HarvestChoice
BETTER CHOICES, BETTER LIVES

IFPRI

Data and Tools

A FRAMEWORK FOR INTEGRATING MULTI-SCALE AGRO-BIOPHYSICAL AND SOCIO-ECONOMIC DATASETS

Exposing Hidden Hunger – 2015 HelpMeViz Vizathon
Bread for the World Institute, Washington DC, May 30, 2015

What We Do…

"HarvestChoice generates knowledge products to help guide strategic decisions to improve the well-being of the poor in sub-Saharan Africa through more productive and profitable farming. (…) HarvestChoice's evolving list of knowledge products includes maps, datasets, working papers, country briefs, user-oriented tools, and spatial and economic models designed to target the needs of investors, policymakers, and research analysts who are working to improve the **food supply of the world's poor**."

Questions we try to answer:

"Where are the poor and what is their welfare status?"
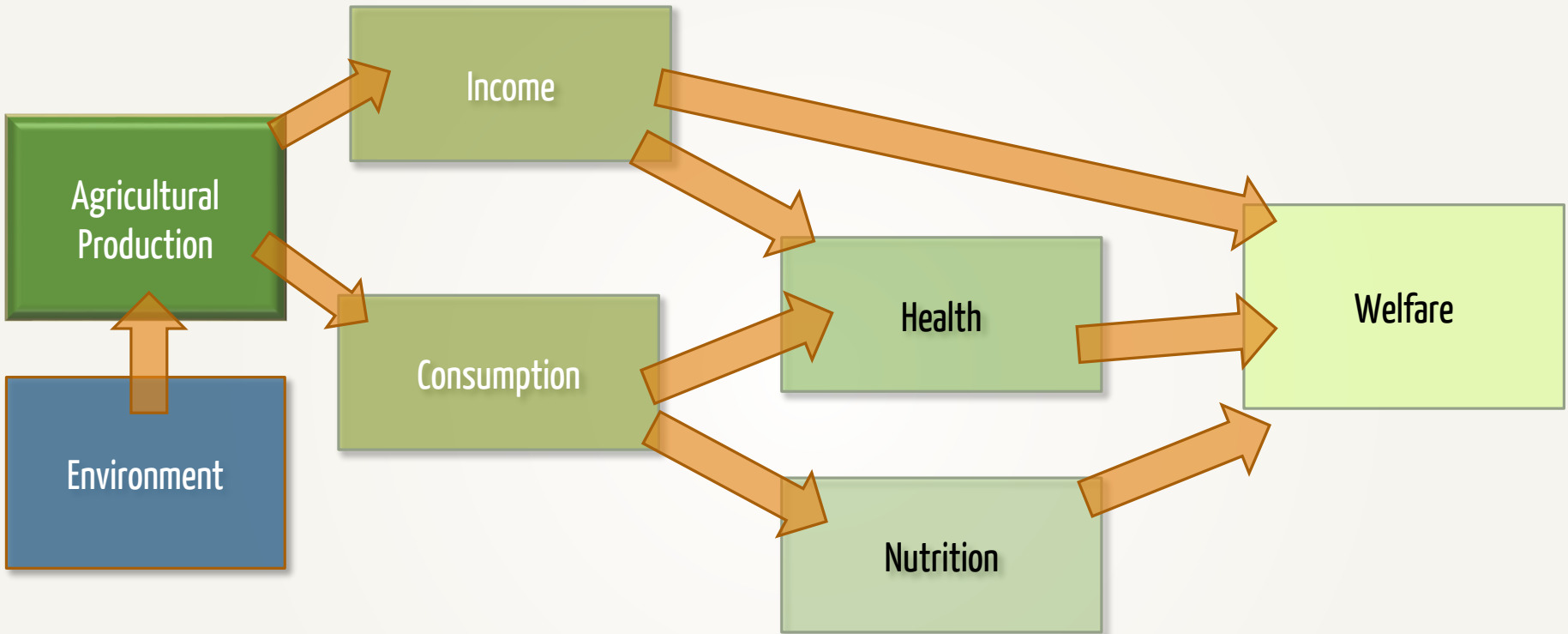
"On what farming systems do poor most depend?"

