



Using Multi Criteria Decision Analysis to Identify and Prioritize Key SPS Capacity Building Options and Needs for Malawi

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Structure

- Background
- Aims & nature of framework
- Practical process
- Results
- Conclusion

Background



- Many countries face challenges complying with SPS measures in international trade
- SPS capacity-building needs are often substantial
- Challenges establishing priorities in face of resource constraints
- Process of priority-setting often lacks coherence and transparency
- Efforts to develop more rigorous framework for setting priorities



Aims of framework

- Provide structured approach to establishing priorities between alternative SPS capacity-building options
- Enhance transparency of SPS capacity-building decisions
- Facilitate inputs to priority-setting from diverse stakeholders



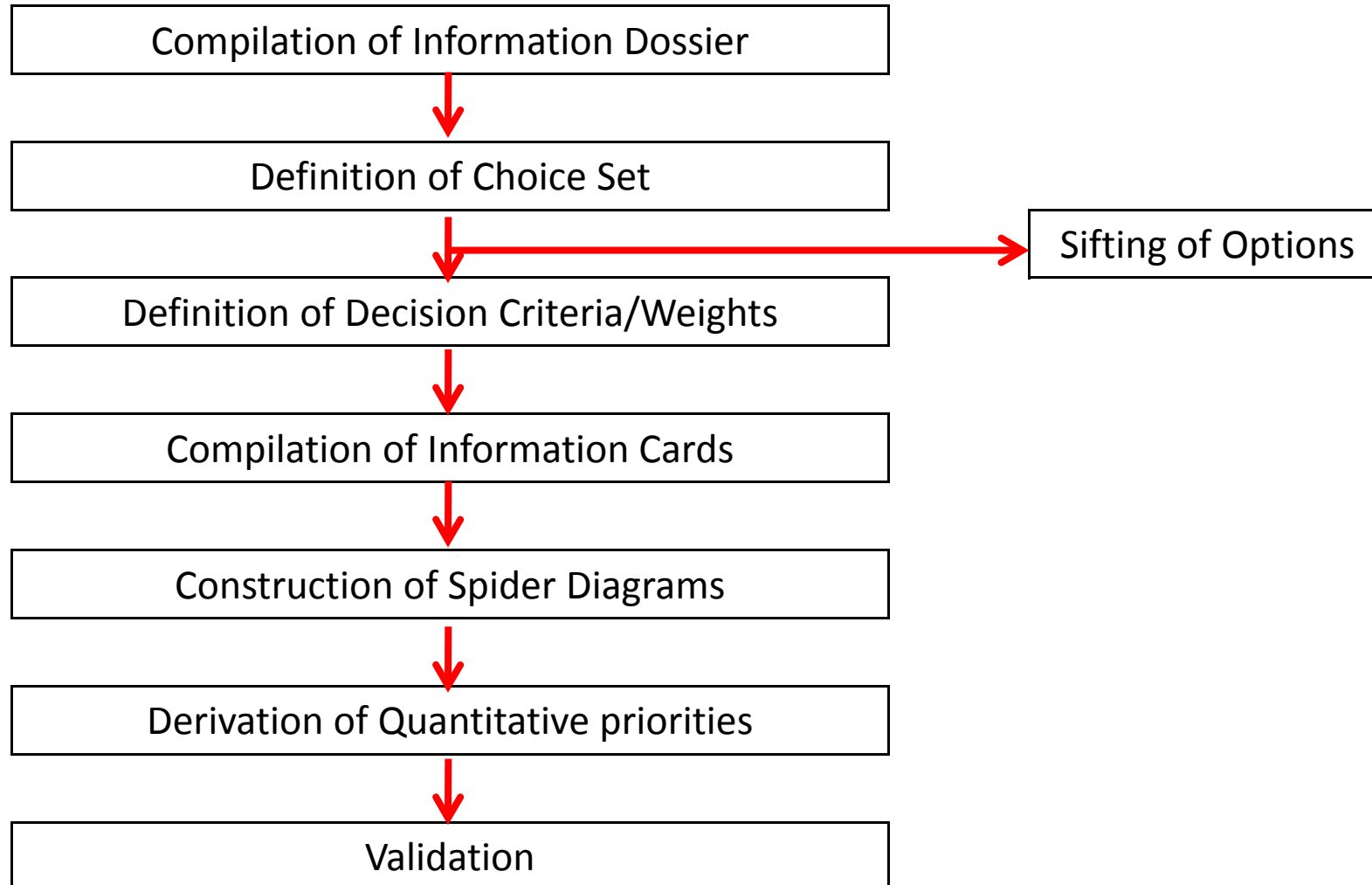
- Greater resource efficiency
- Demand-driven capacity-building
- Enhanced trade and social outcomes and impacts

