Long-term behavioral impact of an integrated home garden intervention in Bangladesh

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IGZ

World Vegetable Center

Introduction

Micronutrient deficiencies affect ~2 billion people.

Fortification, supplementation and biofortification are proven solutions, but do not directly address the root causes of the problem:

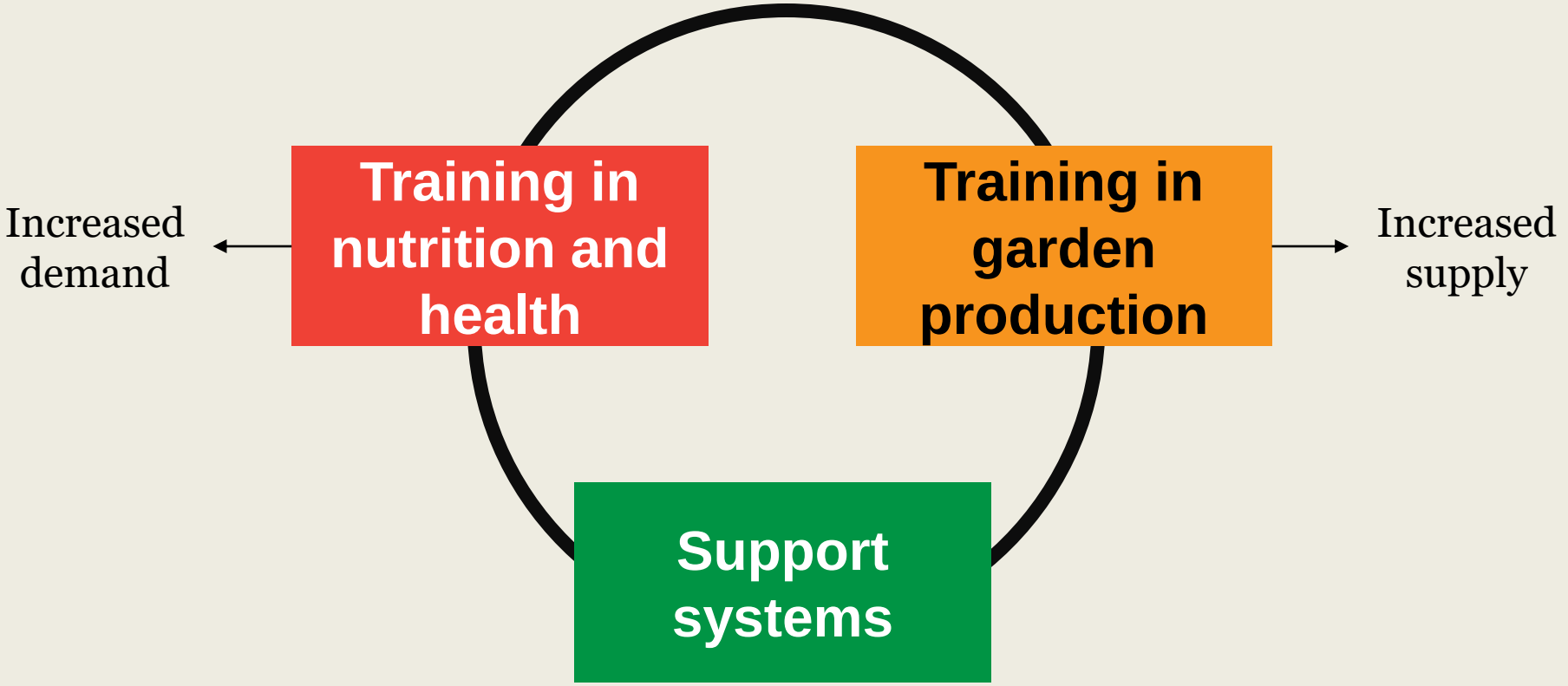
→ Lack of dietary diversity

→ Low consumption of nutritive foods

→ Illness

Jharkand, India, 2012

Home Garden Interventions




Siem Reap, Cambodia


Sindhupalchok, Nepal


Odisha, India


Sikasso, Mali

Knowledge Gaps

- Nutritional status
- Scaling-out
- Sustainability

Study objective: **Does the positive impact of a home garden intervention decrease over time?**

Methods and Data

- Quasi-experimental setup with 3 rounds of data.
- Estimate 2 DID regressions (1-year and 3-year effect) and compare.
- Outcomes measured along the impact pathway:
  → Adoption of improved practices
  → Nutrition knowledge
  → Vegetable production
  → Nutrient yields
  → Vegetable consumption
  → Women's empowerment

