

IFAD's 2010-2015 impact evaluation initiative :

cost-effective impact evaluation,
the holy grail for development effectiveness

Presented to :
Expert Group for Aid Studies (EBA)
Seminar on "Finding the effects of Swedish aid: How to do it?"

Thomas Elhaut
Director, Statistics and Studies for Development Division

Stockholm, 16 May 2014

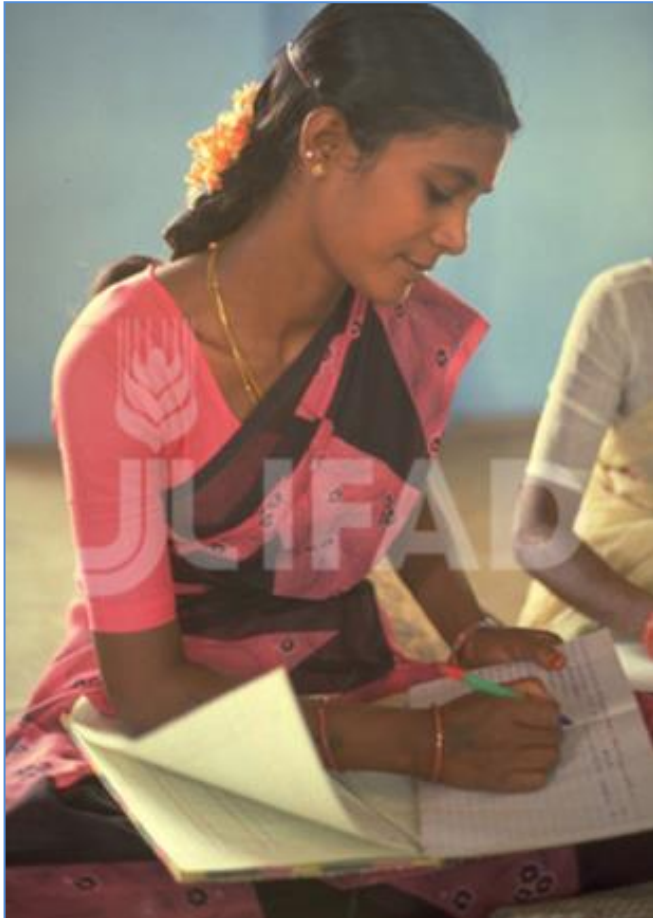


IFAD is ...

- Specialised agency of the UN,
 - one of 3 Rome based agencies (FAO, IFAD, WFP)
 - focussed on agriculture, rural poverty, food and nutrition security
- International financial institution
 - Loans to governments for rural investment programmes
 - Grants for heavily indebted poor countries
- Programme of work:
 - Annually: approx. USD 1 billion, plus cofinancing
 - Annually: 30 projects
 - Ongoing portfolio: 220 investment programmes, worldwide (90 countries), 50% + in Africa
- **Projects are owned by country, implemented by country: projects are responsible for M&E and related procurement**



Questions we share



- Why evaluate impact?
- Which projects to evaluate?
- Which methods?
- How to use impact evaluations?
- Managing impact evaluations.
- Mainstreaming impact evaluation
- Role of national M&E systems
- The cost and financing of impact evaluations



Why evaluate impact?

- **Understand (learning)**
 - Impact pathways, causality, attribution (rigorous ex-post evaluations, deep dives)
 - Innovation (experimental designs, RCTs)
 - Scaling up , informing policy
- **Accountability (mutual accountability)**
 - Multiple levels
 - Country level project management units, to Government (and civil society)
 - IFAD, to its member countries
 - Contribution analysis
 - Using project level results monitoring data (shallow dives: quantitative and qualitative)
 - Statistical inference
- **Methodology development:** rigour, cost-effectiveness, evaluation culture
- **Development effectiveness**



Results monitoring and impact evaluation in IFAD

- 1978 Policies and Criteria for IFAD Financing
- 2003 IFAD's RIMS policy (Results and Impact Management System): process evaluation, impact monitoring
 - Primary focus on 1st and 2nd level results (inputs, outputs)
 - Contribution
- 2013 IFAD IX impact evaluation initiative
 - Rigorous attribution
 - Focus on 3rd and 4th level results, within entire causality chain (outcome and impact)



Impact indicators for IFAD



- **Rural Poverty** (money metric):
 - Income: expenditure, consumption
 - Range of poverty lines
- *Economic mobility*
- Outcome level proxies
 - **Household assets**
 - **Nutritional status (stunting)**
 - **Length of hungry season**
- *Other dimensions of impact*
 - *Empowerment*
 - *Resilience (economic)*



Rigorous impact evaluations

- International Initiative for Impact Evaluation (3ie):
 - "analyses that measure the net change in outcomes
 - for a particular group of people
 - that can be **attributed** to a specific program
 - using the best methodology available, feasible and appropriate
 - to the evaluation question that is being investigated and
 - to the specific context".
- World Bank's DIME Initiative:
 - "Impact evaluations compare the outcomes of a program
 - against a **counterfactual** that shows what would have happened to beneficiaries without the program.
 - Unlike other forms of evaluation, they permit the attribution of observed changes in outcomes to the program being evaluated
 - by following experimental and quasi-experimental designs".



