

TOOLS AND APPROACHES TO THE USE OF ECONOMIC ANALYSIS IN SPS DECISION- MAKING

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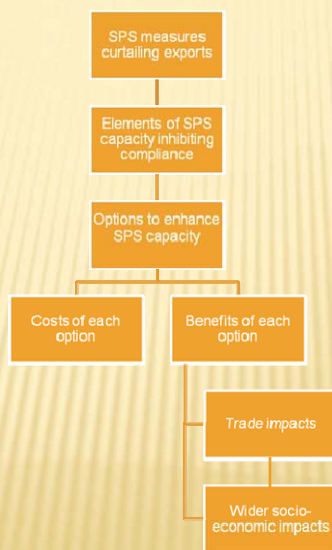
OVERVIEW

- × Context
- × Role and nature of economic analysis
- × Approaches to economic analysis
- × Decisions on the basis of multiple criteria
- × Conclusions

CONTEXT

- ✘ Significant weaknesses in SPS capacity in developing countries
- ✘ Limited resources:
 - + Domestic
 - + Donors
- ✘ Evidence of inefficiencies in technical cooperation:
 - + Supply-led
 - + Lack of priority-setting
 - + Overlaps versus gaps across donors
- ✘ Thrust towards enhanced aid effectiveness:
 - + Information sharing
 - + Coordination
 - + Economic analysis
- ✘ Little evidence of systematic use of economic analysis in practice

ANALYSIS OF TRADE-RELATED SPS CAPACITY-BUILDING



ROLE OF ECONOMIC ANALYSIS

- ✘ 'Sift out' projects with net cost
- ✘ Identify priorities within capacity-building needs:
 - + Weaknesses in SPS capacity
 - + Products
- ✘ Identify efficient approaches to capacity development:
 - + Alternative solutions
 - + Points of intervention

BENEFITS OF ECONOMIC ANALYSIS

- ✘ Economic efficiency
- ✘ Objectivity
- ✘ Transparency & accountability
- ✘ Inclusiveness
- ✘ Appreciation of risk & uncertainty

CHALLENGES IN UNDERTAKING ECONOMIC ANALYSIS

- ✘ Costs and benefits can be wide-ranging and difficult to identify
- ✘ Costs and benefits can be difficult to measure
- ✘ Costs and benefits can be difficult to attribute
- ✘ Spill-over effects may be significant
- ✘ Data is almost always an issue:
 - + Availability
 - + Quality
- ✘ Changes *nature* of decision-making processes:
 - + How decisions made
 - + Cost and time intensity of decision-making processes
 - + Influence & power structures

ECONOMIC ANALYSIS METHODS

- ✘ Cost-benefit analysis:
 - + Which options yield net benefit?
 - + Which option yields greatest net benefit?
- ✘ Cost-effectiveness analysis:
 - + Which option most cost-effective way of achieving given objective?
- ✘ Multi-criteria decision analysis :
 - + Which option best way of achieving outcome with multiple objectives?
 - + What is impact of changing priorities across multiple objectives?

COST-BENEFIT ANALYSIS

- ✘ Compute and compare flow of costs and benefits of options over time
- ✘ Costs and benefits expressed in monetary units
- ✘ Comparison to baseline - usually the status quo
- ✘ Focus:
 - + Narrow versus wider impacts
 - + Partial versus general equilibrium effects
- ✘ Cost estimation:
 - + Engineering approach
 - + Econometric approach
 - + Accounting approach
- ✘ Benefit estimation:
 - + Quantification
 - + Monetization

COST-BENEFIT ANALYSIS

- ✘ Most widely applied approach to economic analysis of SPS controls
- ✘ Relatively few applications in developing countries, especially in area of food safety
- ✘ Applied to *ex ante* and *ex post* analysis
- ✘ Wide variation in approaches – simple accounting frameworks to econometric models
- ✘ Often appreciable data problems
- ✘ Applications tend to be highly context-specific
- ✘ Some evidence of more routine use:
 - + Project preparation/appraisal
 - + Regulatory impact analysis

COST-EFFECTIVENESS ANALYSIS

- ✘ Monetary costs of alternative options compared with (common) physical benefits
- ✘ Options ranked in terms of cost per physical benefit
- ✘ Option with greatest cost-effectiveness acts as baseline
- ✘ Will not determine if options produce a net benefit
- ✘ Most widely applied approach to assessment of medical interventions
- ✘ Limited applications to food safety and animal health controls
- ✘ Applications focus on alternative controls in very specific contexts
- ✘ Little or no application in developing countries