Priority-setting framework



Criteria	Weights	Option1	Option 2	Option 3	Option 4	Option 5
Cost	20%	\$3 million	\$500,000	\$2 million	\$250,000	\$3 million
Growth in Exports	30%	30%	20%	50%	10%	15%
Small farmers	30%	No	Yes	No	Yes	Yes
Poverty impacts	20%	Minor	Major	Moderate	Minor	Major
Ranking		5	1	3	2	4

Practical Process - Stages in prioritisation process

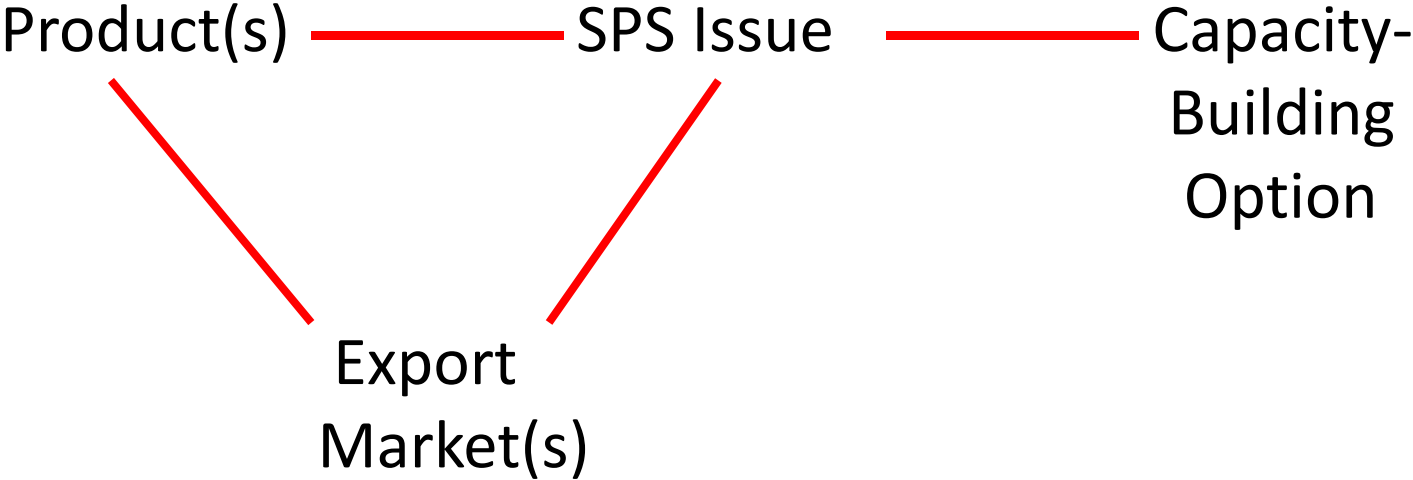


Malawi Stakeholder Workshop



- Workshop held 8th February 2012
- 37 participants:
 - Public sector (17)
 - Private sector (9)
 - Donors (6)
 - Research (5)
- Identified 31 capacity-building options

Nature of capacity-building option



Identified capacity-building option



1. Post-harvest treatment for mangoes
2. Aflatoxin controls for groundnuts
3. Aflatoxin controls for maize
4. Mycotoxin testing capacity
5. Compliance with SPS requirements for honey exports
6. Pesticide controls for tobacco
7. Pesticide controls for pulses
8. Pesticide controls for maize
9. Pesticide controls for tea



Identified capacity-building options

10. Pesticide residue testing capacity
11. Animal health controls for (live ornamental) fish exports
12. Compliance with hygiene requirements for milk and dairy product exports
13. Virus indexing capacity for planting materials
14. Compliance with SPS requirements for chilli sauce exports
15. Seed inspection and certification capacity
16. Animal health controls for day old chick exports



Excluded capacity-building options

1. Controls for Larger Grain Borer in maize
2. Plant pest controls for cut flowers
3. Controls for weevils in pulses
4. Animal disease controls for hides and skins
5. Controls for pests and diseases in citrus fruit
6. Genetically-modified organism (GMO) testing for maize
7. Plant pest controls for tobacco
8. Starch testing for roots and tubers



Excluded capacity-building options

9. Coffee packaging
10. Nutrient content testing for fortified maize meal
11. Plant health controls for timber packaging
12. HACCP requirements for rice exports
13. Food safety controls for processed mango
14. Capacity for HACCP certification in a variety of sectors
15. SPS controls for cotton



