



Ministry of Foreign Affairs of the
Netherlands

Improving food security

A systematic review
of the impact of
food security interventions

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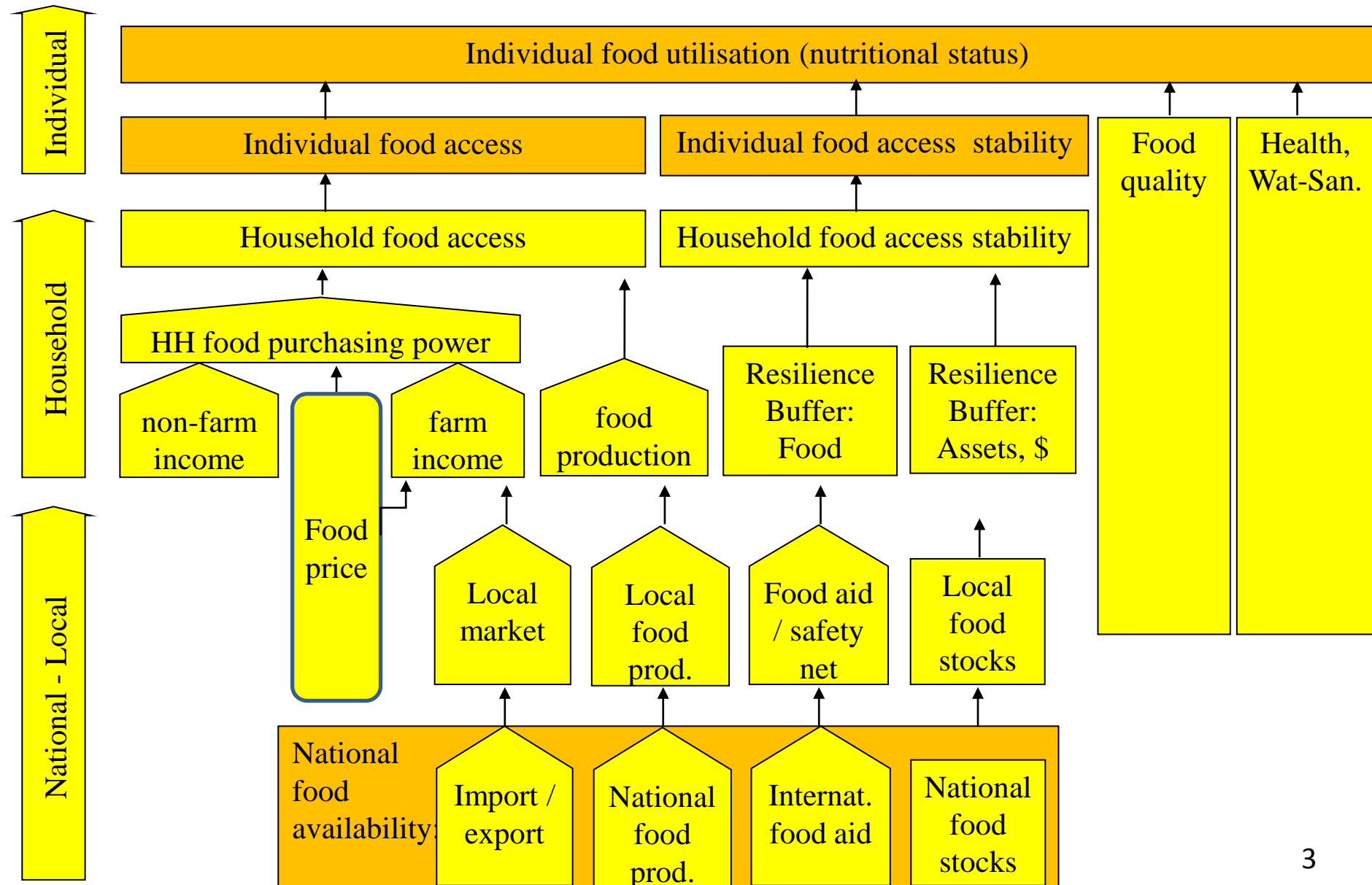
Paris, 26 November 2012