MULTIPLE-CRITERIA DECISION ANALYSIS

- ✘ Choice between options in terms of multiple criteria
- ✘ Can be applied to relatively large numbers of options that vary in the associated costs and benefits
- ✘ Costs and benefits do not need to be measured in common monetary or non-monetary units
- ✘ Highly flexible in terms of data requirements
- ✘ Wide range of methods that differ in how distinguish between options
- ✘ Widely applied in natural resource management, engineering....
- ✘ Little application to SPS controls....but some recognition could be of significant utility

DRIVING PRINCIPLES

- ✘ What questions need answering?
 - + Number/range of options
 - + Range/diversity of impacts
- ✘ What is feasible?
 - + Data
 - + Time
 - + Resources
 - + Skills/experience
- ✘ What compromise is acceptable in terms of rigour and/or completeness?
- ✘ Is there buy-in at key levels of the decision process?

ANALYTICAL CONTEXTS

- ✘ *Ex post* analysis of existing capacity-building efforts
- ✘ Analysis of large-scale capacity interventions
- ✘ 'Demonstration' analysis of controls on SPS risks and/or enhancements in capacity
- ✘ Choices between multiple capacity-building options/design of actions plans for capacity enhancement

PRIORITISING CAPACITY-BUILDING OPTIONS ON THE BASIS OF MULTIPLE CRITERIA

- ✘ Broad-based comparisons of capacity-building options within and across SPS areas
- ✘ Prioritisation on basis of multiple criteria:
 - + Trade impacts
 - + Direct domestic impacts
 - + Livelihood impacts
- ✘ Importance of decision criteria in choosing between options may differ
- ✘ Information set on decision criteria may differ:
 - + How measured
 - + Available data

A MULTI-CRITERIA FRAMEWORK

- 1 • Define choice set
- 2 • Compile information cards
- 3 • Develop cobweb diagrams
- 4 • Derive numerical prioritization

DEFINING CHOICE SET

- ✘ Determines the boundary of the analysis
- ✘ Indicators:
 - + Capacity-based
 - + Compliance-based
 - + Trade-based
- ✘ Need on-going and consistent system of data capture and synthesis
- ✘ Need to refocus towards *ex ante* indicators of capacity-building needs
- ✘ Role of triangulation

