enhancing the country's understanding of the implications of WTO membership,
- (2) promoting trade liberalization of the cotton sector in a sustainable manner, and
- (3) enhancing its negotiating capacity in future rounds of trade talks.

¹ For goods subject to a TRQ, a specified quantity of import (a quota) may enter at a low tariff rate and additional imports are assessed at a higher tariff.

² MFN means that every time a member state improves the benefits that it gives to one trading partner, it has to give the same "best" treatment to all other WTO members, so that they remain equal.

In particular the study aimed to assess the potential environmental, social and economic impacts of China's trade liberalization in the cotton sector and to formulate a proposed policy package designed to mitigate the identified negative impacts and maximize the positive ones. The integrated assessment process also aimed to enhance coordination between related national entities, to increase national expertise and to enhance national capacity for international trade policy-making and research.

The methodology used in the study was a Jiangsu Agricultural Policy Analysis (JAPA) model with partial equilibrium and econometric sub-models. (The JAPA model was designed only for the Jiangsu province. So for the purposes of this study, it was necessary to divide the total TRQs into the different provinces of China according to production share.) The study forecasted for 2002 the potential effects of importing three selected commodities (wheat, corn and cotton) on the basis of current consumption patterns and utilization of resources. An economic valuation was made of the simulated impacts and finally a cost-benefit analysis (CBA) was conducted by comparing the total costs and total benefits of the impacts of the TRQs for the three agricultural commodities listed above.

The results of the model scenario analysis showed that the large number of agricultural imports predicted to enter the Chinese market in this period were likely to provoke significant shifts in overall crop production structures. While these agricultural imports could help China to solve shortages in some agricultural commodities, they could also cause reduced cultivation of some crops and output decrease (of wheat corn and cotton). The large agricultural imports could cause price decreases in all agricultural products and cause farmers to increase production of other products, causing a producer surplus. The last two impacts might create a decrease in income for farmers.

It was projected that as a side effect of the decrease in cultivated land, agricultural employment would also decrease. This could lead to a situation where, after adjustment of the agricultural production structure, the utilisation rate of cultivated land would decrease and valuable land would lie waste or be used for non-agricultural purposes. This could lead to increased poverty and problems of social instability.

Reduced cultivation is expected to have a positive environmental impact due to the reduced application of chemical fertilizers and pesticides, but could also have a negative impact because valuable cultivated land may be lost and used for non-agricultural purposes such as city extension, industry and building.

The CBA estimated that there would be a net cost of importing the three commodities of 1,303.31 million RMB (157 million US \$)³. However, this estimated net cost applied only to the agricultural sector in Jiangsu.

For the cotton sector, further specific problems were identified. An increase in imports of cotton due to trade liberalization could seriously affect domestic cotton production and sales. China's WTO accession could also increase uncertainty for Chinese textile and clothing exports and could cause enormous fluctuations in the production and price of textiles. As the cotton sector is closely linked to the textile industry, import liberalization in the textile sector will also affect the cotton sector. In accordance with the impacts identified for the three agricultural products, the

³Renminbi.

integrated assessment suggested that there would be a decrease in land cultivated for cotton and cotton output, a decrease in the price of cotton in the domestic market, a decrease of agricultural employment as well as the income of cotton farmers. The decrease of cotton farmer's income could increase poverty in rural areas, and might cause social instability.

On the basis of the integrated assessment, a series of policy recommendations was proposed to mitigate the negative and enhance the positive impacts.

These included:

- recommendations on how to increase the competitive advantages of Chinese cotton,
- on how to maintain the basic balance between supply and demand, and
- how to stimulate sustainable management of the cotton sector.

An increase in the competitive advantage of Chinese cotton could be achieved by supporting agriculture with 'green box' policies,⁴ by promoting new cotton variety breeding and 'special purpose' cotton production, and by establishing cotton production cooperatives (or sector associations). A basic balance between supply and demand could be achieved by completing the multi-channel cotton marketing system.

Measures could include:

- the promotion of lateral cooperation among different cotton marketing entities,
- the promotion of cotton production to order,
- the improvement of the cotton wholesale market, and
- the establishment of a textile exporter association and an agricultural consulting system.

Sustainable management in the cotton sector could be promoted by:

- taking measures to decrease the applied quantity of chemical fertilizers,
- establishing a pest and disease prevention service and banning the production, marketing, and application of all highly toxic pesticides.

In addition, an environmental pollution tax could be introduced, the efficiency of irrigation could be increased and the production of organic cotton could be further promoted.

In making these recommendations, it was recognised that different regions have different natural conditions and different degrees of dependency on unsustainable production methods. Therefore, in transition to developing sustainable cotton production, there should be alternative methods to choose from. The Chinese Government also has to consider parallel policy objectives such as increasing income, improving equality, enhancing technology and reducing financial constraints.