Rigorous impact evaluations

- From contribution (correlation) ...
- to attribution (causality)
 - Counterfactual: comparison groups (control groups)
 - Panel data
 - Randomisation: avoid selection biases
 - Random assignment
 - Representative surveys of eligible population to enhance external validity

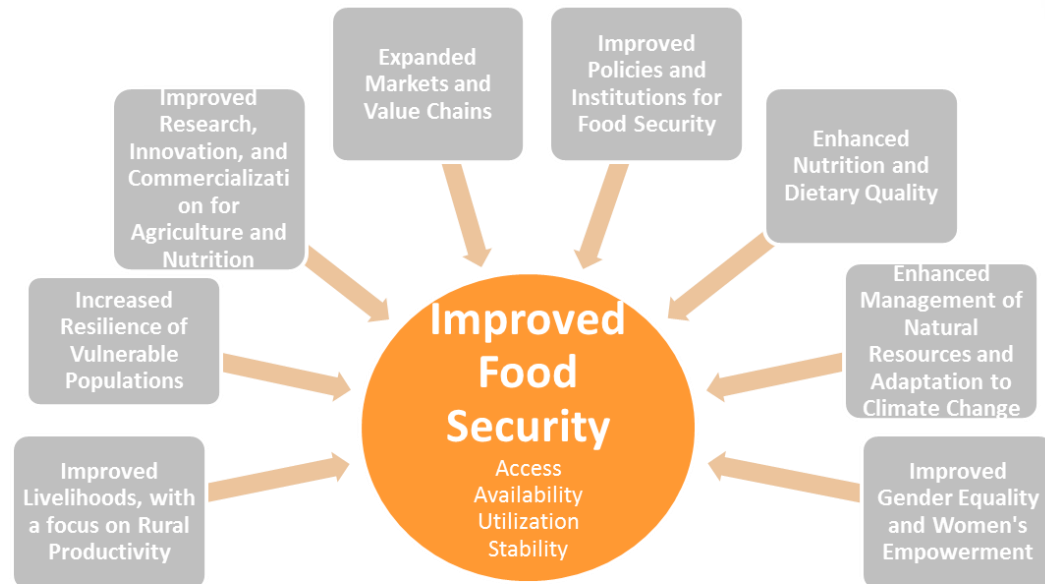
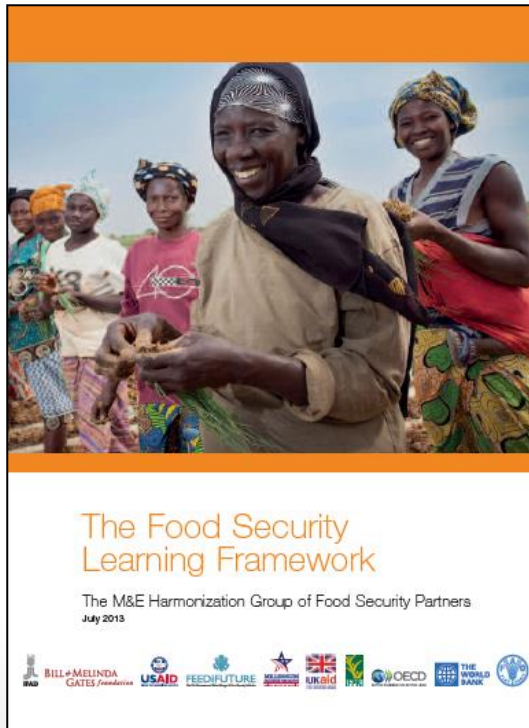


Evaluation methods: on a scale of rigour

- 3 – 6 Randomised controlled trials (experimental design): supporting IFAD's innovation agenda
 - 3IE agricultural innovation window
 - Specific research protocols
- 24 - 27 Rigorous ex-post evaluations (quasi- and non-experimental design): supporting IFAD's scaling up agenda
 - 5 diverse centres of excellence
 - Mixed methods: theory based, quantitative, qualitative
 - PSM (propensity score matching)
- 55 shallow dives: supporting the accountability agenda
 - 5 - 8 quantitative
 - 47 – 50 qualitative
- Impact of agricultural research on rural poverty
- Impact of policy change on rural poverty
- Systematic reviews and meta-studies
- Statistical inference to entire portfolio: supporting the accountability agenda



Methodological aspects: theory-based evaluation





Methodology challenges (1)

- RCTs: gold standard, when applied to “silver bullets”, but ...
 - Defining the researchable question
 - Randomisation (in targeted projects)
 - Commitment of the project staff: implementation strategy
 - Strong internal validity (external validity ?)
- Ex-post evaluations
 - Long term programmes (typically 7 years)
 - Shocks (programmes designed 2004-2009: 2008 food price hike)
 - Recall (when baselines are incomplete)
 - Panel data (without geo-referencing and when migration is high)
 - General equilibrium effects: growth, inequality, higher real prices ...
 - Target group definition
 - Clarity of the theory of change
 - Multiple treatment (heterogeneity)
 - Seasonality
 - Evaluation at project completion (resilience)
 - Repeat projects (second phases)



Methodology challenges (2)

- **Validity:**
internal and external
 - confounding factors
 - selection bias
 - impact heterogeneity
 - spill-overs
 - contamination
- **Project selection: grid**
 - Random selection: for statistical representativeness and inference to portfolio
 - Purposive add-ons

Project types, FSLA learning dimensions, ...							
	1	.	.	3	.	.	n
APR							
ESA							
LAC							
NEN							
WCA							
The dots represent the population of project; the selected projects are represented by the red dot.							



Methodology challenges (3)

- Analytical aspects: **no comparison group in RIMS policy**
 - single difference
 - propensity score matching
 - *When secondary data are available: difference-in-difference*
- Cost benefit considerations
 - Limited sample sizes (especially in cases of multiple treatment)
 - Size (complexity) of survey questionnaires ... and
 - time involved for surveyed households