Decision criteria and weights - defined at stakeholder workshop

Criterion	Weight
Cost and difficulty of implementation	
Up-front investment	11%
On-going costs	9%
Difficulty of implementation	8%
Trade impact	
Change in value of exports	20%
Trade diversification	11%
Domestic agri-food impacts	
Agricultural/fisheries productivity	12%
Domestic public health	8%
Environmental protection	7%
Social impacts	
Poverty impacts	9%
Impact on vulnerable groups	6%



Measurement of decision criteria

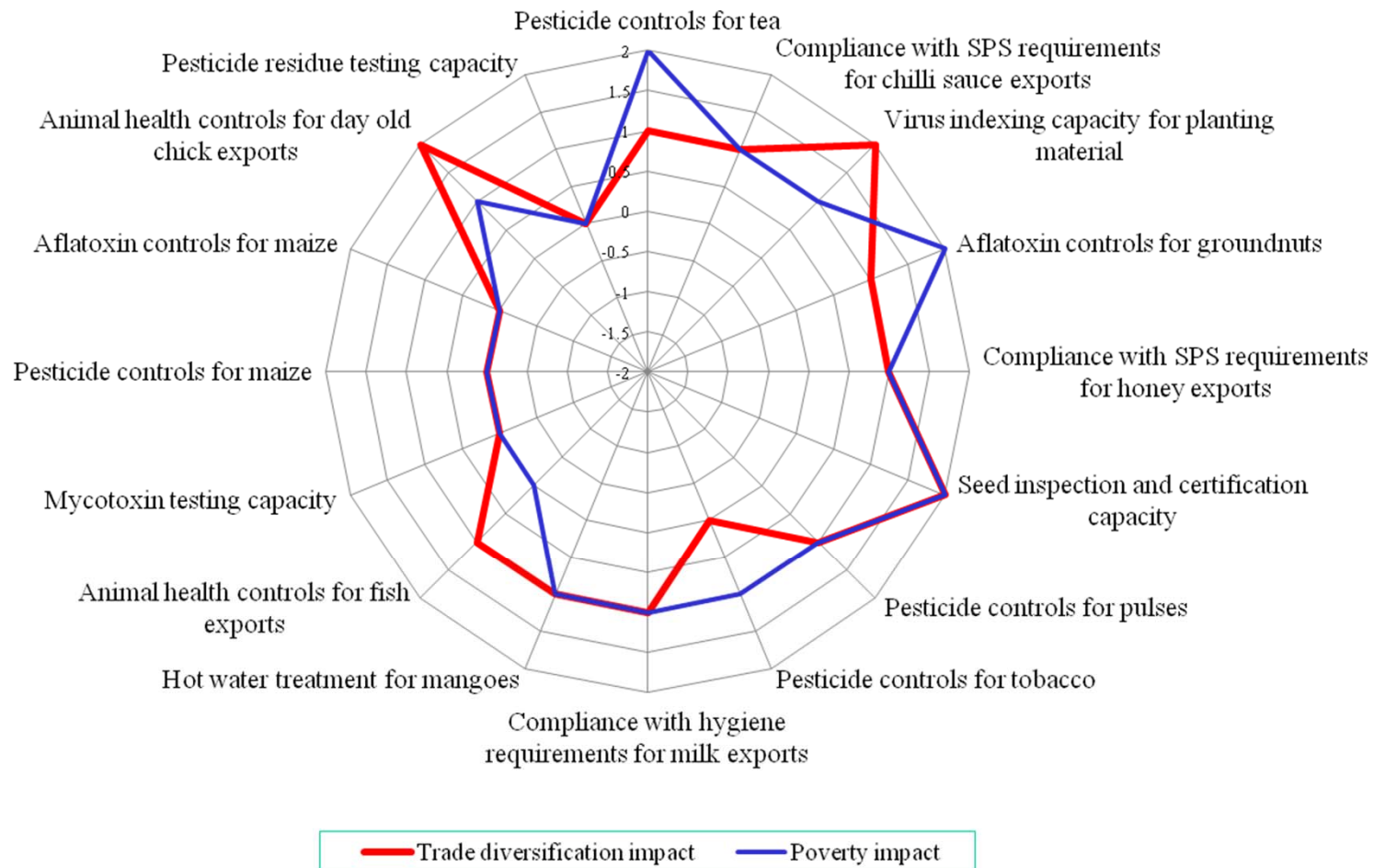
Criterion	Measurement
Cost	
Up-front investment	Absolute value (\$)
On-going costs	% value of exports
Difficulty of implementation	'Very easy' (1) to 'Very difficult' (5)
Trade impact	
Absolute change in value of exports	Absolute value (2017)
Trade diversification	'Large negative' (-2) to 'Large positive' (+2)
Domestic agri-food impacts	
Agricultural/fisheries productivity	'Large negative' (-2) to 'Large positive' (+2)
Domestic public health	
Environmental protection	
Social impacts	
Poverty impacts	'Large negative' (-2) to 'Large positive' (+2)
Impact on vulnerable groups:	