COMPILING INFORMATION CARDS

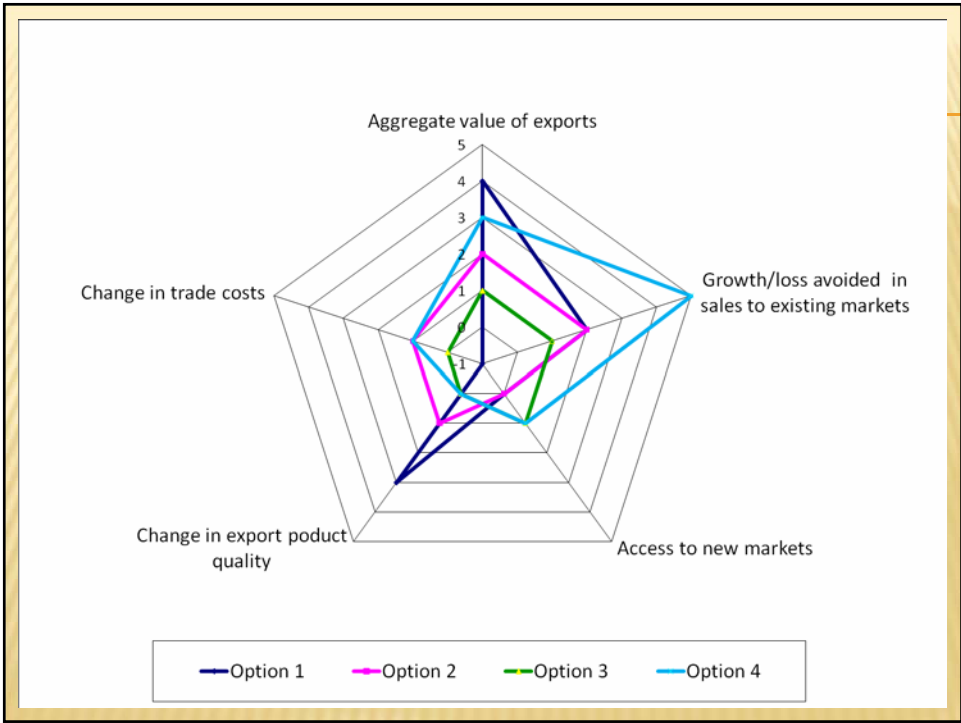
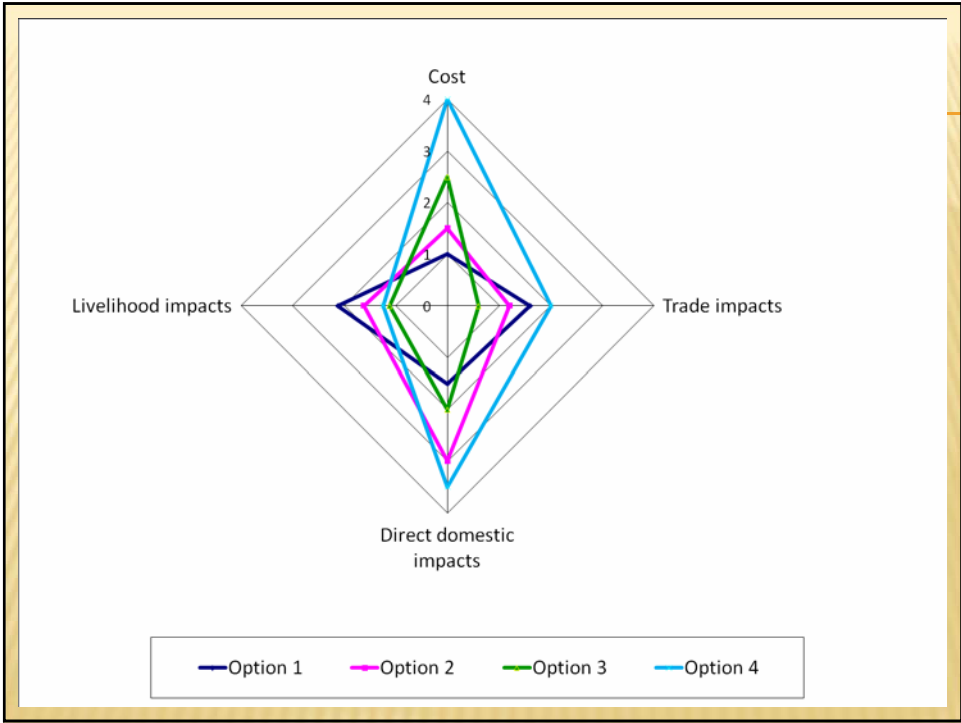
- ✘ Define decision criteria capturing costs and benefits that are pertinent to the choice between capacity-building options
- ✘ Derive measures of each criterion relative to a 'calculation base':
 - + Discrete data
 - + Ordinal data
 - + Count data
 - + Continuous data
- ✘ Compile information card for each capacity-building option
- ✘ Brings all information together onto a 'level playing field'
- ✘ Facilitates initial 'sifting' of options

DECISION CRITERIA

Categories	Specific Impacts
Costs	<ul style="list-style-type: none">•Non-recurring costs•Recurring costs
Trade impacts	<ul style="list-style-type: none">•Aggregate value of exports•Growth/loss avoided in sales to existing markets•Access to new markets•Change in export product quality•Change in trade costs
Direct domestic impacts	<ul style="list-style-type: none">•Change in agricultural productivity•Change in domestic public health•Change in environmental protection•Change in domestic market sales
Livelihood impacts	<ul style="list-style-type: none">•Number of smallholder farmers in value chain•Change in number of smallholder farmers•Degree of poverty reduction•Change in total employment•Level of involvement of women•Change in level of involvement of women•Benefits to vulnerable/disadvantaged areas