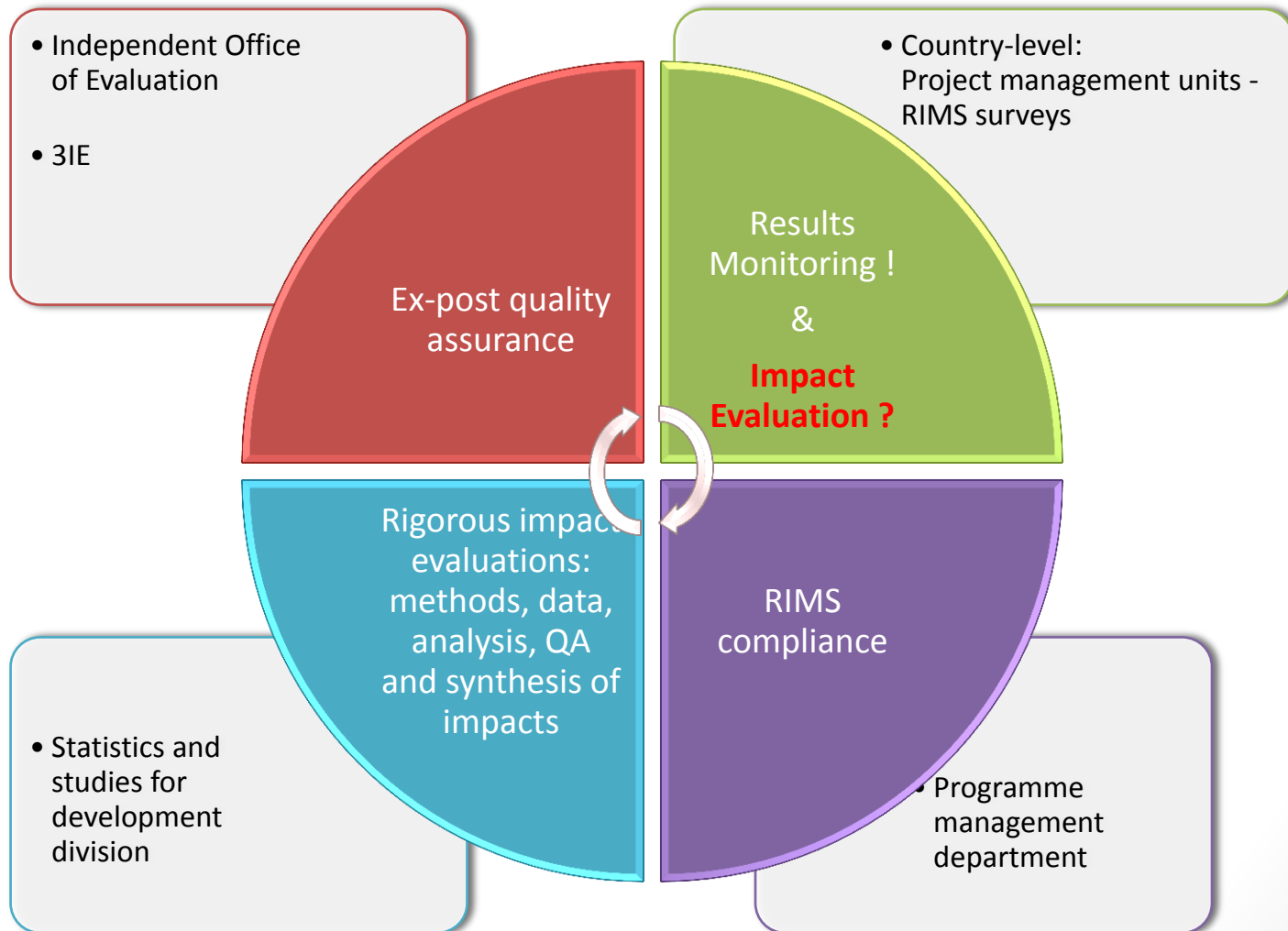
The financing question

- Cost ranges
 - RCTs: 500,000 to 1,000,000 USD
 - Ex-post evaluations: 200,000 350,000 500,000
 - Shallow dives: 30,000 – 50,000
- Options
 - Included as part of the programme activities and included in programme costs, linking to and strengthening **national systems**
 - Financed with a specific grant
 - Financed from the administrative budget
- Decision criteria
 - Who needs the knowledge, who needs accountability?
 - Global public good
 - How much capacity building?
- Need for ODA level agreement on how to finance impact evaluations



Organisational set-up in IFAD :

division of labour, checks and balances





Organisational arrangements

- Shift in approach
 - From “turn key” studies commissioned ... to local capacity building
 - From staff lead ... to staff oversight (methodology)
- Partnerships with centres of excellence



Conclusion

- Need to know what works, why and how:
 - from contribution to attribution
 - For scaling up and to inform policy
- Who is responsible? Who is accountable?
Who needs to know?
- Diversity of methods:
matching with programme characteristics and objectives
- Cost effectiveness of methods
- Emphasis on local capacity building
- Which partners, with which role?
- How to finance?



Possible way forward for IFAD ?

RIMS +++ and do we need to evaluate all projects and at what cost?



- All portfolio:
 - **RIMS++ compliant**
 - Target group definition
 - Sampling framework and randomisation
 - Comparison groups (panel data)
 - 3 observations: resilience
 - Correlation, contribution (attribution ?)
 - Basis for statistical inference
- 9 purposively selected deep dives **strategically significant projects**
 - Causality, attribution
 - Theory of change
 - Scaling up
- 3 thematic groups of RCTs **innovative projects (experimental designs)**
 - Multi-country experimental designs
 - Scaling up
 - (all of IFAD's research grants?)
- Ad hoc studies
 - After shocks
 - Special issues



Thank you for your attention.

contact: t.elhaut@ifad.org





RCT for



agricultural
innovation
window

- **Ethiopia - PCDP III Rural Livelihood Program**
 - *Mannheim University*
 - Stimulating investment and **technology take-up through cost-effective services** . Measuring the effect of SACCO services. (policy relevance of the savings product tested)
- **Cambodia - ASPIRE**
 - *IFPRI*
 - Testing **innovative models of extension**
- **Sierra Leone – SCP**
 - *IPA*
 - Experimental evidence from **land rehabilitation, collective farming** and agricultural production
- **Uganda - VODP II - Oil Seed Value-Chain Finance**
 - *Associazione Centro Studi Luca D'Agliano*
 - Experimental evidence on the impact of **interlinked credit and transactions** on smallholders' production choices, productivity, market power and income. (high policy relevance)
- **Ghana - GASIP**
 - *IPA/IFPRI*
 - Evidence from Soy : nutritional information, farmer food preferences and production of **non-traditional food crops** in Northern Ghana