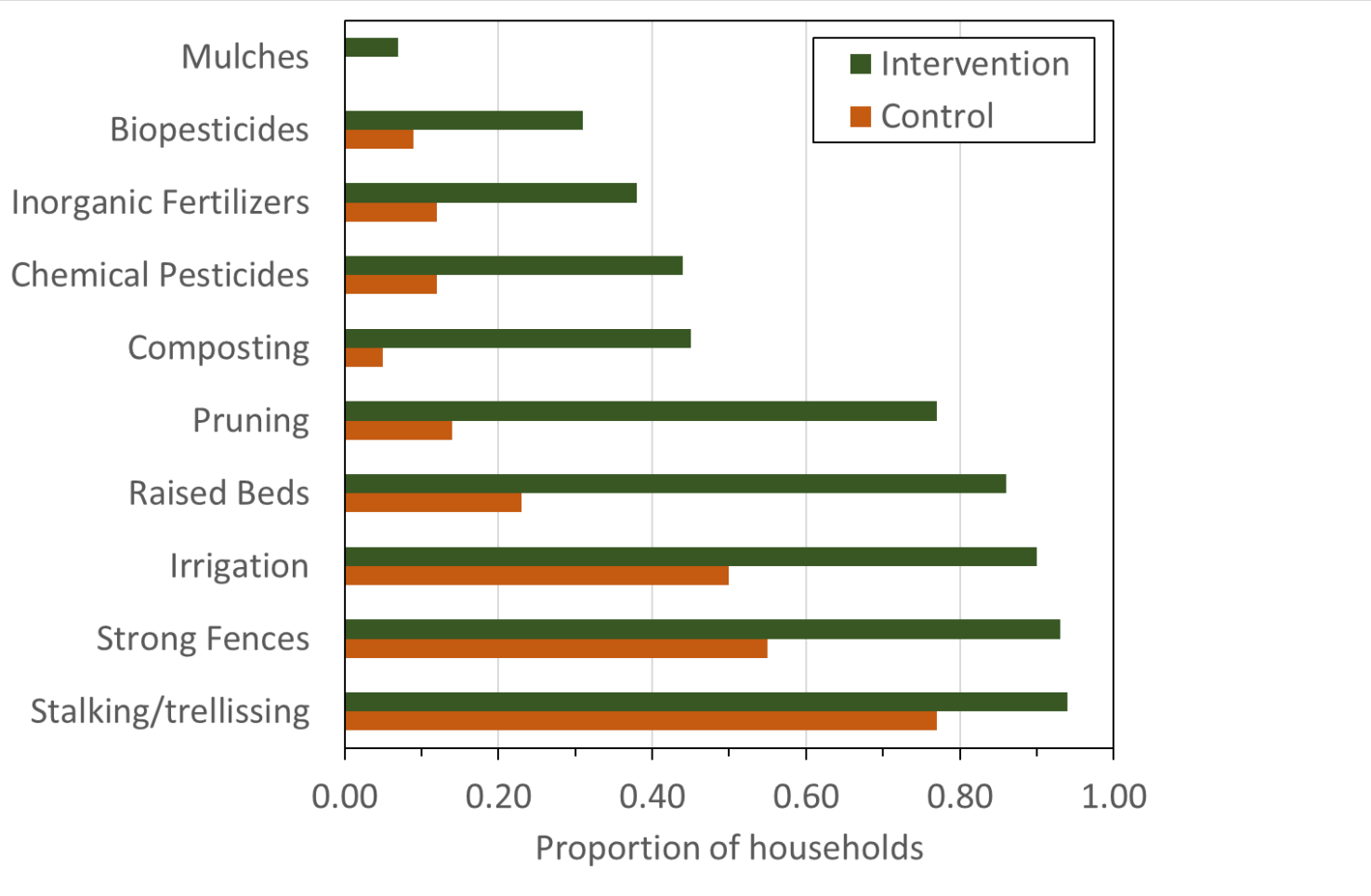
Methods and Data

Table 2: Sample size used in the study, in number of households

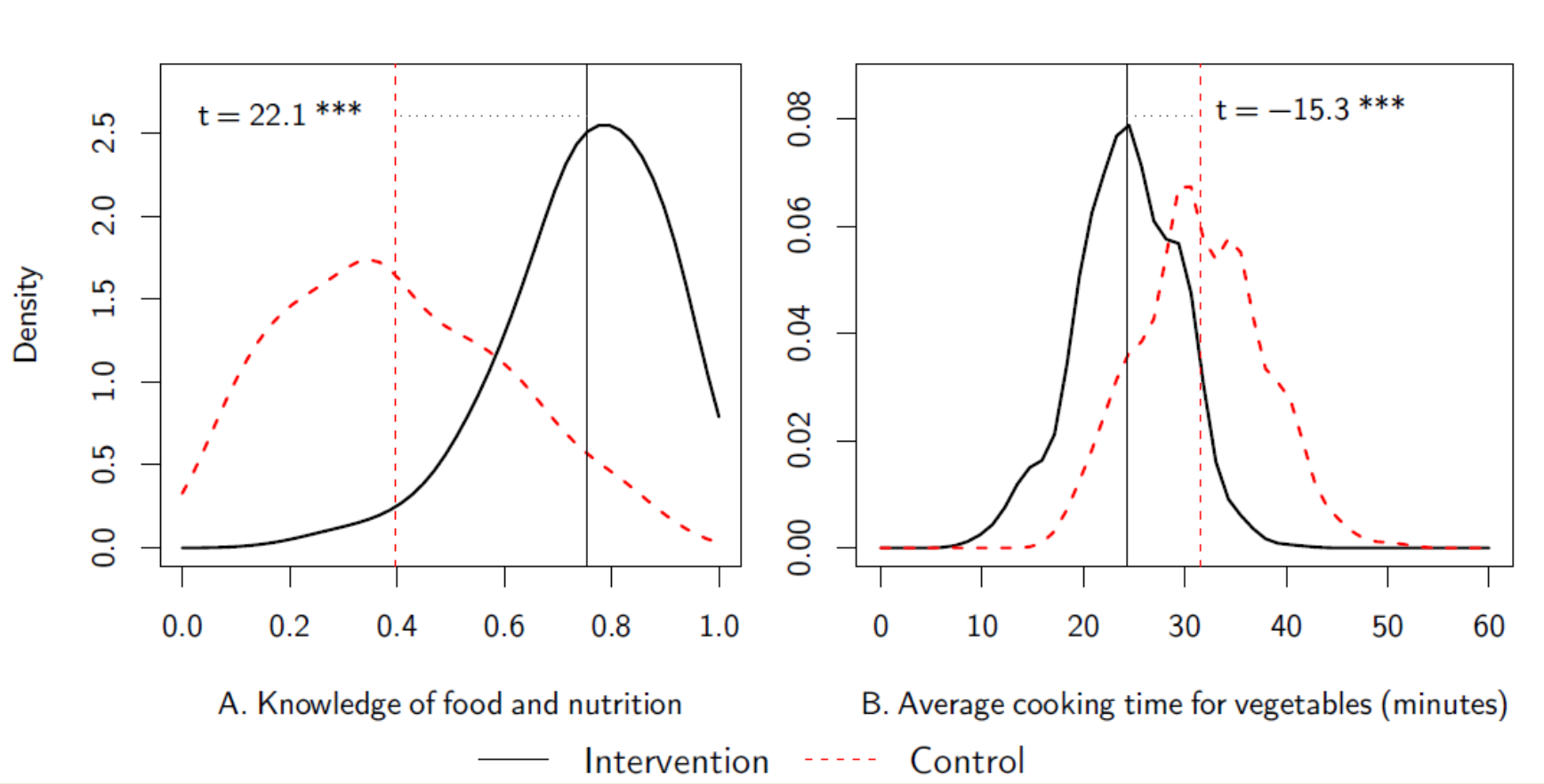
Survey	Intervention	Control	Total
2013 (baseline)	425	252	677
2014 (endline, 1 year after intervention)	408	238	646
2016 (long-term endline, 3 years after intervention)	404	234	638
Panel sample with complete data from 3 surveys	395	224	619

Outcomes and socio-economic characteristics were balanced at baseline.

Results (1): Practices



Results (2): Nutritional Knowledge



A. Measured using a simple knowledge test of 12 statements that could be answered as correct/incorrect (half were factually correct). **B.** Based on a question about the average cooking time of vegetables.