⁴ In order to limit the trade distortions caused by domestic agricultural support policies, the AoA requires countries to quantify all domestic support deemed to have a distortionary effect on trade. This is known as the Aggregate Measure of Support (AMS). 'Green box' policies are policies that are not deemed to have a major effect on production and trade.

Follow-up

To assist China's national institutions to prioritize and implement the policy recommendations, UNEP is supporting a follow-up project. The main objectives of the follow-up project are to enhance the capacity of policy makers and the private sector to develop economic instruments to promote sustainable management of the cotton sector.

To initiate the implementation phase of the project, the Agricultural Economical Research Institute of the Nanjing Agricultural University (AERI), which has also been the main national institution in China responsible for undertaking the study, convened a national workshop involving all the stakeholders who contributed to the first phase of the country project.

Participants were invited from:

- Ministry of Agriculture and Ministry of Trade,
- universities,
- farmers,
- the private sector, and
- NGOs.

In the follow-up of the workshop, the Chinese State Environment Protection Administration (SEPA) in cooperation with the AERI, prepared an Action Plan and have decided to start implementing the first measures.

These include:

- lowering the use of chemical fertilizers,
- improving management of genetically modified cotton,
- banning the use of toxic fertilizers, and
- encouraging the efficient use of pesticides.

The scientific expertise of AERI will contribute to implementing the last two measures. A detailed report on the implementation phase is being developed.

Further, as part of its third round of country projects on integrated assessment, UNEP has launched a new project in cooperation with SEPA on trade liberalization in the agricultural sector. This project seeks to enhance the country's understanding of the environmental, social and economic implications of implementing the WTO Agreement on Agriculture (AoA), with specific focus on the rice sector. It also aims to contribute to formulating China's positions and a negotiating mandate with regard to the ongoing WTO negotiations on agriculture. The objective of the country project is again to formulate policy response packages to correct identified negative impacts of liberalized trade and to maximize the positive ones. The methodologies applied for the integrated assessment will be similar to those used in the first country study.

Annex 1: Handouts to participants

Case Study 3

Integrated assessment of the impact of trade liberalization on the cocoa and rubber sectors in Nigeria (GA 1-3)

This study examined the effects of macroeconomic policy reform, including trade liberalization and export promotion, on the export crop sector of Nigeria, with particular focus on cocoa and rubber. The study indicated that the advantages of trade liberalization should be weighed against the possible environmental and social costs of increased production.

Agriculture is the mainstay of Nigeria's economy, even though crude oil provides the largest proportion of revenue to the country. It contributes significantly to the country's GDP, export earnings and food availability. Cocoa, rubber, fish and shrimps, and cotton are Nigeria's major agricultural export commodities, with cocoa and rubber being the most relevant.

This study aimed to assess the impacts of trade liberalization and trade-related policies on the environment, and consider the linked social and economic effects focusing on the cocoa and rubber sectors. It examined the impact of Nigeria's trade policies through assessment of soil degradation, impact on farm size, the effects on rubber and cocoa output, impacts on profitability, social impacts and the overall environmental impacts. From this assessment a comprehensive policy package was produced, supported by detailed recommendations and plans for government intervention.

Six policy regimes were identified in Nigeria:

- (1) before and during the civil war (1960 – 1970);
- (2) post-war reconstruction (1970-1973);
- (3) the oil boom (1974 – 1979);
- (4) the austerity period (1980 – 1985);
- (5) period of structural adjustment (SAP) (1986 – 1993); and
- (6) the post structural adjustment period (1994 – 2000).

The trade liberalization policy came into being during the SAP period. Trade reforms in the agricultural sector were aimed at

- expanding the export capacity of the sector through increased domestic production of export crops,
- increased domestic production of tradable semi-manufactured goods from agricultural raw materials,
- increased import of agricultural inputs such as fertilizers, agrochemicals, farm implements, farm machinery,
- increased import of agro-industrial inputs, and
- a relative increase in resource allocation from non-tradable to tradable crops in agriculture.

A number of institutions and individuals were involved in the implementation of the study. The University of Agriculture (UNAAB) in Abeokuta was the main national institution responsible for undertaking the study.

In June 2000, a National Stakeholders' Workshop comprising about 55 participants took place to sensitize the public and launch the study. A National Steering Committee was formed to guide and focus the study. Thereafter, a sectoral inputs workshop, was convened by the National Steering Committee to design procedures and methodology. The stakeholders that participated in the workshop included international groups and agencies, national and regional government, industry representatives, workers, consumer groups and minorities.

A range of methodologies was used and was based on secondary and primary data collection. Secondary data were collected from the public and private sectors including

- the Cocoa Research Institute of Nigeria (CRIN),
- the Rubber Research Institute of Nigeria (RRIN),
- the Nigerian Institute for Social and Economic Research,
- the National Tree Crop Development Unit (NTCDU),
- the State and Federal Ministries of Agriculture and Natural Resources, Rural Development, Environment, Finance and Economic Planning,
- the Central Bank of Nigeria (CBN),
- the Federal Office of Statistics (FOS) and
- the Association of Cocoa Exporters (ANCE).

