

## Contents and Methods of Integrated Assessment

### Session 3

## Purpose of session 3

- ♦ Introduction to analytical methods to identify impacts of trade agreements or policies.
- ♦ Enable participants to select appropriate methods within their particular context.

## Main topics of session 3

1. General guidelines for choosing appropriate methods
2. Preliminary assessment methods (Phase 2)
3. Detailed assessment methods (Phase 3)
4. Integration and comparison of impacts (Phase 4)
5. Sustainability framework and indicators

## (1) Guidelines for choosing methods

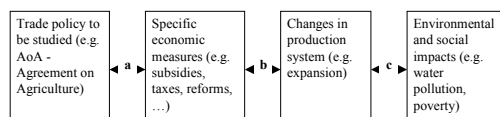
- ♦ Use simple methods for analysis if these can serve your purpose;
- ♦ Use *qualitative* methods for insight into broad relations;
- ♦ Use *quantitative* methods for more detailed / specific insights into priority issues;
- ♦ Use of methods already known in country.

## (2) Preliminary assessment methods (Phase 2)

Use is made of mainly *qualitative* methods to identify key issues for more detailed assessment.

But what part of the policy cause-effect chain to deal with?

## (3) Policy cause-effect chain



## (2) Preliminary assessment methods (Phase 2)

The matrix is commonly used format to document, visualize and report on impacts. Data can be obtained from a stakeholders' workshop or participatory rural appraisal (PRA) methods for qualitative or semi-quantitative assessment.

## (2) Matrix for preliminary assessment of impacts

		Expected positive and negative impacts on environmental, social or micro-economic parameters					
		1	2	3	4	5	6
Trade policy, measure or activities	I						
	II						
	III						
	IV						
	V						

## (2) Qualitative methods: OECD approach

The environmental assessment methodology of the OECD (1994) qualitatively assesses the impacts of trade on the environment in 5 categories:

- Product effects
- Technology effects
- Scale effects
- Structural effects
- Regulatory effects

## (2) Impacts of trade liberalization on economy and on environment

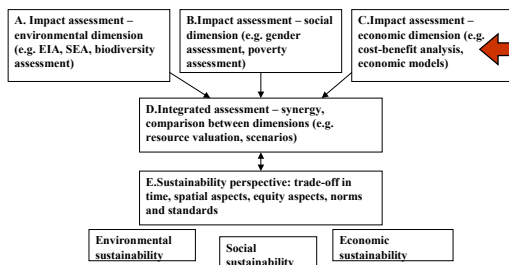
Globalization - related activity	Anticipated economic effects	Anticipated pollution/resource use effects--	
		--at home	--at cross-border transport
Scale effects	Change in the volume of exports and imports; increase in cross-border transport (+)	(+)	(+)
Structural effects	Change in the composition of exports and imports; increase in cross-border transport (+, -)	(+, -)	(+, -)
Product effects	Change in the composition of exports and imports; increase in cross-border transport (+, -)	(+, -)	(+, -)
Technology effects	Change in the composition of exports and imports; increase in cross-border transport (-)	(-)	(-)

## (3) Detailed assessment methods (Phase 3)

Use is made of methods for *quantification and valuation* of impacts.

It can be done *qualitatively* by means of matrices and participatory tools or by *quantitative* methods.

## (3) Impact assessment methods



### (3) Overview on methods for detailed assessment

There are three broad categories of methods, those for:

- Macroeconomic analysis
- Microeconomic (sector-based) analysis
- A group of other methods

### (3) Macroeconomic analysis

Three broad groups of models to assess linkages between trade and environment:

- Input-output models and social accounting matrices
- General equilibrium models
- A group of other macroeconomic models

In adopting these, consider the scope of analysis (localised versus cross-country impacts) – consider a regional or national model.

