



NGI Technical Note¹

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Investment Targets for Food System Transformation in Africa

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Africa's cereal yields are stagnant. Food imports are surging. Hunger is on the march again across the continent. The need for large and sustained investment in Africa's food systems could not be more urgent. But at what scale and intensity?

In 2016, the African Development Bank estimated that transforming 18 agrifood value chains in Africa through export promotion and import substitution would cost up to US\$400 billion over 10 years.² In 2020, CERES 2030 estimated that ending hunger and doubling the incomes of small-scale producers would require US\$45 billion per year.³ Still lacking, however, is a set of comparable country-level targets for levels and intensities of investments required to transform Africa's agrifood systems toward higher productivity, lower costs, and lower hunger. New analysis from New Growth International (NGI) helps to fill that gap with indicative estimates of such investment targets.

Leveraging food system performance benchmarks ([NGI Benchmarks](#)) based on NGI's Food System Performance Index ([NGI Index](#)), NGI estimates that food system transformation in Africa requires US\$76.8 billion/year to 2030 (US\$614 billion in total), comprising US\$15.4 billion/year from the public sector and US\$61.4 billion/year from the private sector

On average, this level of investment is equivalent to:

- US\$401 million/country/year
- US\$66/person/year
- US\$123/rural person/year

Country-specific target investment levels and public-private breakdowns are shown in Table 1. The target investment intensities at country level (US\$/person/year) and in rural areas (US\$/rural person/year) are shown in Table 2. The estimation method is detailed in the Annex using Burkina Faso and Kenya as examples.

¹ Citation: Omamo, S. W. and A. Mills. 2022. *Investment Targets for Food System Transformation in Africa*. NGI Technical Note. June 2022. Nairobi and Chicago: New Growth International

² AfDB. 2016. Feed Africa: Strategy for Agricultural Transformation in Africa 2016-2025. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Feed_Africa-Strategy_for_Agricultural_Transformation_in_Africa_2016-2025.pdf

³ CERES 2030. 2020. Ending Hunger, Increasing Incomes, and Protecting the Climate: What would it cost donors? CERES 2030 Sustainable Solutions to End Hunger. The International Institute for Sustainable Development. https://ceres2030.org/wp-content/uploads/2020/10/ceres2030-what-would-it-cost_.pdf

Table 1: Country-Level Investment Targets

Rank	Country	Investment Target (US\$ 000s/year)	Public Sector Share (US\$ 000s/year)	Private Sector Share (US\$ 000s/year)
1	Ethiopia	7,951,700	1,590,300	6,361,300
2	Niger	6,412,500	1,282,500	5,130,000
3	Tanzania	6,095,600	1,219,100	4,876,500
4	Morocco	5,433,100	1,086,600	4,346,400
5	Mozambique	4,530,000	906,000	3,624,000
6	Mali	4,249,700	849,900	3,399,800
7	Uganda	4,125,900	825,200	3,300,800
8	Algeria	4,082,200	816,400	3,265,700
9	Nigeria	2,932,200	586,400	2,345,800
10	Congo, Dem. Rep	2,633,000	526,600	2,106,400
11	Kenya	2,481,800	496,400	1,985,400
12	Chad	2,401,800	480,400	1,921,400
13	Burkina Faso	2,263,400	452,700	1,810,800
14	Madagascar	2,231,100	446,200	1,784,900
15	Burundi	1,884,900	377,000	1,507,900
16	Rwanda	1,814,400	362,900	1,451,500
17	Senegal	1,389,200	277,800	1,111,300
18	Cameroon	1,278,800	255,800	1,023,000
19	Malawi	1,270,600	254,100	1,016,500
20	Egypt, Arab Rep.	1,195,800	239,200	956,600
21	Benin	1,127,600	225,500	902,100
22	Tunisia	1,024,300	204,900	819,400
23	Sierra Leone	992,100	198,400	793,700
24	South Africa	986,700	197,300	789,400
25	Togo	848,200	169,600	678,500
26	Cote d'Ivoire	767,400	153,500	613,900
27	Guinea	667,200	133,400	533,800
28	Eritrea	454,300	90,900	363,400
29	Somalia	358,700	71,700	287,000
30	Liberia	318,600	63,700	254,900
31	Central Africa Republic	286,300	57,300	229,100
32	Guinea-Bissau	265,900	53,200	212,800
33	Gambia, The	224,100	44,800	179,300
34	Namibia	208,700	41,700	167,000
35	Sudan	198,400	39,700	158,800
36	Zambia	172,300	34,500	137,800
37	Comoros	167,900	33,600	134,300
38	Ghana	153,500	30,700	122,800
39	Mauritania	131,800	26,400	105,500
40	Congo, Rep	129,700	25,900	103,800
41	Zimbabwe	117,000	23,400	93,600
42	Lesotho	107,600	21,500	86,100
43	Eswatini	94,600	18,900	75,700
44	South Sudan	92,400	18,500	73,900
45	Botswana	51,400	10,300	41,100
46	Angola	45,100	9,000	36,100
47	Mauritius	31,300	6,300	25,100
48	Gabon	30,700	6,100	24,600
49	Libya	22,400	4,500	17,900
50	Equatorial Guinea	5,700	1,100	4,600
51	Sao Tome and Principe	4,900	1,000	4,000
52	Djibouti	1,200	200	1,000
53	Cabo Verde	500	100	400
54	Seychelles	400	100	300
	Total	76,746,700	15,349,300	61,397,300
	Average	400,600	80,100	320,500