Primary data was collected using the Rapid Rural Appraisal (RRA) methodology. Analysis was made using two regression analysis models – an output response model and a pesticide demand model. A graphical and statistical analysis was performed to reveal any trends. Finally, a cost-benefit (CBA) was performed to value the overall environmental impacts.

Study findings indicated that economic liberalization had no perceptible effect on the environment in the case of cocoa production. This appears to be because the response of farmers to the incentives created was to rehabilitate farms abandoned during SAP rather than to expand the cultivated area.

In the case of rubber, however, there was an increasing trend for new areas to be planted. In addition, over-tapping of rubber (slaughter tapping) led to the early death of trees, which were not replaced, thus reducing soil cover. This had negative consequences for nutrient cycles, soil erosion and the ecosystem in general.

The economic impacts identified included:

- an improved contribution of agriculture to Nigeria's gross domestic product,
- improved opportunities for unskilled and semi-skilled people to work on the cocoa and rubber farms,
- a reduced rate of abandonment of old cocoa farms thereby leading to a more productive use of natural resources, and
- higher incomes for crop farmers.

However, higher income disparities occurred among farmers in the same communities. Increased import of agrochemicals also had negative social impacts. Due to a lack of knowledge on their correct use, there were reported cases of body itching, painful sensations in the eyes and swollen hands, and some farmers used the chemicals to treat toothache and stomach ache. Also, promotion of tree crop farming only benefited male farmers and discriminated against women since the land tenure systems in the southern areas of Nigeria do not allow women to inherit land, and only rarely can they purchase farmlands without the permission of their husbands.

Several policy recommendations were made and practical action plans provided on the basis of the study results.

These included:

- the establishment of a control mechanism to advise on and monitor the rate of expansion of export crop farms;
- the establishment of a Farm Development Advisory System (FDAS);
- the establishment of an effluent charge on pollutants arising from the activities of rubber processing industries;
- the establishment of health centres in cocoa and rubber producing areas;
- the establishment of a product development and marketing programme as well as conservation, and
- rehabilitation programmes in areas where degradative processes are about to set in.

Besides mitigating the negative impacts, the study recommends enhancing the positive impacts of trade liberalization in Nigeria. To do so, the Federal Government was asked to ensure only a small margin between the producer prices of exportable crops and world prices so that farmers can benefit from international trade. This would require the dissemination of market prices on a regular basis via electronic and print media in English and the vernacular. The Government should also legislate on the processing of cocoa beans to increase the value added and generate employment opportunities at the grassroots level. There should be increased government support for agriculture through the construction of rural infrastructure - roads, water supplies, health and education. The Government should also increase the research and training funds for environment, agriculture and trade, so as to have regular detailed information about what is happening in these sectors.

Finally, Farmers' Associations need to continually educate their members about environmentally degrading practices through training, workshops, seminars, etc., and reinforce advice on sustainable tapping techniques in order to avoid the slaughter tapping currently practiced.

Follow-up

As a result of the integrated assessment, a policy plan has been set up. Some of the practical steps recommended for the first phase of putting this policy plan into action include the organization of a National Steering Committee/Stakeholders' workshop to present the report, sensitize policy makers to the merits of the report, and publish the report for circulation to stakeholders and international organizations.

In addition, meetings on the various recommendations made in the study have been held with the Minister of Agriculture and Rural Development and some of the staff and management of the Cocoa Research Institute of Nigeria. The Ministerial meeting resulted in the establishment of an Agricultural Development Fund of 10 billion Naira (74,77 million US \$) by the Federal Government in 2003. This has led to the establishment of a (Farm) Advisory System to be strengthened in the Agricultural Development Programmes of the State Ministries of Agriculture and Forestry.

A further high level meeting with the President of Nigeria resulted in directives to the modified Nigerian Agricultural, Cooperative and Rural Development Bank to give priority to the funding of projects engaging in the processing of tree crop fruits and beans from its 6 billion Naira (44,86 million US \$) loan portfolio.

The 2002 Annual National Conference of the Farm Management Association of Nigeria (FAMAN) was devoted to environmental issues in agriculture. A concise version of the integrated assessment was presented to the Conference. Late in 2003, the Ministry of Commerce carried out a review of national trade policies with some inputs from the findings of the study.

Some state governments are introducing programmes to assist farmers in replanting their old rubber, cocoa and oil palm trees as well as encouraging intensive tree crop production through the opening up of more land. The recent Federal Government subsidy of 25 per cent on fertilizers, and some State's subsidies, have encouraged greater use of the chemicals. The Federal Government and concerned States see these as priorities and are pursuing them with vigour.