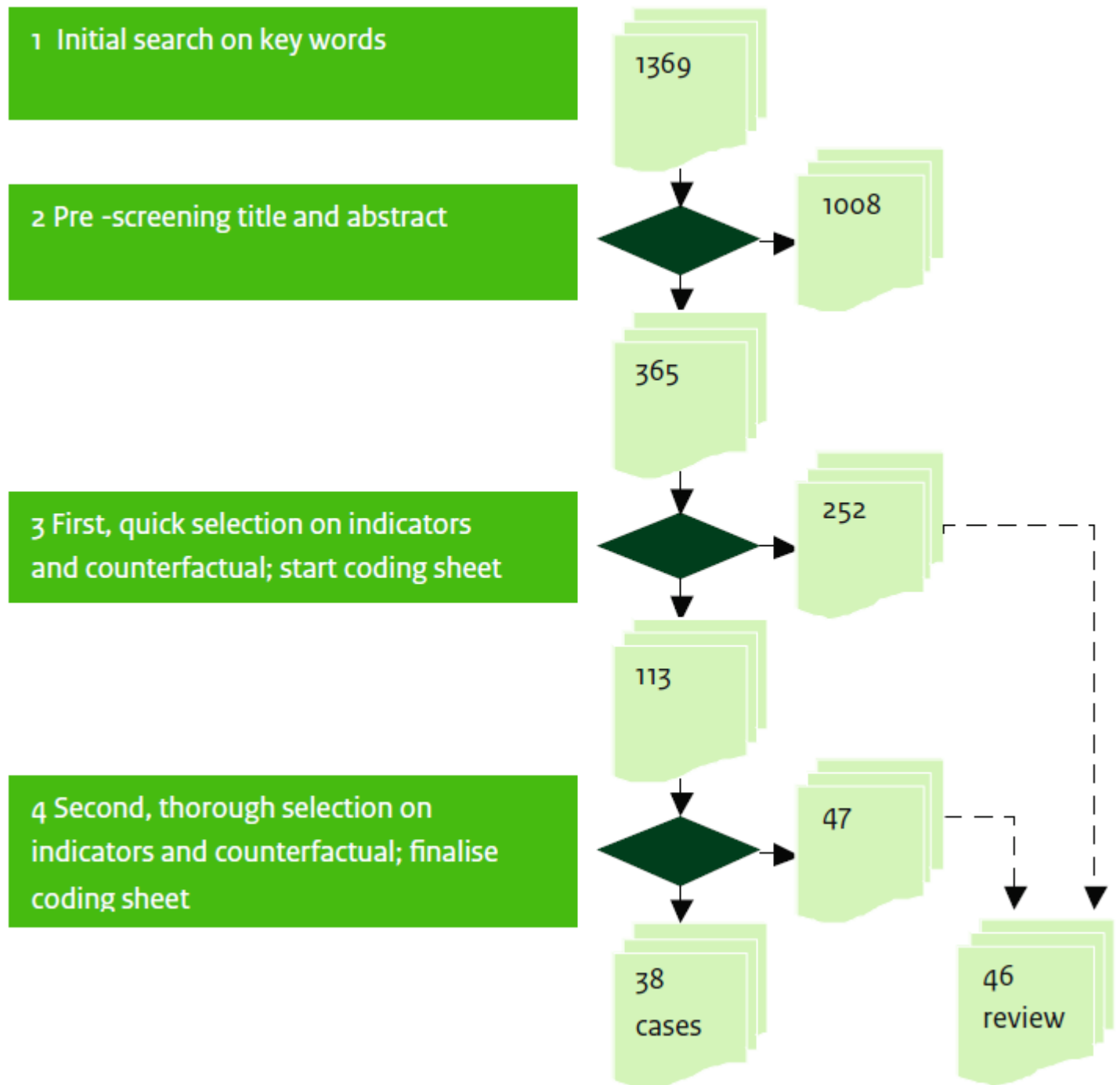
Presentation outline

1. Food security: definitions and impact pathways
2. Systematic review method
3. Key findings on food security interventions:
 - Agricultural production
 - Value chains
 - Market regulation reform
 - Land tenure security
4. Costs and benefits
5. Policy coherence