"What are the constraints of such farming systems?"

"What investments and innovations might best sustainably raise farm productivity?"

Why your product of today is important to us

Understanding health and nutrition dynamics are at the core of our research efforts:

"Does production diversity affect nutrition diversity?"

"Are there gender biases involved in nutrition within households?"

"Are these quantity biases (calories) or quality biases (nutrients)?"

"How does child malnutrition affects future poverty in rural areas?"

Two different types of data

- Harvest choice mapping tool: Macro scale

  - Advantage: it provides an integrated view of the characteristics of each region (socio-demographics, agriculture, climate, …)

  - Challenge for analysis: to extract the information of interest from the vast multitude of data

  - Data limits: limited to means by categories

- Household surveys: Micro scale

  - Advantage: it provides detailed information at the individual or household level, can compute all the statistics of interest (have the entire distribution)

  - Challenge for analysis: to aggregate and summarize the information into meaningful descriptive statistics

  - Data limits: no information other than socio-demographics

Macro Scale: Mapping Tool
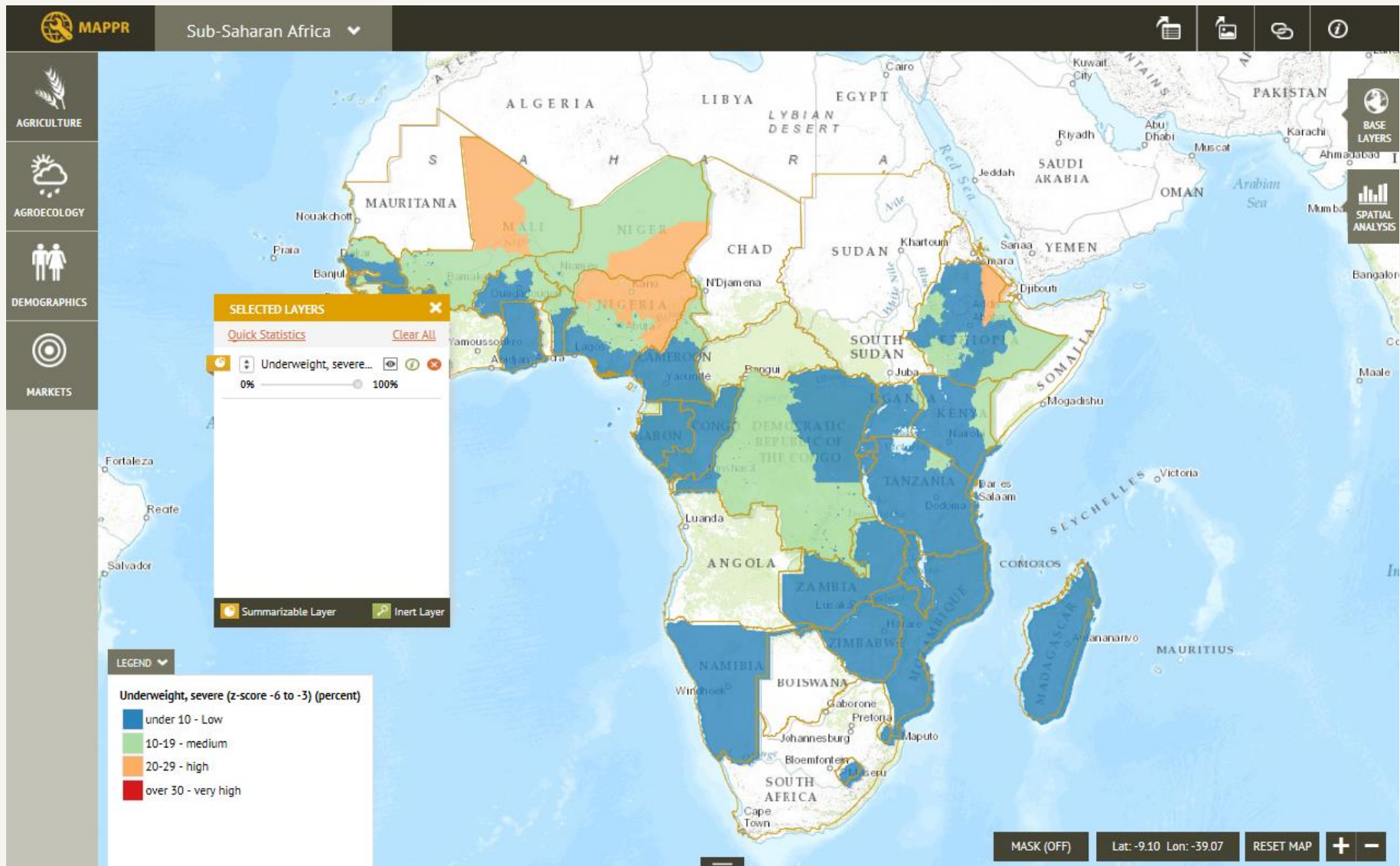
Micro Scale: Household Surveys