Deep dives: rigorous impact evaluations

	Region	Country	Project Name	Project Type	IFAD Financing (USD '000)	Direct beneficiaries	Indirect beneficiaries	Selection basis	Who?
1	APR	Philippines	RuMePP	CREDI	19 130	1 000 000		Random	3ie
2	APR	Cambodia	Rural Livelihoods	AGRIC	12 014	113 000	56 500	Purposive	IDS/UEA
3	APR	Laos	Attapeu and Sayabouri	RURAL	20 491	131 000		Random	IDS/UEA
4	APR	Pakistan	MIOP	CREDI	26 456	900 000		Random	IDS/UEA
5	APR	Pakistan	PRISM	CREDI	35 006	800 000		Purposive	IDS/UEA
6	APR	Bangladesh	Sunamganj Project	AGRIC	21 973	675 000		Random	IFPRI
7	APR	Bangladesh	MFMSFP	CREDI	20 059	1 050 000		Random	IFPRI
8	APR	China	South Gansu PRP	AGRIC	29 254	1 500 000		Purposive	Shuai
9	APR	China	MRDP - XUAR	AGRIC	25 148	792 000		Purposive	Shuai
10	APR	China	IMARRAP	AGRIC	30 001	625 000		Purposive	Shuai
11	APR	China	DAPRP	AGRIC	31 875	385 000		Purposive	Shuai
12	APR	China	SPEAR	RURAL	30 470	280 000		Purposive	Shuai
13	APR	India	Orissa Tribal Empowerment	AGRIC	34 996	338 000		Purposive	
14	ESA	Malawi	RLSP	RURAL	14 780	192 000		Random	IFPRI
15	ESA	Zambia	Rural Finance Programme	CREDI	13 811	750 000		Random	KIT
16	ESA	Uganda	CAIIP-1	RURAL	31 987	1 000 000	3 700 000	Random	KIT
17	ESA	Madagascar	PPRR	RURAL	14 500	200 000		Random	PEP
18	ESA	Kenya	Dairy Programme	AGRIC	18 335	120 000		Purposive	PEP
19	ESA	Madagascar	Menabe and Melaky Regions (AD2M)	AGRIC	18 655	200 000		Random	PEP
20	ESA	Kenya	Horticulture Programme	MRKTG	23 930	60 000	425 000	Purposive	PEP
21	ESA	Ethiopia	Small-scale Irrigation	IRRIG	39 997	310 000		Random	PEP
22	ESA	Madagascar	PROSPERER	AGRIC	29 041	250 000	105 000	Random	PEP
23	LAC	Colombia	OPORTUNIDADES	CREDI	20 000	134 400		Purposive	ICF
24	LAC	Nicaragua	PRODESEC	RURAL	14 000	66 000	245 300	Random	ICF
25	LAC	Peru	SIERRA SUR	RURAL	24 586	75 000		Random	IFPRI
26	NEN	Egypt	West Noubaria	STLLM	18 485	135 000	135 000	Purposive	ICF
27	NEN	Yemen	Al-Dhala	RURAL	14 349	38 900		Random	ICF
28	NEN	Sudan	WSRMP (LOT)	RURAL	25 463	255 000	10 000	Random	ICF
29	WCA	Ghana	REP II	RSRCH	11 245	400 000		Purposive	IDS/UEA
30	WCA	Gambia, The	PIWAMP	AGRIC	7 085	60 000		Random	KIT
31	WCA	Burkina Faso	PDRD	AGRIC	16 029	150 000		Purposive	KIT
32	WCA	Senegal	MATAM 2/PRODAM II	RURAL	12 508	150 000		Purposive	
33	WCA	Ghana	NRGP	RURAL	22 725	225 000		Purposive	
					728 384	13 360 300	4 676 800		