Results (3): Home Garden Production

Total	Baseline	ATE-1	ATE-3	Sign.
Total Quantity (kg)	86.71	29.44	43.19	NS

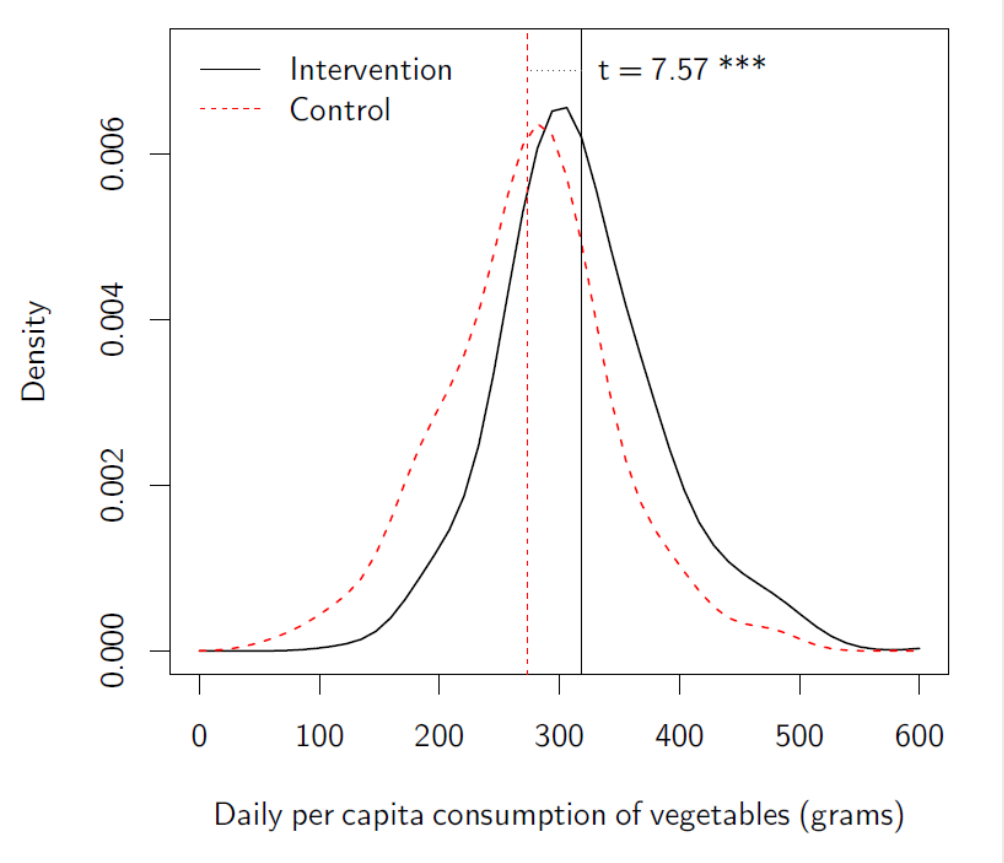
By crop category	Baseline	ATE-1	ATE-3	Sign.
Cucurbits (kg)	47.60	-12.83	23.62	***
Roots & Tubers (kg)	1.87	3.04	0.87	NS
Beans & Pulses (kg)	15.13	6.29	5.46	NS
Leafy Veg. (kg)	15.80	23.17	6.29	***
Other Veg. (kg)	6.31	9.77	6.94	NS

By season	Baseline	ATE-1	ATE-3	Sign.
Summer (kg)	37.60	29.15	22.14	NS
Winter (kg)	49.11	0.29	21.05	**

Results (4): Nutrient Supplies

	Baseline	ATE-1	ATE-3	Sign.
Plant Proteins (g)	0.49	0.27	0.41	
Calcium (mg)	15.43	30.37	13.15	***
Iron (mg)	0.23	0.32	0.20	
Folate (mcg)	11.28	15.65	8.76	
Zinc (mg)	0.18	0.23	0.15	
Vitamin A (1000 UI)	0.46	0.97	0.63	
Vitamin C (mg)	4.84	12.69	7.24	**