While direct contact with ministries and the Presidency has been instrumental in gaining acceptance for the study findings, there has as yet been no legislative backup. Due to lack of funds the recommended training workshops/seminars on environmental economics to enhance the capacity building of researchers/lecturers, ministry officials, and extension agents could not yet be undertaken. While contact with the Ministries of Agriculture and Trade at the State and Federal levels has been profitable, contact with the Environment Ministry is still pending. The Federal Government has not yet adopted the recommendation of ensuring a small margin between the producer prices of exportable crops and world prices.

Annex 1: Handouts to participants

Case Study 4

Integrated assessment of the impact of trade liberalization on the fisheries sector in Senegal

This study examined the effects of trade liberalization and other trade-related policies on the fisheries sector in Senegal. It revealed that trade distortions such as subsidies, along with bilateral fishing agreements and preferential trade agreements, were largely responsible for steadily diminishing annual catches.

Fishing is an essential component of rural development in Senegal and is strongly integrated with the rest of the economy and society. It plays a strategic role in ensuring the sustainable growth of the national economy by contributing to the balance of payment deficit and creating employment. The fisheries sector generates about 100,000 direct jobs (i.e. fishermen) for nationals, of which more than 90 per cent are in small-scale fishing. Other jobs related to the sector employ about 15 per cent of the working population, which amounts to about 600,000 people. The fisheries sector provides about 75 per cent of the protein needs of the population.

In the late 1980s, due to poorly performing traditional fishery exports, the government intervened in the fisheries sector by establishing several export support mechanisms for expansion of its markets. As a result, the fisheries sector became more commercially viable and export-oriented.

These export support mechanisms included:

- non-reciprocal advantages under the Lomé Agreements authorizing Senegalese piscatorial products to enter the European market with the exemption of custom duties;
- direct and indirect export subsidies;
- devaluation of the CFA franc; and
- fishing agreements concluded with a number of foreign fleets, especially the EU.

This development was favourable to European fleets and to some extent to export firms with distribution networks in the European market. But EU countries (and other developed countries) were keen to fish in Senegalese waters instead of giving preferential tariff rates for Senegalese fish products, so that the export sector did not benefit to the extent it could have.

Nevertheless, the export support mechanisms caused a major shift of fishing effort from domestic market oriented pelagic fishing (species living in the near-surface waters, often far from shore) to export-oriented demersal fishing (species living near the seabed). This led to over fishing of the demersal stocks with high market value (for export), which are currently fully exploited and in some cases over-exploited. In addition, the reduced supply of fish to the domestic market has created a serious protein shortage for the population.

The integrated assessment study was led by ENDA *Tiers Monde*, a national institute for research and policy dialogue in Senegal. A number of other institutions and individuals have been involved in the implementation of this study. The First National Stakeholders' Meeting was held in Dakar in July 2000 and comprised more than three dozen participants, including representatives from the Ministries of Fisheries, Environment and Trade and the Minister of Fisheries. Also attending the meeting were representatives from the private sector (CNPS), fishing and trade unions (ADPES, FENAGIE), and international and regional organizations (WWF, CREDETIP) and research institutions (CRODT/ISRA).

The study was based on qualitative data assessment of the species concerned and their biomass over a period of time. Point estimates have been used where time series were not available. While the study clearly indicated the species most at risk and quantified the stocks of those species, it did not attempt any economic valuation of the species depletion or the cost of possible eventual exhaustion of stocks.

Study findings showed a negative overall effect of trade expansion on the environment. Resource scarcity became serious for some species, particularly for coastal demersal species (deep lying fish) with high market value (for export). The sector faces serious disruption both in terms of resource exploitation and market supply. In addition, resource scarcity and competition have exacerbated conflicts among small-scale fishermen and between industrial and small-scale fishermen.

All those involved in the sector have acknowledged that the increase in global fishing effort and processing capacities have led to the over-exploitation of marine resources.

The main reasons identified for over fishing in Senegal included:

- insufficient measures in place for planning small-scale fishing (which accounts for two-thirds of the total catch and benefits from free access to the fisheries);
- difficulty in controlling industrial-scale fishing; and
- the absence of planning for the conservation of sea resources while fishing efforts and processing capacities were expanding.

Despite the danger that stock depletion represents, and the threat to national food security, the small-scale sector continued to favour export-oriented catch rather than catch for the domestic markets. Market signals also favour fishing for the export market, rather than for domestic consumption where prices are lower and costs are higher. While the operating costs of small-scale units have increased for inshore fishing, the costs of coastal demersal fishing have not raised at the same rate.

The main policy recommendations of the study focused on achieving sustainable management of fisheries through resource preservation. It was suggested to simultaneously set up market-based instruments and regulations together with institutional measures (to secure the participation of stakeholders) and support product development.