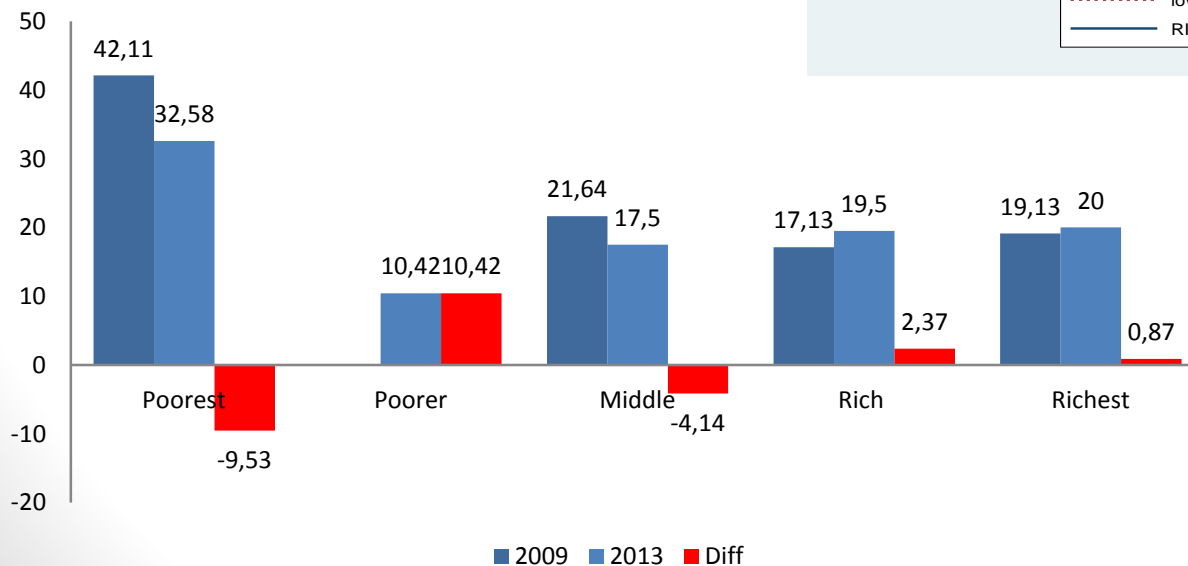
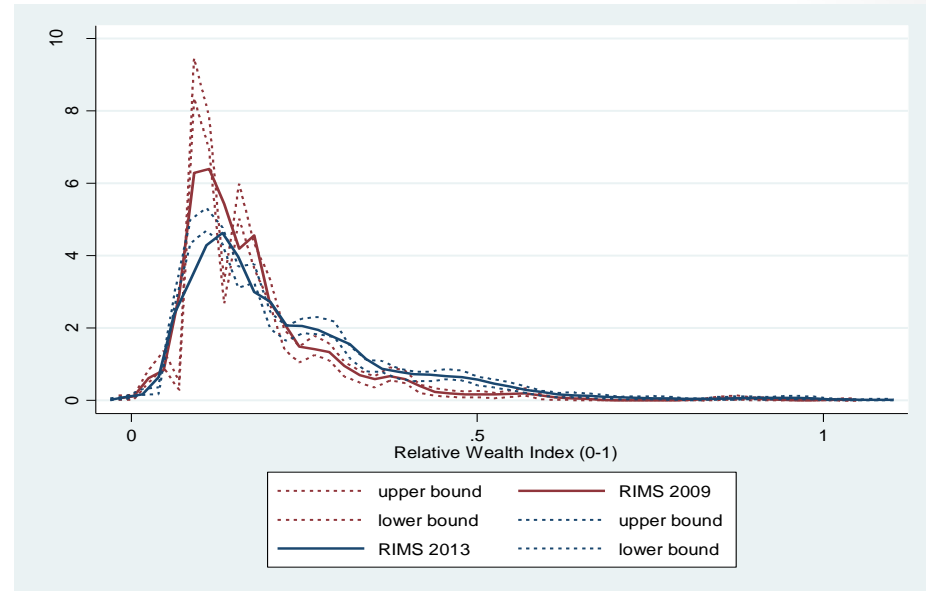
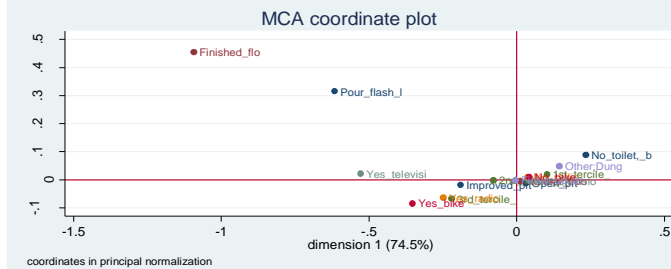
Deep dives: reserves

	Region	Country	Project Name	Project Type	IFAD Financing (USD '000)	Direct beneficiaries	Indirect beneficiaries	Selection basis	Who?
1	APR	Mongolia	RPRP	RURAL	14 806	360 000		Random	n.a.
2	APR	India	Himalayas Livelihoods	CREDI	39 920	360 000		Random	n.a.
3	APR	Bangladesh	MFTSP	CREDI	16 298	1 380 000		Random	n.a.
4	APR	Bhutan	AMEPP	RURAL	14 007	110 000		Random	n.a.
5	APR	Maldives	FADiP	AGRIC	3 505	8 400		Random	n.a.
6	ESA	Lesotho	Agric & Natural Resource	AGRIC	10 129	125 000		Random	n.a.
7	ESA	Swaziland	Lower Usuthu Irrigation I	IRRIG	14 958	15 300		Random	n.a.
8	ESA	Lesotho	Rural Financial Programme	CREDI	8 688	37 000		Random	n.a.
9	LAC	Paraguay	Paraguay Rural	RURAL	15 116	98 700		Purposive	n.a.
10	LAC	Nicaragua	PROCAVAL	MRKTG	20 328	109 200		Purposive	n.a.
11	NEN	Yemen	Dhamar Development	RURAL	21 515	130 000	150 000	Random	n.a.
12	NEN	Sudan	GASH	AGRIC	24 946	360 000	120 000	Random	n.a.
13	WCA	Mauritania	Oasis Sustainable Dev.	RURAL	11 408	250 000		Purposive	n.a.
14	WCA	Chad	PADER-G	RURAL	17 400	130 000		Purposive	n.a.
					233 024	3 473 600	270 000		