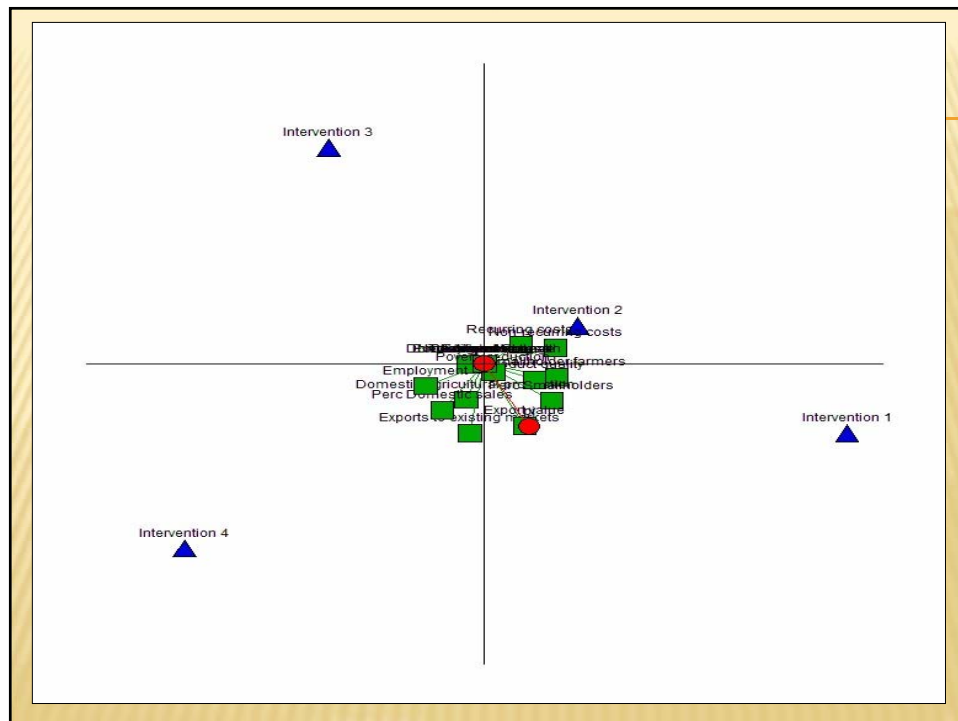
CONSTRUCT COBWEB DIAGRAMS

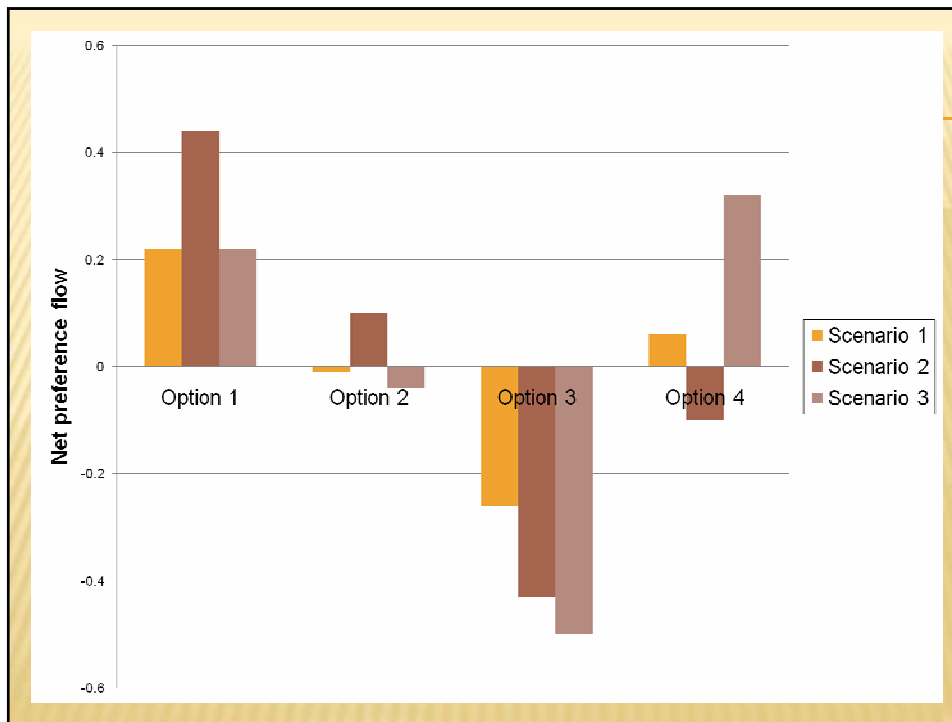
- ✘ Visual characterisation of costs and benefits of the capacity-building options
- ✘ Can use common or distinct metrics
- ✘ Facilitates comparison of options
- ✘ Can be basis of second round of 'sifting' of options using minimum/maximum thresholds for key decision criteria



FORMAL PRIORITISATION

- ✘ Derive numerical rankings using multiple-criteria decision analysis
- ✘ Approaches:
 - + Ranking of options
 - + Single optimal option
 - + Acceptable/unacceptable options
- ✘ Outranking provides a flexible approach for ranking capacity-building options on basis of net preference
- ✘ Decision criteria can be incorporated using any form of data
- ✘ Can define direction and nature of preference relations
- ✘ Can alter weights assigned to particular decision criteria





CONCLUSIONS

- ✘ Existing studies demonstrate the utility of economic analysis in various contexts....
- ✘and also illustrate the attendant challenges
- ✘ There are remaining questions over the use of economic analysis to support routine decision-making
- ✘ Need a flexible approach that can be applied to make broad-based comparisons of capacity-building options
- ✘ Multi-criteria decision analysis could be a valuable addition tool
- ✘ Whichever approach is employed, needs to be operationalised in a broader structured framework
- ✘ Use for supporting versus making decisions