Market-based or economic instruments that are likely to facilitate resource preservation involve access to resources. The problems with regulation of quotas, fishing agreements, and capture components support mechanisms must be

addressed. It was recommended that authorities exercise their regulating powers and improve the application of existing rules. In addition, new regulations on the export of endangered species should be established, including banning or surtaxing endangered species, freezing fishing efforts on demersal catch and freezing issuing licences for industrial ships.

With regard to institutional measures, the study recommended consultation with the community and possible delegation of management powers to specially established committees, such as for example a licensing committee. Structural cooperation should also be improved, for example between the Oceanographic Research Centre of Dakar and the Economic Observatory of Senegalese Fisheries.

Product development could be achieved through various government interventions and market-based mechanisms. The government needs to construct infrastructure and provide better support to fisheries. For example, the high value added semi-industrial sardine fishing could be revived. A system for collecting rejections from industrial fishing units using pirogues assembled in secondary coastal surveillance centres, would contribute to increasing the supply to the domestic market and small-scale processing. Offering an ice subsidy would reduce the costs of the fish trade considerably and contribute to improving product quality, especially for the rural population.

The value of production could be increased by adopting market-based mechanisms and economic measures such as:

- granting tax and customs advantages proportional to value-added,
- facilitating the use of technologies adapted to industrial and small-scale processing (through credit incentives), and
- supporting exploration of new markets.

Follow-up

The first project identified the need to assist national institutions to implement the recommended instruments. A follow-up project was launched with the Senegalese Ministry of Fisheries and ENDA Tiers Monde to mobilize national teams to select and implement policy options within the ones identified. The objectives were to enhance coordination and cooperation between relevant national organizations working on fisheries-related activities and enhance the capacity of policy makers and the private sector to implement strategic management responses – particularly economic instruments to promote the sustainable management of fisheries.

In the UNEP country study closing workshop on the *Implementation of a Policy Response Package to Promote Sustainable Management of Senegalese Fisheries*, ENDA and the Ministry of Fisheries shared with the principal stakeholders the project's main findings.

The project's proposals for improved management included:

- restricting access to the resources through the establishment of fees,
- fishing zones and the involvement of local councils;
- improving enforcement of existing regulations as well as the creation of new regulations;
- introducing proposed criteria to assess fees; and
- identifying specific harmful impacts of fishing techniques.

Participants, most notably fishermen and their representatives, enthusiastically endorsed the proposed methods for improved management. They also highlighted several other key considerations.

These included:

- the need to update Senegal's fishing laws and its code of conduct more regularly than the current practice of every 11 years;
- the importance of addressing the regular conflict that occurs between industrial and small-scale fishers;
- the value of open dialogue to bring together diverse actors in the fisheries sector;
- the need to further educate and train both fishermen and enforcement agents on sustainable fishing practices; and
- the importance of a follow-up to this work.

A programme on *Fish, Trade and Environment in West Africa*, has been organized by ENDA Prospectives Dialogues Politique and WWF, with sponsorship from the Dutch Government. It is a two-year programme, beginning in 2003, to define solutions to fishery resource management at the regional level in the context of rapidly depleting fish stocks, export growth and trade liberalization and to ensure food security. The programme is being conducted in two phases. The first phase involves country studies in each of the six countries implicated (Senegal, Gambia, Guinea, Guinea Bissau, Mauritania, and Cape Verde) to assess the linkages between fisheries, trade and environment and provide policy recommendations for improved fisheries management. The second phase will feed the country findings into national and sub-regional dialogues in an effort to develop common strategies for sustainable management.

Annex 1: Handouts to participants

Questions for group discussion (Handout GA 1-5)

Steps of the exercise

- Individual study of the case
- Group discussion according to the questions below
- Election of a rapporteur for the group
- Preparation of a presentation
- Report back to the plenary

Questions for group work

First set of questions

- 1) What has been the main focus of the country project on integrated assessment (theme, sector, spatial area, etc.)?
- 2) What has been the situation in the country, with respect to trade, the environment and development? What linkages can you see between these different aspects (both negative and positive)?
- 3) Is the integrated assessment more ex-ante or more ex-post? Please explain. Please mention the advantages and disadvantages of both approaches.
- 4) Who has been the owner / initiator of the integrated assessment project? What is the key role to play by the owner?
- 5) How have the different stakeholders been involved in the process? Do you think any stakeholder has been missing? What is your opinion on the participatory process?
- 6) How can such a project contribute to capacity building? How would you evaluate if capacities have been built?

Presentation to report back to plenary

It is suggested that the report back to the plenary should cover answers to above questions, as brief as possible (bullet points on overheads, flipcharts).

Questions for group work

Second set of questions

- 1) Which methods (and data) have been used for the integrated assessment? What is your opinion about the results obtained with these methods? What additional or alternative methods would you propose ? Please mention both quantitative and qualitative methods.
- 2) What are, based on your experience, advantages and disadvantages of qualitative and quantitative methods? Please give examples from experience.
- 3) Which impacts of the policies have been identified (environmental, social, economic impacts, etc.), both positive and negative? Which ones do you think are the most important? Please explain why.
- 4) From the policy responses that have been recommended to improve the situation in the country, which are the ones that you would choose to implement? Please explain why.
- 5) What is your opinion about the follow-up activities that have been carried out? What further activities would you suggest?
- 6) What is your overall opinion about the outcome of the integrated assessment project? Where do you see the main benefits and difficulties of such a project?