	hhid	individual_id	rural	gender	AGEM	WEIGHT	HEIGHT	HAZ	WAZ	WHZ	stunted	underweight	wasted	domain
1														
2	1010101601002	101010160100208	rural	Female	50	10	85	-4.31	-3.73	-1.5	100	100	0	Tigray
3	1010101601017	101010160101707	rural	Male	56	12	90	-3.96	-3	-0.9	100	100	0	Tigray
4	1010101601087	101010160108705	rural	Male	31	10	84	-2.51	-2.54	-1.67	100	100	0	Tigray
5	1010101601101	101010160110104	rural	Male	13	10	74	-1.21	0.11	0.87	0	0	0	Tigray
6	1010201403016	101020140301606	rural	Male	15	10	75.5	-1.45	-0.28	0.48	0	0	0	Tigray
7	1010201403016	101020140301605	rural	Male	30	13	94.5	0.75	-0.19	-0.88	0	0	0	Tigray
8	1010201403036	101020140303607	rural	Female	50	13.5	971		-1.45			0		Tigray
9	1010201403036	101020140303608	rural	Male	13	7.1	64.5	-5.12	-2.99	-0.08	100	100	0	Tigray
10	1010201403091	101020140309107	rural	Male	34	12.8	91	-1.04	-0.75	-0.31	0	0	0	Tigray
11	1010201403106	101020140310604	rural	Male	18	10.9	77	-1.95	-0.03	1.14	0	0	0	Tigray
12	1010201403136	101020140313602	rural	Female	41	11.5	87	-2.83	-1.97	-0.38	100	0	0	Tigray
13	1010300106064	101030010606404	small town	Male	23	12.8	88	0.35	0.6	0.55	0	0	0	Tigray
14	1010300106076	101030010607605	small town	Female	53	12.7	95	-2.36	-2.13	-1.02	100	100	0	Tigray
15	1010300106100	101030010610005	small town	Female	10	7.3	69	-1	-1.24	-0.96	0	0	0	Tigray
16	1010300106136	101030010613609	small town	Female	52	14.8	101	-0.91	-0.91	-0.52	0	0	0	Tigray
17	1010301804004	101030180400404	rural	Male	13	7.8	71	-2.44	-2.14	-1.28	100	100	0	Tigray
18	1010301804069	101030180406903	rural	Female	16	8.1	74.1	-1.61	-1.6	-1.17	0	0	0	Tigray
19	1010301804085	101030180408505	rural	Male	24	9.6	77	-3.31	-2.07	-0.53	100	100	0	Tigray
20	1010301804130	101030180413008	rural	Female	28	10.6	81	-2.36	-1.22	0.16	100	0	0	Tigray
21	1010301804130	101030180413009	rural	Female	59	12.5	88	-4.43	-2.66	0.32	100	100	0	Tigray
22	1010301804145	101030180414508	rural	Male	41	13	13		-1.26			0		Tigray
23	1010500204001	101050020400103	rural	Female	26	8.1	70	-5.24	-3.25	-0.28	100	100	0	Tigray
24	1010500204025	101050020402508	rural	Female	17	10.2	73	-2.34	0.14	1.63	100	0	0	Tigray
25	1010500204025	101050020402507	rural	Male	58	14.9	102	-1.5	-1.43	-0.81	0	0	0	Tigray
26	1010500204049	101050020404906	rural	Male	39	11.9	85	-3.39	-1.82	0.24	100	0	0	Tigray
27	1010500204073	101050020407304	rural	Female	13	7.2	67	-3.13	-2.02	-0.49	100	100	0	Tigray
28	1010500204097	101050020409704	rural	Male	26	13.4	100	3.53	0.57	-1.7	0	0	0	Tigray
29	1010500204097	101050020409703	rural	Male	57	15.5	108	-0.07	-1.07	-1.65	0	0	0	Tigray
30	1010500204142	101050020414203	rural	Female	38	12.6	92	-1.14	-0.95	-0.47	0	0	0	Tigray
31	1010500204142	101050020414204	rural	Male	13	10.2	79	0.85	0.29	-0.08	0	0	0	Tigray
32	1010500204145	101050020414504	rural	Female	14	7.8	75	-0.51	-1.54	-1.83	0	0	0	Tigray
33	1010500204145	101050020414503	rural	Female	49	15.2	101	-0.53	-0.48	-0.23	0	0	0	Tigray
34	1010500204217	101050020421705	rural	Male	20	11.6	90	2.06	0.2	-1.17	0	0	0	Tigray
35	1010600402039	101060040203906	rural	Female	40	12.2	85	-3.2	-1.4	0.76	100	0	0	Tigray