Capacity-building option profiles – hot water treatment for mango



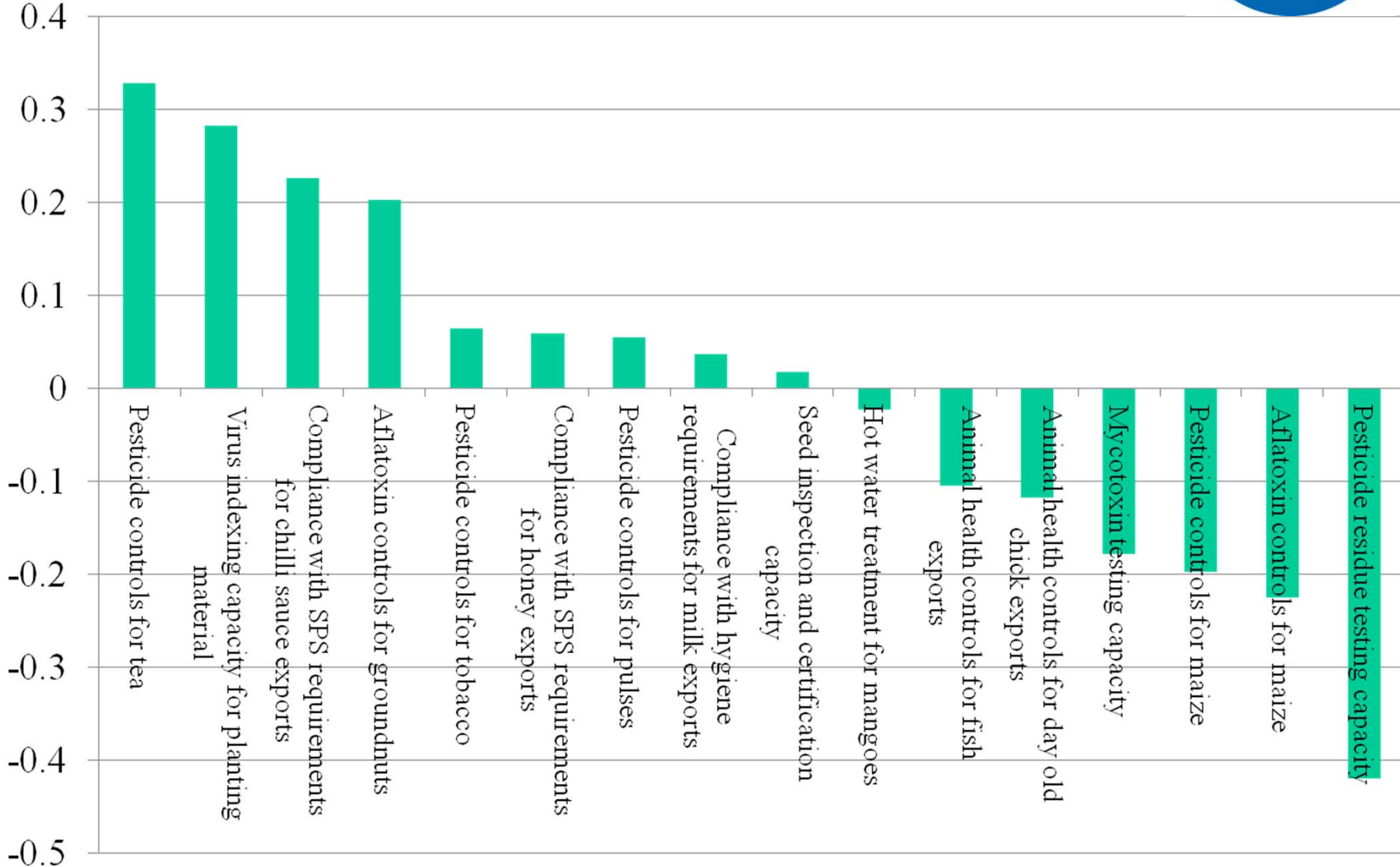
Decision Criterion	Value	Details	Confidence
Cost			
Up-front investment	US\$180,000	Cost of high temperature forced air equipment (\$120,000); Cost of research (\$60,000)	High
On-going cost	0%	Estimated additional cost of \$0.32/kg. However, offset by increase in price, such that overall cost is around zero.	Medium
Ease of implementation	5	Business interest in exports. Requires public sector research involvement. Needs cooperation of South African government	High
Trade impacts			
Change in absolute value of exports	US\$1.0 million	Malawi is an early season producer and so could be a potential market in South Africa, although likely to be quite small.	Medium
Trade diversification	+1	Able to export fresh mangoes into South Africa	High
Domestic agri-food impacts			
Agricultural/fisheries productivity	+1	Some additional returns to mango producers and more commercialised production	Medium
Domestic public health	0	No impact	High
Environmental protection	0	No impact	High
Social impacts			
Poverty impact	+1	Mango for export is not a crop that lends itself well to smallholder production. Limited employment on larger commercial farms and pack-houses.	High
Up-front investment	0	Most production by men and little impact on children. Mainly a smallholder crop in Malawi, although production for export is not that amenable to small farmers.	Medium