Presentation to report back to plenary

It is suggested that the report back to the plenary should cover answers to above questions, as brief as possible (bullet points on overheads, flipcharts).

Annex 2: Results of the Group Activity
Case Study 2: China, Questions & Answers

First set of questions

- 7) **What has been the main focus of the country project on integrated assessment (theme, sector, spatial area, etc.)?**
- The projected impact of import / trade liberalization on the cotton sector, Jiangse Province in China.
- 8) **What has been the situation in the country, with respect to trade, the environment and development? What linkages can you see between these different aspects (both negative and positive)?**
- China was not a member of the WTO but had bilateral trade concessions with USA..
 - Environment: Use of large quantities of agro-chemicals & plastic films – causing environmental impacts.
 - Development: Declining cotton production, which affected quality of life.
 - Positive linkages: Declining cotton cultivation should lead to less environmental degradation.
 - Negative linkages: Poor quality of life, less income for China due to trade concession to USA, inadequate policy in cotton industry.
- 9) **Is the integrated assessment more ex-ante or more ex-post? Please explain. Please mention the advantages and disadvantages of both approaches.**
- More ex-ante because it was conducted before China's entry to the WTO.
 - Ex-ante is proactive; ex-post is reactive.
- 10) **Who has been the owner / initiator of the integrated assessment project? What is the key role to play by the owner**
- Agricultural Economical Research institute (AERI).
 - One of the key roles was the follow-up on the recommendations.
- 11) **How have the different stakeholders been involved in the process? Do you think any stakeholder has been missing? What is your opinion on the participatory process?**
- National stakeholder workshops.
 - Missing stakeholders: Ministry of Finance, Ministry of Planning.
 - Participatory process was not exhaustive / comprehensive.
- 12) **How can such a project contribute to capacity building? How would you evaluate if capacities have been built?**
- Methods that could be used: Number of people trained, number of seminars held, etc.

Second set of questions

7) Which methods (and data) have been used for the integrated assessment? What is your opinion about the results obtained with these methods? What additional or alternative methods would you propose? Please mention both quantitative and qualitative methods.

- (a) Qualitative methods: modeling, partial equilibrium, CBA; for this secondary data was used such as: TRQs, area, quantity, income, poverty levels, etc; (b) Qualitative methods: discussion, consultation, etc.
- The results are as good as the quality, accuracy and adequacy of the data and methods used.
- Other tools could be proposed such as social acting matrix and general equilibrium models.

8) What are, based on your experience, advantages and disadvantages of qualitative and quantitative methods? Please give examples from experience.

	Advantage	Disadvantage
Qualitative Method	- Cheap - Easy to present - Easy to access	- Less reliable - Difficult to measure - Subjective
Quantitative Method	- More reliable - Easy to measure - Reproducible - Scientific	- Expansive - Time consuming - Expertise

9) Which impacts of the policies have been identified (environmental, social, economic impacts, etc.), both positive and negative? Which ones do you think are the most important? Please explain why.

	Positive	Negative
Environment	- Less chemicals used - More efficient technology	- City extension
Social	- City extension (housing) - Import of cotton & rise in cloth	- City extension (security, slums) - Poverty increases - Decrease in agric. employment - Import of cotton leads to loss of jobs (particularly women who pick the cotton)
Economic	- More efficient technology (higher income)	- City extension (valuable agric. land) - Poverty increases - Import of cotton leads to loss in Production and foreign exchange earnings - Net cost means China is losing (CBA)

10) From the policy responses that have been recommended to improve the situation in the country, which are the ones that you would choose to implement? Please explain why.

- Increasing the competitive advantage of Chinese cotton: new disease resistant varieties, cooperatives, etc.
- Sustainable management of the cotton sector: supply and demand maintained by cooperatives; improvement in pollution abatement.

11) What is your opinion about the follow-up activities that have been carried out? What further activities would you suggest?

- No training component.
- Impact assessment needed for genetically modified cotton.
- Some of the recommendations are not based on benchmarks (e.g. lowering the use of fertilizers).
- Life Cycle Approach (Green SS, chain management, including wool, vegetable oil, livestock feed, soap).

12) What is your overall opinion about the outcome of the integrated assessment project? Where do you see the main benefits and difficulties of such a project?

- A good report but could have been better if: (1) social analysis (e.g. gender issue, loss of jobs, etc.) had been more comprehensive, and (2) economic incentives had been highlighted.
- Main benefits: less use of agrochemicals & other environment friendly practices.
- Main difficulties: (1) grassroots information was not used / harvested; and (2) impact on sustainable development unclear, as it was a short-time study.