Table 2: National and Rural Per Capita Investment Targets

Rank	Country	National Per Capita Investment Target (US\$/year)
1	Niger	264.9
2	Mali	209.9
3	Comoros	193.0
4	Burundi	158.5
5	Morocco	147.2
6	Chad	146.2
7	Mozambique	144.9
8	Rwanda	140.1
9	Guinea-Bissau	135.1
10	Sierra Leone	124.4
11	Burkina Faso	108.3
12	Togo	102.5
13	Tanzania	102.0
14	Eritrea	93.1
15	Algeria	93.0
16	Benin	92.7
17	Gambia, The	90.2
18	Uganda	86.7
19	Tunisia	83.0
20	Senegal	82.2
21	Namibia	81.5
22	Eswatini	80.6
23	Madagascar	70.9
24	Liberia	69.2
25	Ethiopia	66.4
26	Malawi	59.3
27	Central Africa Republic	52.4
28	Guinea	50.8
29	Lesotho	50.2
30	Cameroon	48.2
31	Kenya	46.2
32	Congo, Dem. Rep	29.4
33	Cote d'Ivoire	29.1
34	Somalia	28.6
35	Mauritania	28.4
36	Mauritius	24.7
37	Congo, Rep	23.5
38	Sao Tome and Principe	22.5
39	Botswana	21.9
40	South Africa	16.6
41	Nigeria	14.2
42	Gabon	13.8
43	Egypt, Arab Rep.	11.7
44	Zambia	9.4
45	South Sudan	8.3
46	Zimbabwe	7.9
47	Ghana	4.9
48	Sudan	4.5
49	Seychelles	4.1
50	Equatorial Guinea	4.1
51	Libya	3.3
52	Angola	1.4
53	Djibouti	1.2
54	Cabo Verde	0.9
	Average	66

Rank	Country	Rural Per Capita Investment Target (US\$/year)
1	Morocco	403.6
2	Mali	374.1
3	Algeria	354.4
4	Niger	317.7
5	Tunisia	284.8
6	Comoros	273.4
7	Gambia, The	247.9
8	Guinea-Bissau	242.2
9	Mozambique	230.3
10	Sierra Leone	217.9
11	Chad	191.2
12	Burundi	183.7
13	Benin	180.3
14	Togo	179.1
15	Namibia	171.3
16	Eritrea	169.7
17	Rwanda	159.9
18	Senegal	157.5
19	Tanzania	156.0
20	Burkina Faso	148.0
21	Liberia	139.3
22	Gabon	131.1
23	Madagascar	120.2
24	Uganda	113.5
25	Cameroon	107.5
26	Eswatini	102.6
27	Central Africa Republic	88.4
28	Ethiopia	88.3
29	Sao Tome and Principe	87.9
30	Guinea	80.5
31	Malawi	80.4
32	Botswana	75.0
33	Congo, Rep	73.1
34	Lesotho	70.7
35	Kenya	64.1
36	Mauritania	63.5
37	Cote d'Ivoire	60.2
38	Congo, Dem. Rep	54.1
39	Somalia	53.1
40	South Africa	51.0
41	Mauritius	41.8
42	Nigeria	29.6
43	Egypt, Arab Rep.	20.4
44	Zambia	16.9
45	Libya	16.9
46	Equatorial Guinea	15.1
47	Zimbabwe	11.6
48	Ghana	11.6
49	South Sudan	10.3
50	Seychelles	9.6
51	Sudan	7.0
52	Angola	4.1
53	Cabo Verde	2.6
54	Djibouti	1.6
	Average	123

Annex – Estimation Method

The estimation method rests on extrapolating from the implicit per capita income gains that would accrue to countries from achieving the low hunger benchmarks ([NGI Benchmarks](#)) by 2030. For Burkina Faso, this would be US\$3,937/year; for Kenya this would be US\$1,860/year. The present discounted values of these potential future returns to food system transformation are interpreted as the amounts that countries should be willing to invest in food systems to achieve the potential returns by 2030. Table A1 shows the results for Burkina Faso and Kenya. Table A2 shows implicit per capita income gains for each country, along with key additional parameters.