Food security: definitions and impact pathways



Systematic review “hybrid” methodology





Key findings food security interventions:

1. Increasing agricultural production

- Convincing results:
 - Crop genetic improvement (esp. Asia)
 - Reducing production losses (also in Africa)
- Production increase in Asia:
 - Increased yield and reduced production costs
 - Reduced food prices (relative to wages: indirect impact large scale)
- Stagnating intensification in Africa:
 - More diverse agro-ecological zones
 - Less and later efforts in research;
 - Less and underuse irrigation potential
 - Limited preconditions: market, extension, credit; high input costs



Key findings food security interventions:

2. Value chains (private sector)

- Effective in increasing income
- Domestic and regional markets: potentially many farmers
- Flexibility needed (project; producer organisation)
- Poorest or most vulnerable don't seem to benefit



Key findings food security interventions:

3. Reforming markets (govt policy)

- Poor results where simple reduction of trade barriers was combined with abandoned govt support to agriculture (structural adjustment Africa):
 - Good for competitive export crops
 - Not good for domestic food production
- Better results with gradual, negotiated reform
 - Cotton sector Burkina Faso: from govt to new institutions
 - Rice trade in Vietnam
- Good to reduce price volatility
 - Private trade Bangladesh: recovery from flood in 1998



Key findings food security interventions:

4. Land tenure security

- Land use rights, as part of economic reform China and Vietnam: spectacular results
- Formalising land use rights, or land ownership: encouraged farmer investments
- No effect on access to credit
- Poorest farmers need additional support



Key findings food security interventions: Costs and benefits per household

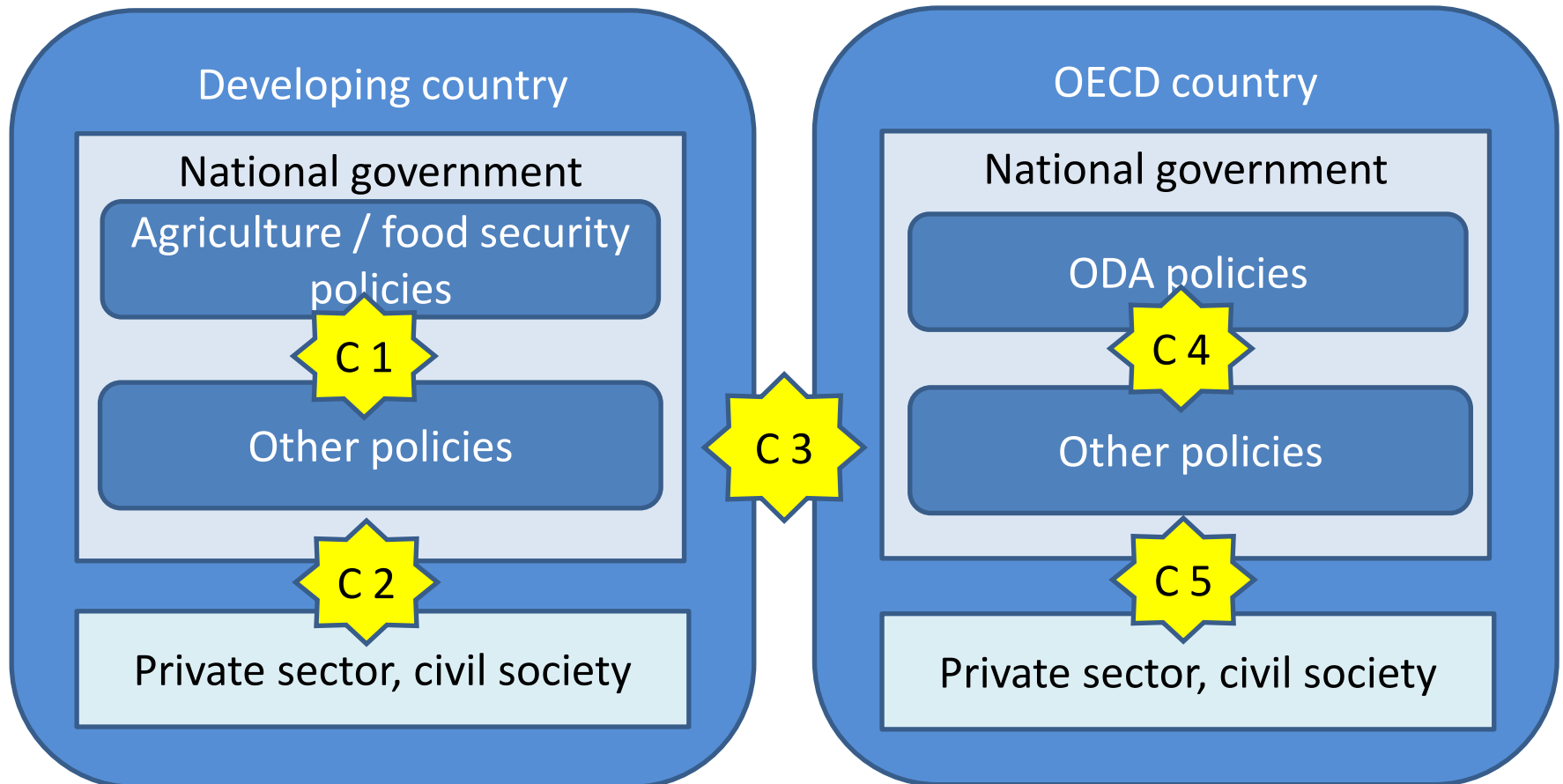
	Cost (\$/hh)	Benefit (\$/hh/y)	B/C
Disease resistant cassava (Mozambique)	\$9	\$25	+++
Organic certified coffee (Uganda)	\$90	\$95	++
Irrigation (India)	\$1,840	\$225	+
Dairy sector (Zambia)	\$3,660	\$340	?
Rust resistance in wheat	\$2/y	\$13	+++
Seed and fertiliser pack (Zimbabwe)	\$37 /y	\$20	?