Annex 1: Results of the Group Activity
Case Study 3: Nigeria, Questions & Answers

First set of questions

- 13) What has been the main focus of the country project on integrated assessment (theme, sector, spatial area, etc.)?**
- Impact of trade-liberalization and trade-related policies on the environment, social and economic aspects.
 - Agriculture: Cocoa and Rubber.
 - Rural producing areas.
- 14) What has been the situation in the country, with respect to trade, the environment and development? What linkages can you see between these different aspects (both negative and positive)?**
- Trade-liberalization (SAP).
 - Development = maximization of output.
 - Not enough attention was given to the environment, social considerations.
 - Trade increase in cocoa led to rehabilitation of cocoa farms and health related impacts.
 - Trade increase in rubber led to increase in deforestation, erosion and overexploitation.
 - Positive economic impacts included increase in income, employment, and GDP. But they also included increase in inequalities and discrimination against women as well as health impacts (for cocoa).
- 15) Is the integrated assessment more ex-ante or more ex-post? Please explain. Please mention the advantages and disadvantages of both approaches.**
- The study was ex-post (done after the policy (SAP) had been implemented).
 - Relevant for this case: it was a new field of investigation. It might also be useful to do an ex-ante study.
- 16) Who has been the owner / initiator of the integrated assessment project? What is the key role to play by the owner**
- University (UNAA of Nigeria).
 - Its key role was to bring together all stakeholders in a participatory process.
- 17) How have the different stakeholders been involved in the process? Do you think any stakeholder has been missing? What is your opinion on the participatory process?**
- National steering committee, data collection and participation in seminars.
 - Missing were the Ministry of Environment, women groups and NGOs.
 - Overall it has been positive but could still be improved in future exercises.
- 18) How can such a project contribute to capacity building? How would you evaluate if capacities have been built?**
- Successful in building generic capacities in integrated assessment (model of institutional management).
 - Level of participation - policy response due to communication with the stakeholders.

Second set of questions

13) Which methods (and data) have been used for the integrated assessment? What is your opinion about the results obtained with these methods? What additional or alternative methods would you propose? Please mention both quantitative and qualitative methods.

- Methods for data collection: first and secondary data, qualitative (such as PRA) and quantitative data.
- Data analysis: regression models, graphs, Cost Benefit Analysis.
- Regular consultation with steering committee.
- The methods were generally satisfying. Additional methods could have been used, such as multi-criteria technique (the data for this was available).

14) What are, based on your experience, advantages and disadvantages of qualitative and quantitative methods? Please give examples from experience.

	Qualitative Method	Quantitative Method
Advantage	<ul style="list-style-type: none"> - Can be used to prioritize - Suitable to assess values - Policy cause-effect analysis - Less data demanding - Not time consuming (quick to apply) 	<ul style="list-style-type: none"> - Provide factual information - Provide base-line data for future analysis (scenario building) - Easy to communicate
Disadvantage	<ul style="list-style-type: none"> - Imprecise (may be subjective) 	<ul style="list-style-type: none"> - Costly (as regards budget and time) - Data demanding

15) Which impacts of the policies have been identified (environmental, social, economic impacts, etc.), both positive and negative? Which ones do you think are the most important? Please explain why.

	Environment	Economic	Social
Cocoa	- Neutral	- GDP increases	- Income distribution (inequality)
Rubber	- Very negative	<ul style="list-style-type: none"> - Employment increases - Income increases - Resource use goes up (i.r.o cocoa) 	<ul style="list-style-type: none"> - Health effect - Gender equality

- Importance is interpreted as “worrying problems” – then mechanisms need to be found to address them.

16) From the policy responses that have been recommended to improve the situation in the country, which are the ones that you would choose to implement? Please explain why.

- The policy responses and recommendation are generally appropriate: sector-specific policies were identified (rehabilitation etc.), good environmental dimensions and rural infrastructure was considered.
- But missing are aspects such as: discrimination against women (not addressed in policy recommendations).
- Also suggested: legislative reform to address the issue or a strategy that is socially (culturally) more acceptable.

17) What is your opinion about the follow-up activities that have been carried out? What further activities would you suggest?

- Satisfied with the activities carried out, but four activities are outstanding, namely: (1) legislative back-up, (2) contact with Environment Ministry is lacking, (3) price recommendation has not been implemented, (4) action on gender equality is missing.

18) What is your overall opinion about the outcome of the integrated assessment project? Where do you see the main benefits and difficulties of such a project?

- Overall opinion: the assessment is fairly good.
- Generic capacity has been built, project could be replicated, and the findings helped to address the problems in the sector (leading to more sustainability).
- Difficulties have been: (a) building ownership / ensuring involvement in the project, (b) project is resource consuming (budget) and (c) time consuming (e.g. the constituency building with stakeholders).