Qt shallow dives: Bangladesh

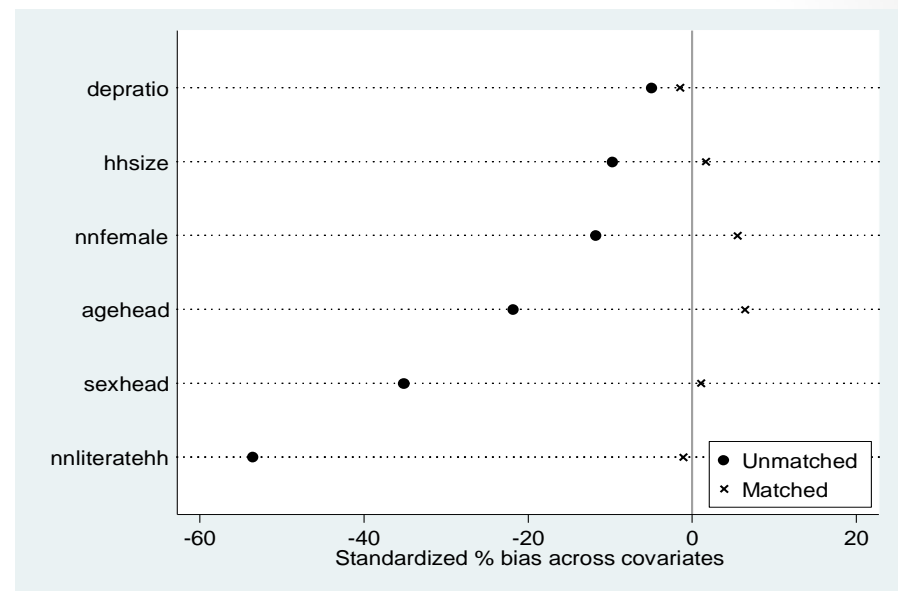
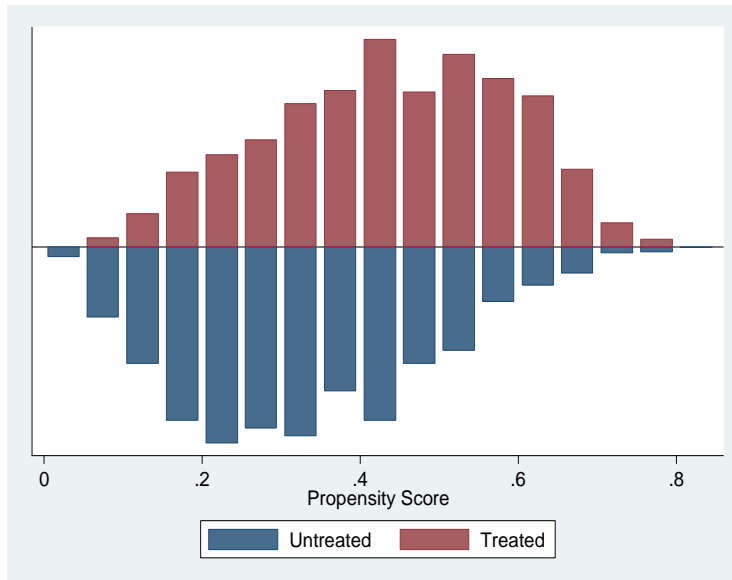
Multiple correspondence analysis Household assets



7342 HHs or 36,713 people



Qt shallow dives: Bangladesh (cntd)



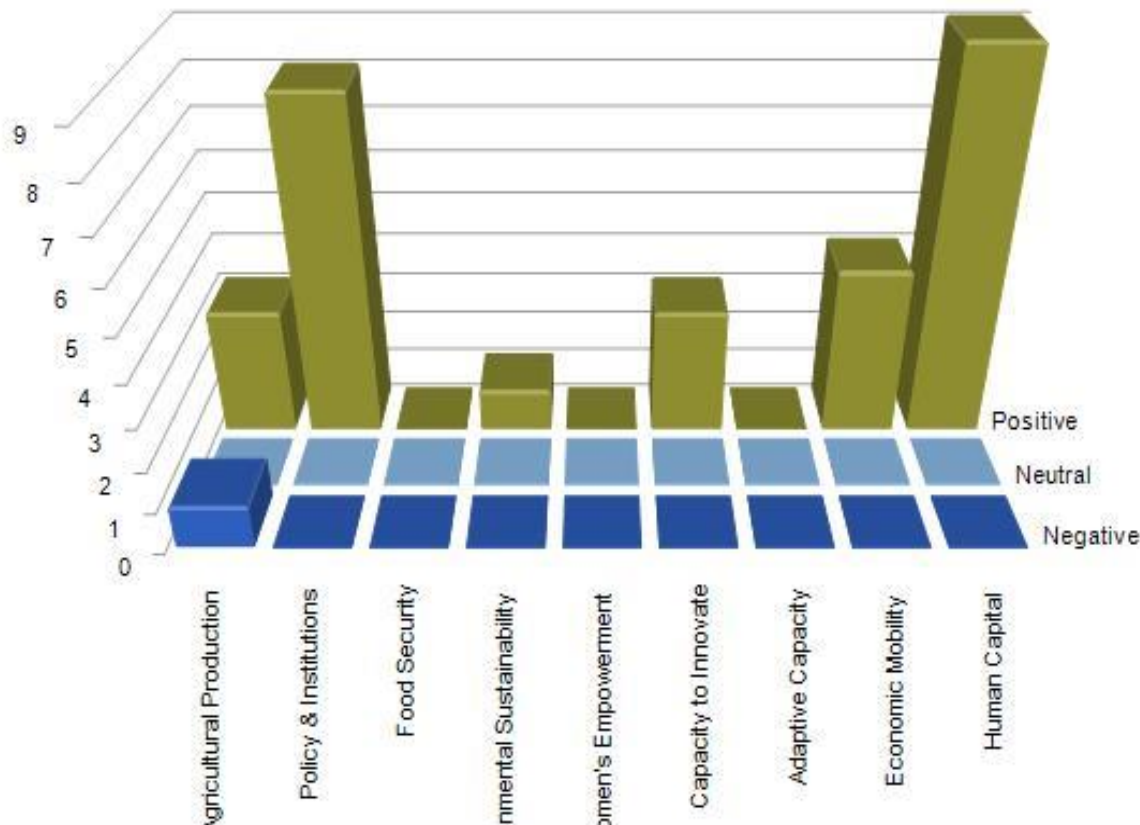
Balance							
Variable	Matched	Treated	Control	%bias	bias	t	p>t
N. female	U	2.66	2.82	-11.7		-3.17	0.002***
	M	2.66	2.58	5.5	53.1	1.4	0.16
HH size	U	5.24	5.45	-9.7		-2.58	0.010***
	M	5.24	5.20	1.7	82.7	0.43	0.667
Dependency ratio	U	104.30	108.18	-4.9		-1.32	0.187
	M	104.30	105.48	-1.5	69.5	-0.41	0.685
N. literate	U	2.13	3.13	-53.5		-14.42	0.000***
	M	2.13	2.15	-1.1	97.9	-0.3	0.764
Sex head	U	1.06	1.18	-35.1		-9.17	0.000***
	M	1.06	1.06	1	97	0.34	0.736
Age head	U	42.32	45.36	-21.8		-5.85	0.000***
	M	42.32	41.42	6.4	70.5	1.64	0.102