Reference:

- Available ODA for agriculture (2010): \$8.4 billion
- Malnourished people (2010): 0.9 billion → \$45 / household



Policy coherence - concept





Policy coherence – main results

International research	Result		8+	Developing country		8+	OECD country	
				PS, CS	policies		policies	PS, CS
	8+			5+	2+		3+	2+
	1-			1-				

1. International research collaboration: free exchange info and germplasm

Land tenure and market reform	Developing country		1+	OECD country	
	PS, CS	policies		policies	PS, CS
	3+	3+		1+	
	3+			1+	

2. National policy coherence: synergy land and market reform (China and Vietnam)

Market reform, privatisation	Result		Developing country		1+	OECD country	
			PS, CS	policies		policies	PS, CS
	3+		3+	3+		1+	
	3-		2-1+	3-		2-	1-

3. Market reform: consistency agriculture and trade policy; stakeholder participation

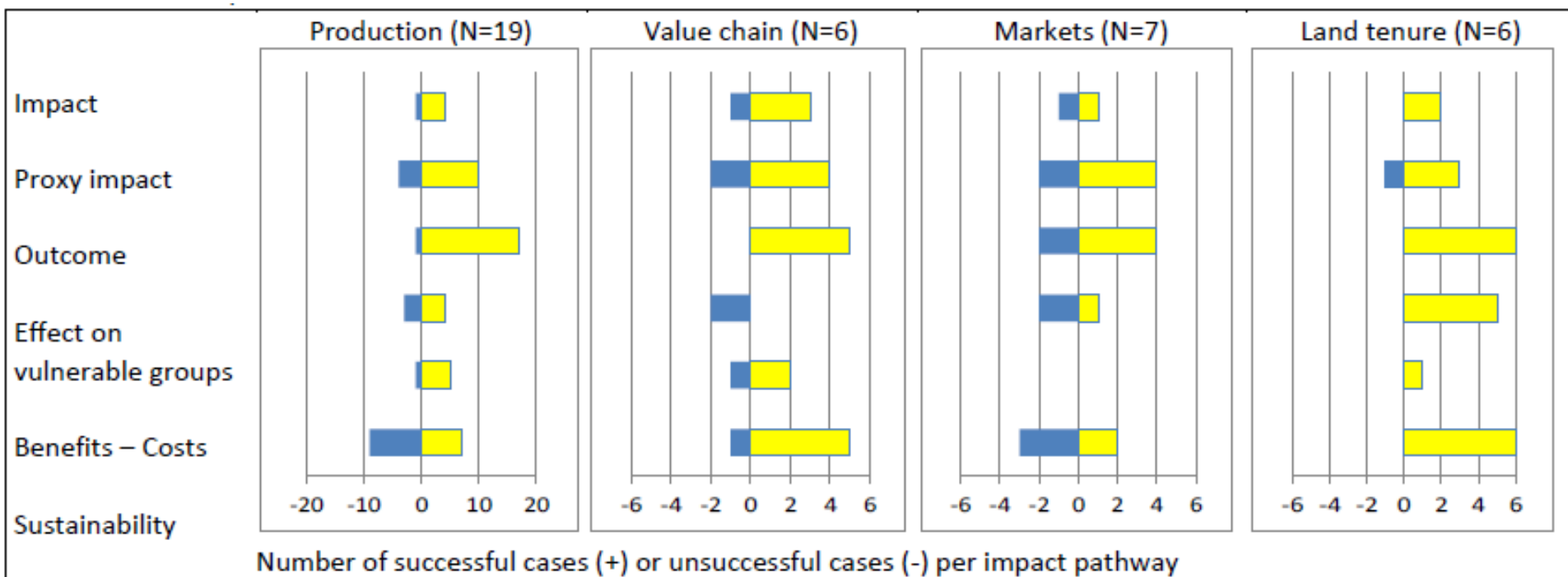


(spare) Systematic review methodology

- Sources: scientific journals and ‘grey’ evaluation reports
- Inclusion criteria:
 - Scope: limited to 4 impact pathways:
Production, Value chains, Market reform, and Land tenure.
 - Indicators: individual FS impact or household proxy impact
 - Evaluation quality: counterfactual (!)
- Hybrid: from >1,300 abstracts → 38 studies + 46 reviews
- Interventions by governments, NGO, multilaterals
- Africa, Asia; (Latin America, worldwide)



(spare) Conclusions overview



(spare) Policy coherence - results				South c.			OECD c.	
	Country	Project	R	C2	C1	C3	C4	C5
	Philippines	Hybrid rice	0/-	-				
	Worldwide	Disease resistant wheat	+++		+	+	+	
	India -Pak.	Reduced tillage	+	+	+/-	+	+	
	Bangladesh	Improved rice	++	+	+/-	+	+	
	Mozambique	Disease resistant cassava	+	+		+		+
	Worldwide	Rinder vaccination	++		+	+		
	Asia	Munbean	+	+		+		
	Nepal	improved varieties	+	+		+		+
	Worldwide	Bio control disease	++			+		
	China	Land and market reform	+++	+	+			
	Vietnam	Land and market reform	+++	+	+	+	+	
	Ethiopia	Land use certificates	+	+				
	India	Inheritance law	(+)	+				
	Peru	land titling	+	+		+		
	Bangaldesh	Private food import	++	+	+			
	Bangladesh	Private irrigation pumps	++	+	+			
	Burkina Faso	Cotton sector reform	+	+	+	+	+	
	Vietnam	Private food trade	++	+	+			
	West Africa	Market reform	-/+	-/+	-/+	-/+	-/+	
	Nepal	Market reform	-/+	-/+	-			
	Ethiopia	privatise seed, fertiliser	-	+	-	-		
	Malawi	Fertiliser subsidy	+	+		+		
	Zimbabwe	Seed and fert. pack	+	+		+		
	India	Irrigation	+	+	+/-	+		
	Kenya	reform research ext.	+/0	+		+		