Annex 1: Results of the Group Activity

Case Study 4: Senegal, Questions & Answers

First set of questions

19) What has been the main focus of the country project on integrated assessment (theme, sector, spatial area, etc.)?

- To develop a project intended to help Senegal to apply a sustainable strategy for the fisheries sector.
- Objectives: develop export markets, maximize revenue and meet local food security needs.

20) What has been the situation in the country, with respect to trade, the environment and development? What linkages can you see between these different aspects (both negative and positive)?

- Socio-economic situation: fisheries accounts for 100,000 jobs, 15% of working population, 75% protein needs, and contributes to balance of payment deficit.
- There has been a shift from domestic to EU markets.
- Protein shortage of the population.
- Overall favorable economic results.
- Conflict between small scale and industrial fishermen, and between local, national and international fishermen.
- Key issues: overfishing of coastal demersal species and subsequent depletion of the resource.
- Open access for small scale fishing which increased overexploitation, hence the need for licensing and zoning.
- Linkages (independency of the three sectors): Foreign demand high -> prices increase -> overexploitation and protein shortage -> collapse in trade -> employment decreases -> resource conflict.

21) Is the integrated assessment more ex-ante or more ex-post? Please explain. Please mention the advantages and disadvantages of both approaches.

- Study is ex-post and intends to benefit the development of a new policy.

Advantage ex-post	Disadvantages ex-post
- Helps future planning	- Not proactive
- Existing data	- Lacks baseline data
- Provides lessons for good practice	- Predictive

22) Who has been the owner / initiator of the integrated assessment project? What is the key role to play by the owner

- Initiator & owner: ENDA.

23) How have the different stakeholders been involved in the process? Do you think any stakeholder has been missing? What is your opinion on the participatory process?

- Stakeholders: Government (Fisheries, Trade, Environment departments), research institutes, professional organizations, individuals.
- Effective participation ensured through workshops, government intervention, local experts and research institutes, consultation meetings, review process and questionnaires.

24) How can such a project contribute to capacity building? How would you evaluate if capacities have been built?

- It can be used as a case study for other sectors (i.e. for sustainable natural resource exploitation).
- It can be used as a base from which to design / develop future programmes.
- Indicates a need to value natural resources (natural resource accounting).
- Data can be used to train fishermen.
- For evaluation: design an appropriate monitoring & evaluation tool (indicator based) to be able to measure progress and institute corrective action earlier rather than later.

Second set of questions

19) Which methods (and data) have been used for the integrated assessment? What is your opinion about the results obtained with these methods? What additional or alternative methods would you propose? Please mention both quantitative and qualitative methods.

- Quantitative and qualitative methods have been used.
- Methods not sufficient: no economic valuation of the species; insufficient socio-economic analysis; the pillars i.e. economic, social and environment not well integrated.
- Alternative methods: regulatory effects (qualitative), CBA and cost effectiveness (quantitative).

20) What are, based on your experience, advantages and disadvantages of qualitative and quantitative methods? Please give examples from experience.

	Qualitative Method	Quantitative Method
Advantage	- Accessible information - Easy to use - Cost effective	- Specific & detailed - Informed decision-making - Reliable
Disadvantage	- Lack of tangible statistical information for decision-making	- Requires technical expertise for interpretation - Vulnerable for manipulation
Examples	- EIA studies	- Environmental cost benefit studies for EMS

21) Which impacts of the policies have been identified (environmental, social, economic impacts, etc.), both positive and negative? Which ones do you think are the most important? Please explain why.

	Positive	Negative
Environment	- Status of fish stock known - Resource preservation & access (controlled)	- Depletion of fish stocks - Degradation of biodiversity
Social	- Awareness created on resource conflicts and employment status	- Resource conflicts - Employment decreases (on part of local fishermen)
Economic	- New Technology - Increase in foreign exchange - Increase in government revenue - Value-added products - Sustainable fishing practices	- Protein shortage - Household income decreases - Unfavorable terms of trade

22) From the policy responses that have been recommended to improve the situation in the country, which are the ones that you would choose to implement? Please explain why.

- (a) Sustainable market based instruments: granting tax and custom advantages proportional to value added and facilitating the use of technologies adapted to industrial and small scale processing (through credit incentives).
- (b) Consultations with the communities and possible delegation of management powers, e.g. licensing committees.
- (c) Product development: reducing loses and improving quality e.g. through ice subsidies and system of collecting rejects.

23) What is your opinion about the follow-up activities that have been carried out? What further activities would you suggest?

- They are adequate.
- Further suggestions: Develop monitoring and evaluation tool to make follow-up effective; update the study, work on significance of cultural and gender aspects.

24) What is your overall opinion about the outcome of the integrated assessment project? Where do you see the main benefits and difficulties of such a project?

- Relevant and positive.
- Benefits sustainable fishing practices.
- Pilot project replicated by other countries.