Results - Decision criteria measures scores for selected criteria



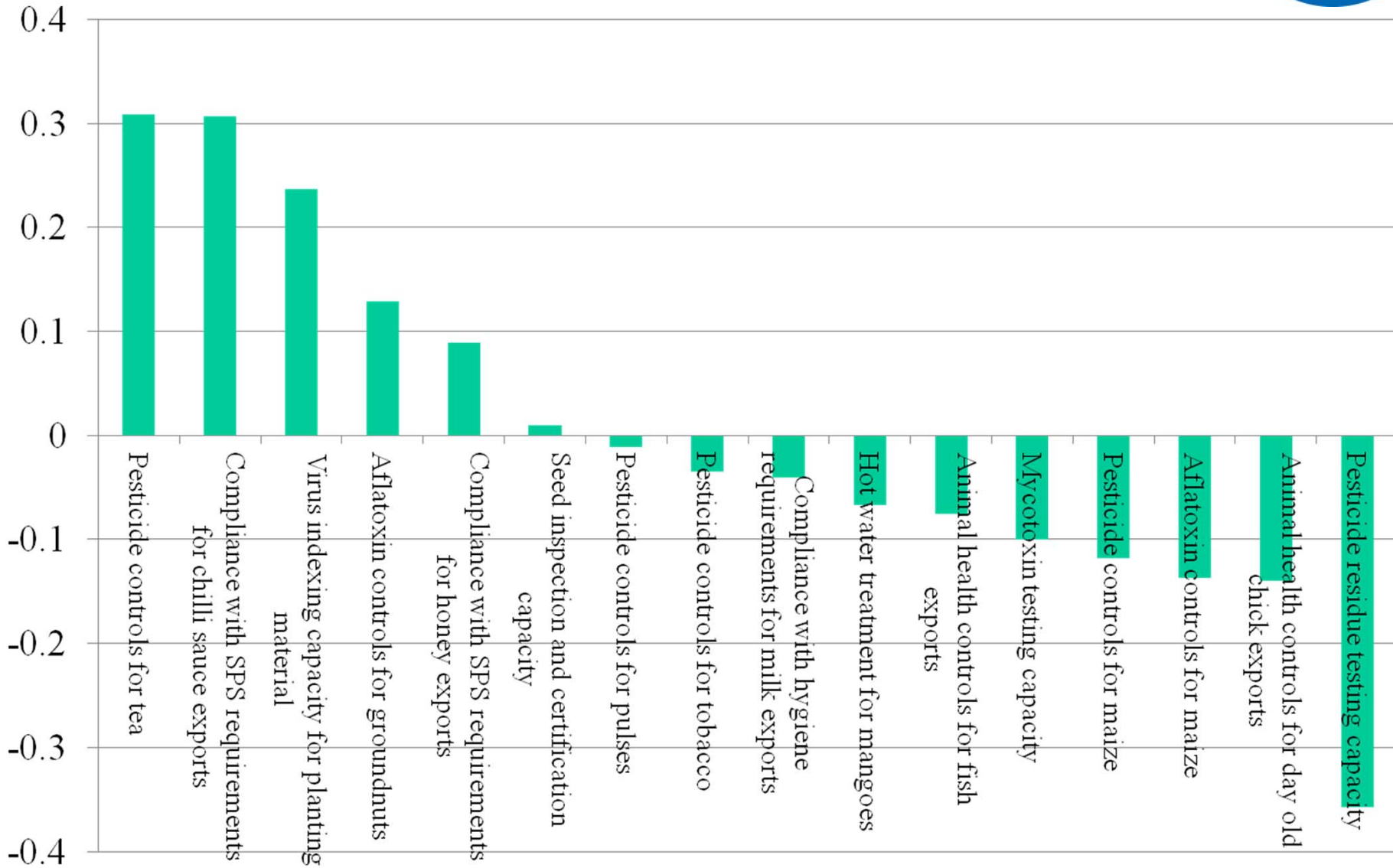


Prioritisation - Baseline model

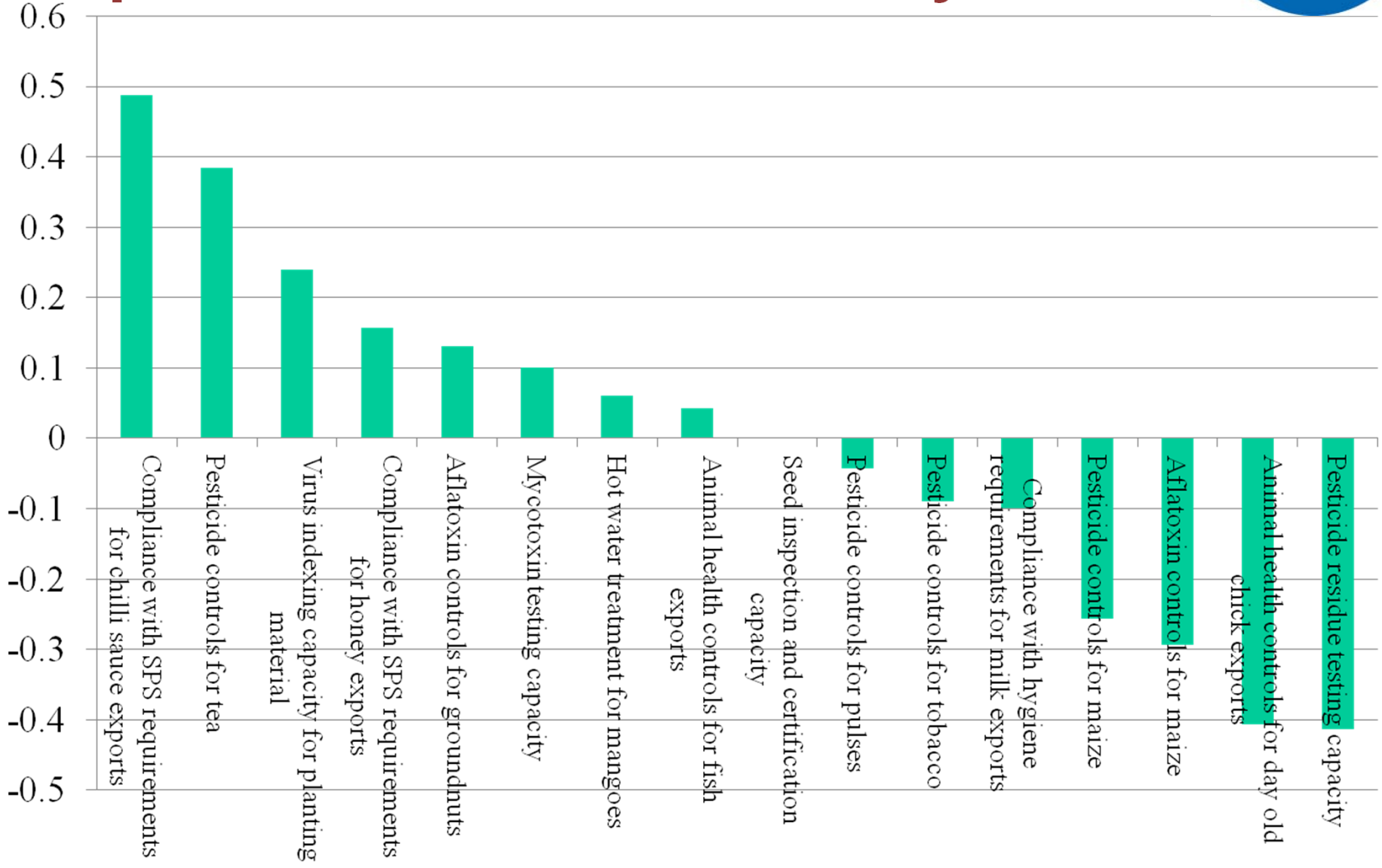




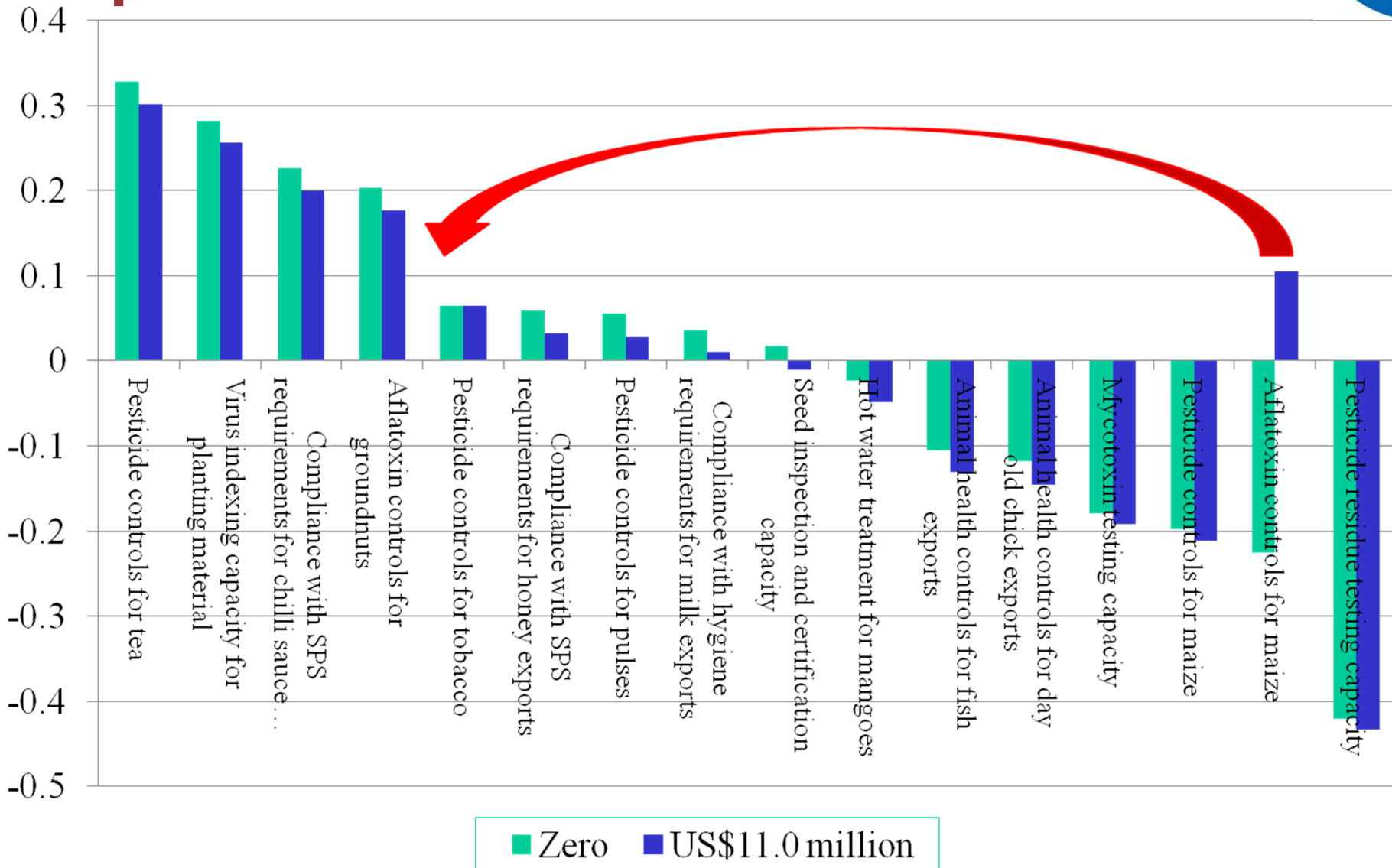
Prioritisation – Equal weights model



Prioritisation – Cost/difficulty of implementation and trade only model

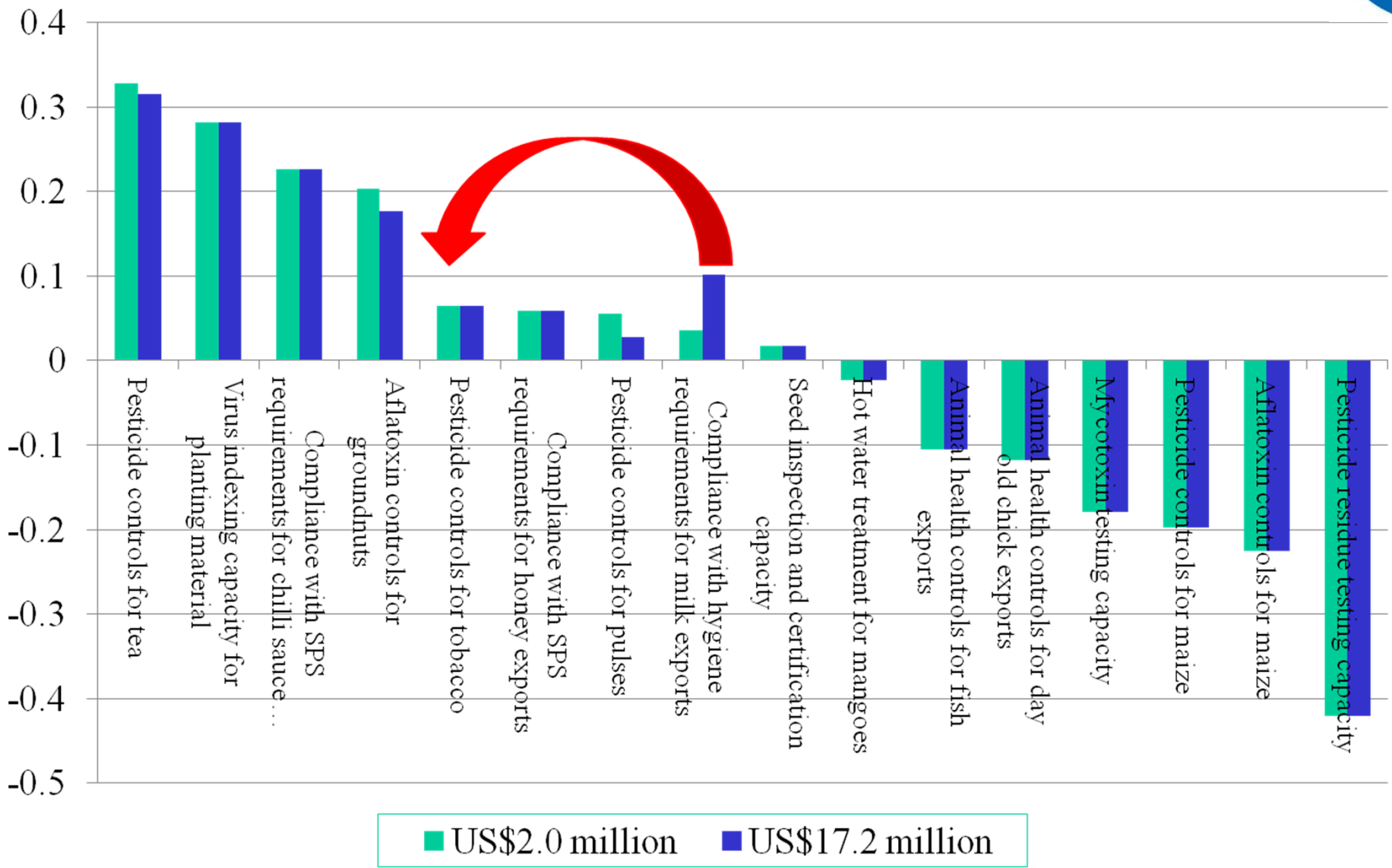


Prioritisation – Adjusting aggregate trade impact of aflatoxin controls for maize





Prioritisation – Adjusting aggregate trade impact of hygiene requirements for milk exports



Validation Workshop

- Held on 28th June 2012
- 24 participants
- Endorsed the results with some minor factual corrections
 - Which led to a sensitivity analysis for Compliance with hygiene requirements for milk and dairy products exports
 - This option came 5th position – instead of its original 8th position in baseline model



Conclusions

- Framework provides objective and transparent approach to deriving priorities for SPS capacity-building
- Results relatively robust
- Framework designed to support capacity-building decisions:
 - Definition of prioritised action plan
 - Compilation of case for national budgetary allocations
 - Compilation of cases/proposals for donor support
- Designed to be used on an on-going basis....
-thus are at the start rather than the finish!



Summary of prioritisation

High priority

- Pesticide controls for tea
- Compliance with SPS requirements for chilli sauce exports
- Virus indexing capacity for planting material
- Aflatoxin controls for groundnuts

Low priority

- Pesticide residue testing capacity
- Pesticide controls for maize
- Animal health controls for day old chicks

Thank you for your attention