(25)



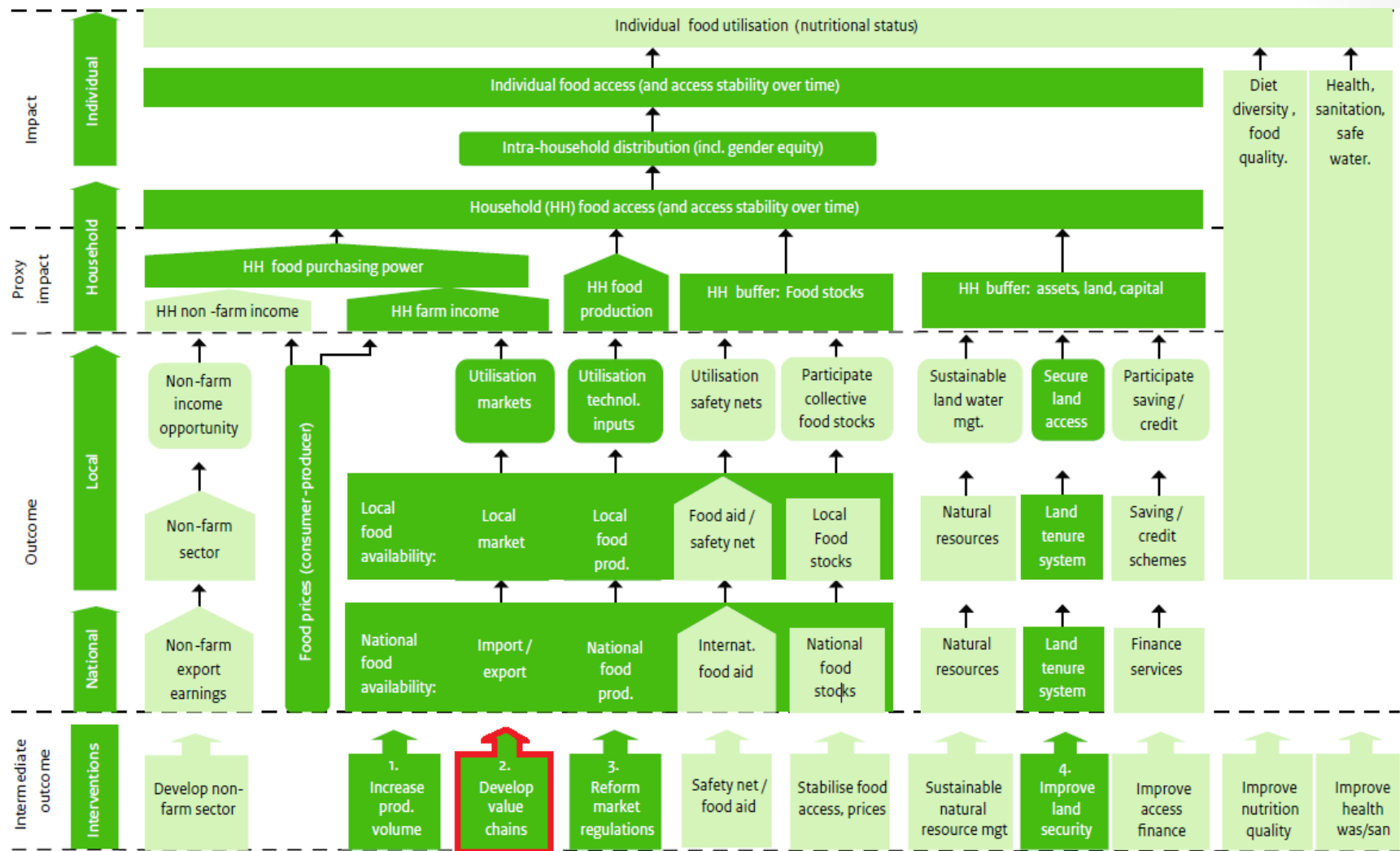
QI shallow dives

Code Matrix (SSD) - Rwanda 1320





Impact pathways of value chain intervention



SLOS



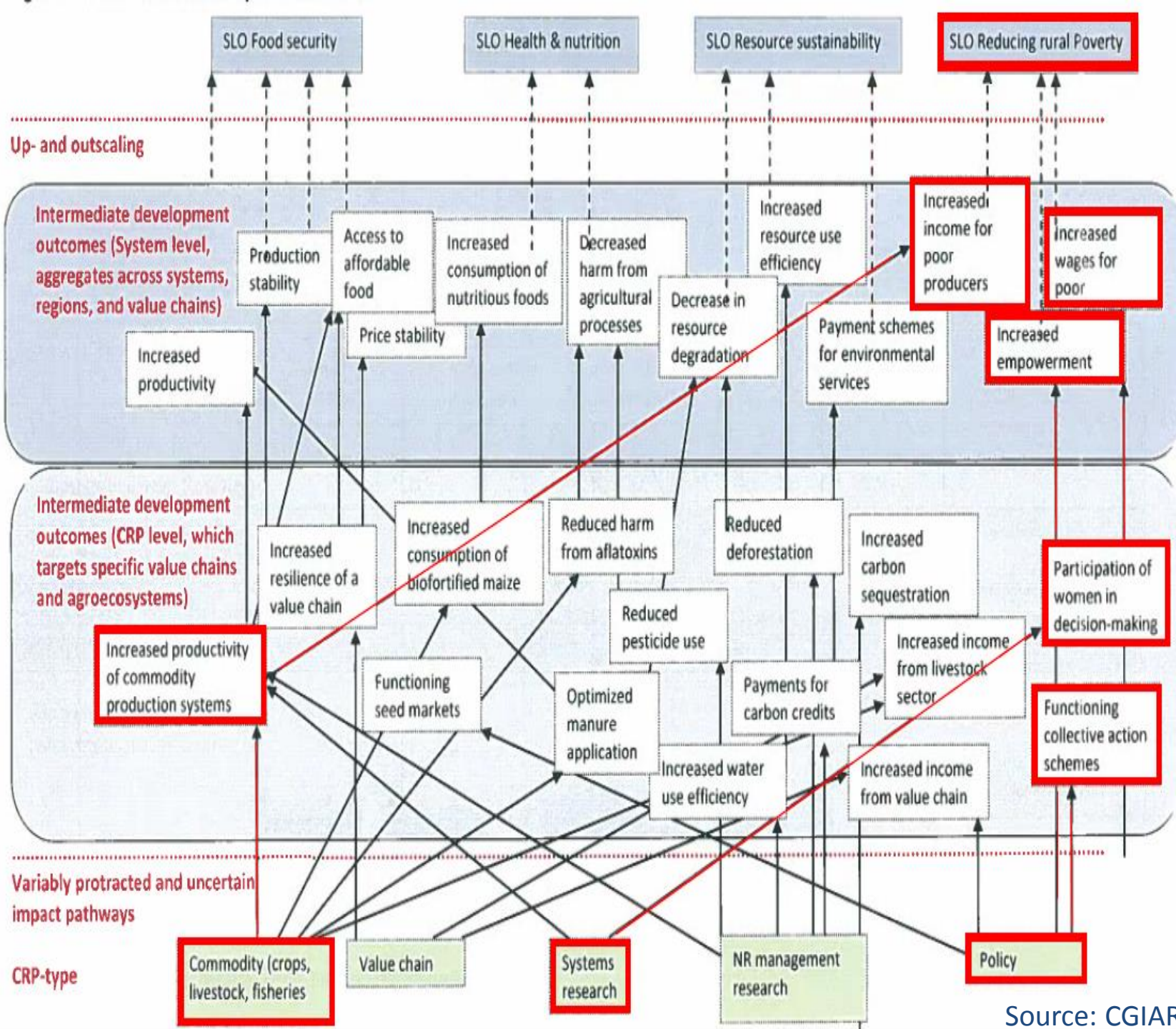
System-level IDs



CRP -level IDs



RESEARCH OUTCOMES





Systematic review of impact of agricultural research

- 6 studies with Propensity Score Matching (PSM)
- 5 studies with Instrumental Variables (IV)



6 studies with Propensity Score Matching (PSM)

YEAR	Country	Crop	Poverty type	Poverty alleviation
2007	BANGLADESH	RICE	Poverty type: calories intake Poverty line: USD 0.29/capita/day	Adopters less likely to be poor by: - 14%
2009	MEXICO	MAIZE	Poverty type: cash poverty Poverty line: MXP 1.124/capita/month (in 2005)	Adopters less likely to be poor by: - 18%
2010	MEXICO	MAIZE	Poverty type: Food-poverty (expenditure on food) Poverty line: USD 1.2/capita/day	Probability to fall below the poverty line: Hybrid - 38% Creolised - 20%
2010	CHINA	RICE	Poverty type: cash poverty Poverty line: 2000: USD 0.24/capita/day 2002: USD 0.25/capita/day 2004: USD 0.26/capita/day	Poverty gap index 2000: - 5-8.6 % 2002: - 4-6.1 % 2004: - 1-3.2 %
2011	UGANDA	GROUNDNUT	Poverty type: cash poverty Poverty line: 2000: USD 1/capita/day	Head count index - 7-9 % Poverty gap index - 4.5-6 %
2012	TANZANIA	PIGEONPEA	Poverty type: basic needs poverty Poverty line: TSh 468/capita/day (2008) USD 0.29/capita/day* *Converted with today exchange rate no inflation considered	Head count index - 12-13 % Poverty gap index - 8-10 %