Table A1: An illustration of the estimation method for Burkina Faso and Kenya

	Parameter	Unit	Burkina Faso	Kenya
A	Implicit per capita income gain by 2030	US\$/year	3,937	1,860
B	2030 population	Million	27.4	66.5
C	Aggregate income gain in 2030 [A*B]	US\$ bill	107.89	123.60
D	Agriculture share of GDP	%	18.4	23
E	Tax collection rate	%	15.5	17.3
F	Adjusted aggregate income gain [C*D*E]	US\$ bill	3.08	4.30
G	Interest rate	%	4.04	7.0
H	Investment target = present discounted value of adjusted aggregate income gain [F/(1+G/100)^8]	US\$ bill	2.24	2.50
I	Private sector share of investment target [H*0.8]	US\$ bill	1.79	2.00
J	Public sector share of investment target [H*0.2]	US\$ mill	448	501
K	2021 population	mill	20.9	53.8
L	2021 rural population	mill	14.5	38.8
M	National per capita investment target [H/K]	US\$/year	108	46
N	Rural per capita investment target [H/L]	US\$/year	156	64

Table A2: Implicit per capita income gains and key additional parameters

Country	Implicit per Capita Income Gain (US\$/year)	Interest Rate (%)	Tax Collection Rate (% of GDP)	Agriculture Share of GDP (%)
Algeria	\$2,292	3	32%	14.13
Angola	\$534	20	9%	9.49
Benin	\$2,839	2	11%	27.11
Botswana	\$5,028	1.65	21%	2.11
Burkina Faso	\$3,937	4.04	16%	18.4
Burundi	\$5,391	6.9	14%	27.1
Cabo Verde	\$229	0.25	7%	4.9
Cameroon	\$2,541	4	12%	17.38
Central Africa Republic	\$5,153	4	4%	32.1
Chad	\$4,706	4	7%	46.34
Comoros	\$3,065	1.75	16%	36.7
Congo, Dem. Rep	\$5,076	18.5	8%	20.9
Congo, Rep	\$3,161	4	8%	9.55
Cote d'Ivoire	\$1,101	2.5	12%	21.39
Djibouti	\$1,145	11.2	22%	1.31
Egypt, Arab Rep.	\$1,241	8.75	13%	11.57
Equatorial Guinea	\$2,313	4	6%	3
Eritrea	\$4,517	8.52	8%	40.2
Eswatini	\$5,298	6.75	29%	8.4
Ethiopia	\$3,847	7	7%	35.45
Gabon	\$1,824	4	12%	6.66
Gambia, The	\$4,008	10	18%	20.55
Ghana	\$526	14.5	12%	19.25
Guinea	\$3,547	11.5	11%	23.67
Guinea-Bissau	\$4,247	2.5	10%	30.86
Kenya	\$1,860	7	15%	23.05
Lesotho	\$3,387	4.75	33%	6.26
Liberia	\$4,877	20.32	13%	38.98
Libya	\$1,553	3	24%	1.3
Madagascar	\$4,707	9.5	11%	25.12
Malawi	\$4,587	12	12%	22.66
Mali	\$3,995	4	15%	36.19
Mauritania	\$1,088	5	15%	20.19
Mauritius	\$4,745	1.85	20%	3.41
Morocco	\$5,940	1.5	21%	11.68
Mozambique	\$4,877	15.25	27%	25.58
Namibia	\$3,602	4.75	31%	9.15
Niger	\$4,917	2.5	12%	38.38
Nigeria	\$1,387	11.5	8%	24.14
Rwanda	\$4,075	4.5	15%	26.25
Sao Tome and Principe	\$2,186	9	12%	14
Senegal	\$2,887	2.5	16%	17.03
Seychelles	\$716	2	32%	1.9
Sierra Leone	\$4,523	14.25	11%	59.5
Somalia	\$5,257	23.8	3%	75
South Africa	\$2,789	3.75	24%	2.53
South Sudan	\$4,760	14	4%	9.58
Sudan	\$2,477	23.8	4%	20.36
Tanzania	\$3,511	5	12%	26.74
Togo	\$4,014	2.5	13%	18.78
Tunisia	\$4,212	7.5	34%	10.05
Uganda	\$3,989	6.5	12%	23.93
Zambia	\$2,767	9	17%	2.98
Zimbabwe	\$3,277	23.8	14%	7.61