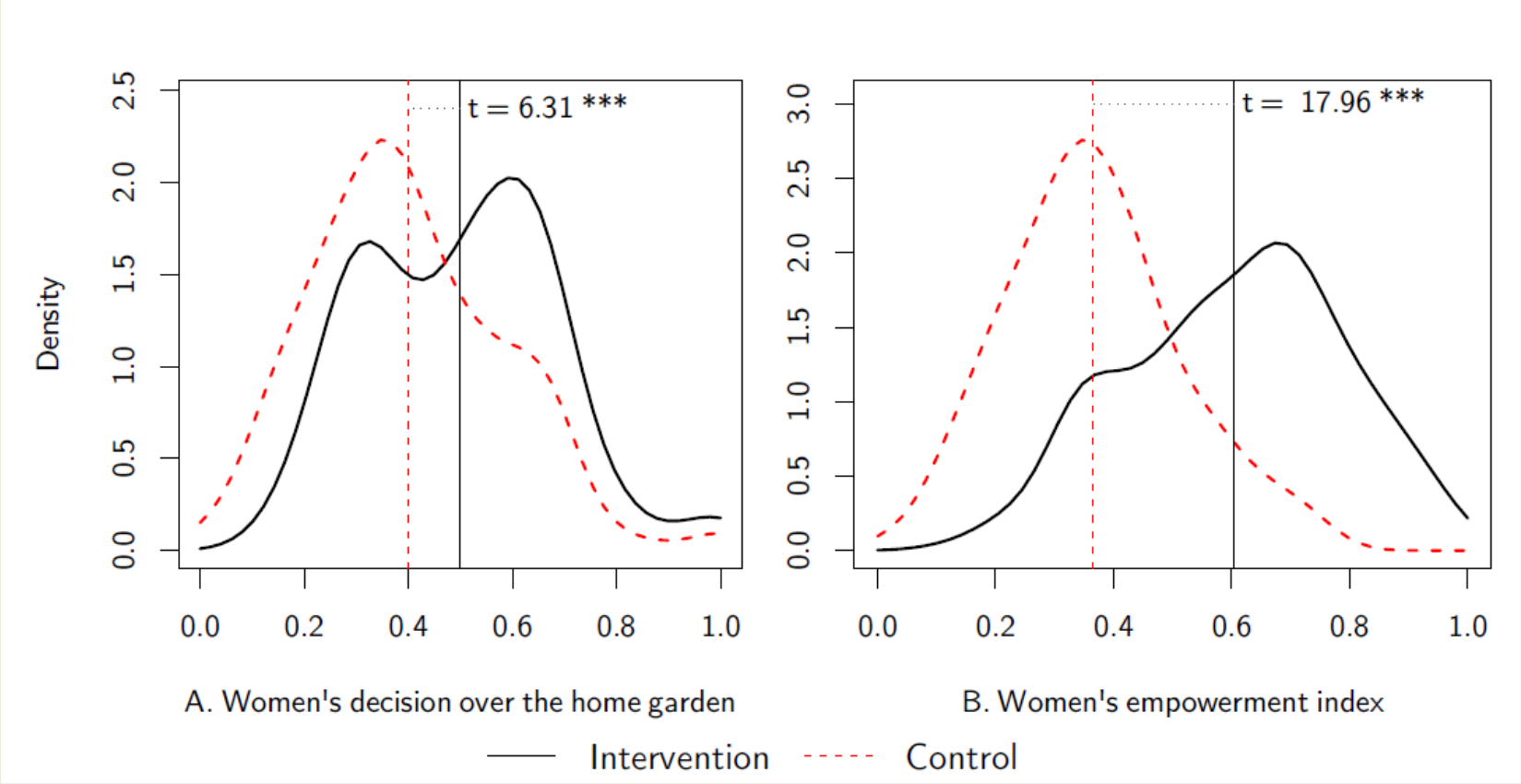
Results (5): Vegetable Consumption



About 16% higher vegetable consumption

Based on a 24-hour household-level recall of vegetable consumption at 3-year endline.

Results (6): Women's Empowerment



A. Measured using a set of 9 statements related to perceived social norms in the local cultural context and a 5-point Likert scale. **B.** Measured using a set of 8 home garden activities and a 5-point scale. Scores were normalized.

Conclusion

- Home garden **production** was maintained 3-years after intervention, but shift from leafy veg. to gourds
- Increased supply of important **micronutrients**
- Increased **consumption** of vegetables
- Increased **knowledge** and women's control over **decision-making**
- Hence, it does confirm that home garden interventions contribute to better diets and that the effect is largely maintained for at least up to 3 years

Ongoing Home Garden Impact Studies

Country	Project period	HH (targets)	Type	Baseline Survey	Endline Survey
1. Bangladesh	2011-2015	10,000	QE	May 2012	May 2013 (1st) May 2016 (2nd) May 2019 (3rd)
2. Cambodia	2015-2018	12,000	RCT	May 2017	May 2018
3. Kenya	2014-2017	8,500	RCT	Mar 2016	Mar 2018
5. Mali	2014-2017	17,100	QE	Jul 2016	Jul 2018
6. Tanzania	2014-2017	8,500	RCT	Nov 2015	Nov 2017
7. Uganda	2014-2017	8,500	RCT	Mar 2016	Mar 2018
8. Nepal	2018-2019	900	RCT	May 2018	May 2019

Thank you!

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