5 studies with Instrumental Variables (IV)

YEAR	Country	Crop	Poverty type	Poverty alleviation
2008	MADAGASCAR	RICE	Poverty type: cash poverty Poverty line: USD 0.43/capita/day	A doubling of the rice yields is associated with a reduction of the number of perceived food insecure households by 38%
2011	NIGERIA	MAIZE	Poverty type: cash poverty Poverty line: NR	Rice income and expenditure increase by: (by poverty status) <u>Poverty gap:</u> - income = + ND 52718.12 (***) - expenditure = + ND 1568.65 (***) <u>Headcount ratio:</u> - income = + ND 69171.67 (***) - expenditure = + ND 1462.93 (***) <u>Poverty severity:</u> - income = + ND 72752.3 (***) - expenditure = + ND 662.19 (***)
2013	ETHIOPIA	MAIZE	Poverty type: cash poverty Poverty line: USD 1-1.25-1.45/capita/day	Headcount ratio: - 0,7-1.3 % People pulled out of poverty = 1.8-3.3% Poverty gap: - 0.26-0.48 % People pulled out of poverty = 2.3-2.7% Poverty severity: - 0.14 to - 0.44 % People pulled out of poverty = 2.9-4.3%
2014	KENYA	MAIZE	Poverty type: cash poverty Poverty line: 2000: KES 1009 /capita/month 2004: KES 1336/capita/month 2007: KES 1629/capita/month 2010: KES 2144/capita/month	Poverty gap index 2000: - 5-8.6 % 2002: - 4-6.1 % 2004: - 1-3.2 %
2104	ZAMBIA	MAIZE	Poverty type: cash poverty Poverty line: NR	Poverty gap index 10 kg of subsidized hybrid seeds reduce the HH-specific poverty gap by: - 0.8%