Information publicly available through the HarvestChoice website (MAPR, TABR)

Agro-ecology

- Climate
- Elevation
- Land cover and use
- Agro-ecological domains
- Soil resources

Demography

- Population
- Income sources and poverty
- Health and Nutrition

Agriculture

- Yield
- Harvest area
- Livestock
- Production

Markets

- Markets network
- Ports network
- Travel time

The data comes from different sources (IFPRI, FAO, World Bank, AgMIP, IIASA, …)

Health, Nutrition, Population and Poverty

- **Anthropometrics**
  - Mother's age
  - Mother's height
  - Mother's weight

- **Nutrition indicators (DHS)**
  - child anthropometric indicators (stunting, wasting, underweight)
  - Body Mass Index (BMI)
  - infant/young child breastfeeding practices
  - iron and vitamin supplementation
  - infant and child under 5 mortality rate
  - percentage of children with diarrhea
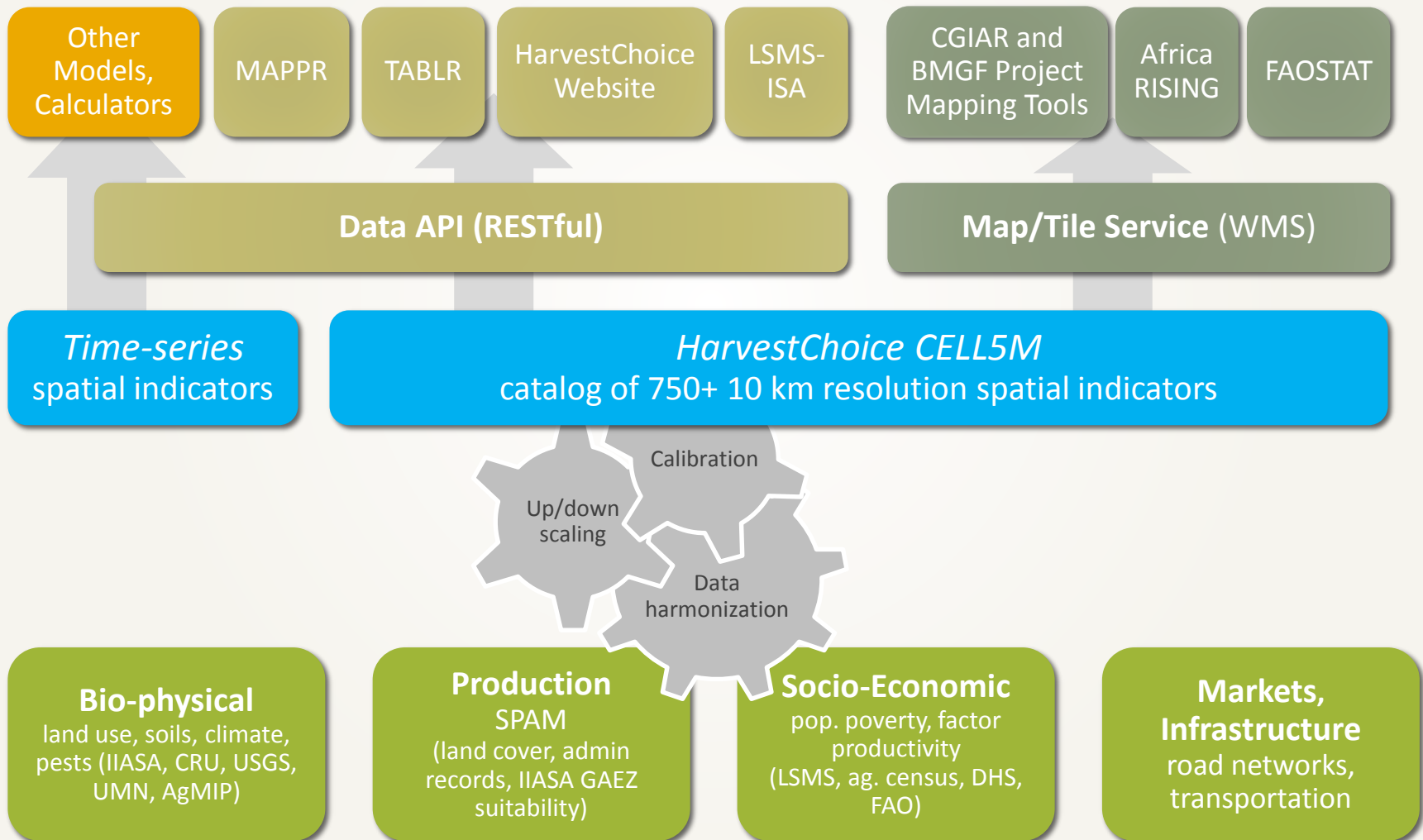 - wealth index

- **Population**
  - Total population
  - Population density

- **Poverty indicators**
  - Per capita expenditure
  - Gini index
  - Poverty headcount ratio
  - Poverty density
  - Poverty gap
  - Poverty Severity

Ethiopia and Malawi household surveys

Anthropometrics: outcome indicators

- HAZ: height for age z-score
- WAZ: weight for age z-score
- WHZ: weight for height z-score

- Underweight: Low weight for age
- Stunted: Low height for age
- Wasted: Low weight for height

Nutrition: input indicators

- Intakes: calories, proteins, vitamins, iron, calcium, … (quantity and shares)
- Indication on whether the households consumes enough of them
- Indexes:
  - Dietary Diversity Index (DDI)
  - Household Dietary Diversity Score (HDDS)
  - Shannon Index
  - Simpson Index

About

IFPRI   ifpri.org

The International Food Policy Research Institute (IFPRI) seeks sustainable solutions for ending hunger and poverty. IFPRI is one of 15 centers supported by the Consultative Group on International Agricultural Research (CGIAR), an alliance of 64 governments, private foundations, and international and regional organizations.

HarvestChoice   harvestchoice.org

HarvestChoice generates knowledge products to help guide strategic investments to improve the well-being of poor people in sub-Saharan Africa through more productive and profitable farming. To do this, a novel and spatially explicit evaluation framework is being developed and deployed. By design, primary knowledge products are currently targeted to the needs of investors, policymakers and program managers, as well as the analysts and technical specialists who support them.

HarvestChoice Team at IFPRI

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