### (3) Sector-based microeconomic analysis

- Partial equilibrium models
- Environmental Impact Assessment
- Cost-Benefit analysis
- Risk Assessment
- Multi-criteria analysis
- Extended domestic resource cost analysis

### (3) Other approaches

- Life-cycle analysis
- Global commodity chains analysis

### (3) Case study – Effects of trade liberalisation on Argentina fisheries

*Positive effects:*

- Increase in exports (scale effect);
- Improvement and growth of fisheries fleet (technology and scale effects);
- Technological innovation (technology effects);
- Increased research facilities and skills;
- Opening of new markets and trade relations;
- Increase in public income (scale effect);
- Regional infrastructure like ports, industries (structural effect).

### (3) Case study – Effects of trade liberalisation on Argentina fisheries

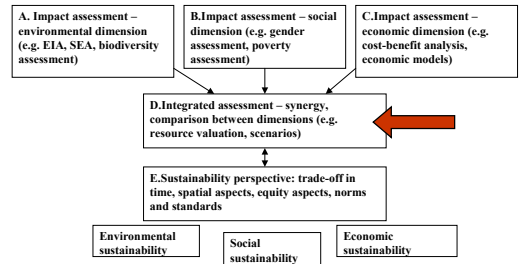
*Negative effects:*

- Degradation of the fisheries biomass;
- Increased costs for regulation (regulatory effect);
- Increased operation costs;
- Fiscal costs (subsidies, regulatory effect);
- Non-diversification of catches (product effect);
- Investment oversizing (overcapitalisation of fleets).

## (4) Comparison & integration of impacts (Phase 4)

To evaluate and compare the different impacts identified. Economic valuation is the most common method used.

## (4) Impact assessment methods



## (4) Economic valuation

Assumes that all social and environmental values can be represented by cost indications.

This assumption is somewhat debatable for environmental and social values.

Health impacts may be easy to cost, but non-health impacts including the loss of ecosystem functions are not.

## (4) Valuation techniques

Conventional market-based approaches

- Change in productivity approach
- Cost-based approaches

Surrogate market-based approaches

- Hedonic pricing
- The travel cost methodology

Constructed market-based approach

- Contingent valuation methodology
- Contingent ranking

## (4) Choosing valuation methods

Choice of methods is governed by:

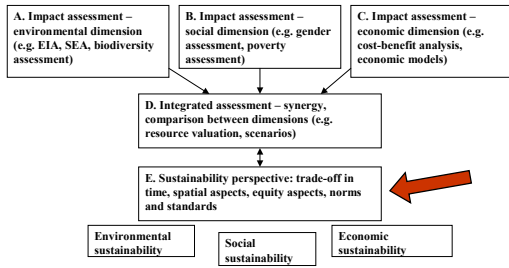
- Cost
- Availability of data
- Time availability
- Choice of discount rate
- Expertise available

## (4) Negotiables and values

It is important to make a distinction between:

- Values that are not negotiable, being generally accepted or internationally agreed upon by rules, and thus not subject to cost-benefit analyses or economic valuation.
- Values that are negotiable, and that can be exchanged or substituted, and thus subject to cost-benefit analyses and economic valuation to find the optimum policy.

## (5) Sustainability assessment



## (5) Sustainability framework and indicators

- Taking into account a sustainability framework derived from sustainability policies or international agreements,
- Attention for spatial trade-off: here and there
- Attention for temporal trade-off: now and later
- Sustainability indicators

## (5) Examples of sustainability indicators

### Economic

- Average real income, value added to agricultural products,

### Environmental

- Water quality, biological diversity, soil degradation, forest cover,

### Social

- employment rate, poverty rate, income distribution, school attendance, life expectancy,

## (5) Criteria for selecting good indicators

It is recommended to use the S-M-A-R-T criteria to select good indicators. This means they should be:

- Specific
- Measurable
- Acceptable
- Realistic
- Time-bound

## (5) Possible ways of defining appropriate indicators

- Making use of available national documents
- Making use of indicator sets created by the United Nations Commission on Sustainable Development
- Stakeholders defining their own indicators

## In summary

- The use of models is fairly recent. They prove useful but have major data and cost limitations.
- No approach is superior; different techniques will be appropriate for different situations.
- There is much to learn from developing country experiences with integrated assessment.
- Capacity building remains key to increasing ability to use techniques