



Impacts of El Niño-Induced Drought in Malawi

No. 01, May 2024

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Introduction

The Southern Africa region has been experiencing strong El Niño weather effects since 2023. These effects intensified later that year and are expected to continue till mid-2024. This weather is usually characterized by above-average temperatures and below-normal rainfall. Climate variability related to this phenomenon is considered one of the strongest drivers that impact agricultural production in Southern Africa. The majority of countries in the region have reported potential decline in staple crop production, notably maize, due to the *El Niño* drought.

Malawi is one of the major maize producers in the region. About 90% of all farming households in the country produce maize, which accounts for over 65% of the country's calorie intake. Rainfall patterns are a key determinant of production because nearly all farmers in the country depend on rain-fed agriculture. Therefore, drought such as the one induced by *El Niño* can be devastating for the country and may expose households to higher risks of food insecurity. While the overall effects of the droughts are experienced at the national level, there are differentiated impacts spatially. Some areas in the country might be exposed to more intense drought than others.

Furthermore, the scale of devastation will be more significant in areas of the country where the severity of drought and population densities are highest. Finally, areas with higher levels of chronic vulnerability are expected to be hit harder. Therefore, understanding the nuances of spatial impacts of drought and community vulnerability is critical for prioritizing areas for intervention during crises such as the current drought. Equally importantly, it allows for better planning and implementation, in normal times, of long-term interventions to foster community resilience. This brief focuses on several spatial aspects of the drought's impact on community vulnerability to shed light on hot-spot areas that require priority intervention and attention.

Drought Index and Exposure for Malawi in 2024

Drought index measures the severity of drought conditions across a geographical space. As the value approaches zero, the severity of the drought increases and values above 1 indicate the absence of drought conditions. The drought index for Malawi in 2024 is shown in Figure 1; the areas in the North-Eastern parts of the country, especially those bordering Lake Malawi, are the most affected by the drought conditions. Vast areas in Central Malawi are also affected by drought. Some parts of the North-West of the country bordering Zambia and the South-West are less affected by the drought. Figure 2 combines the drought index and population density to generate a drought exposure map. The map provides additional information on areas affected by high levels of drought and with high population density, hence requiring priority intervention. Based on the map in Figure 2, areas in Central Malawi such as Lilongwe, Dowa and Mchinji are

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El Niño 2024
in Southern Africa Series

highly vulnerable because of the high levels of drought coupled with high population density. In contrast, areas on the North-East bordering Lake Malawi, though impacted by severe drought, are less densely populated; hence, the level of drought exposure is lower.

Figure 1: Malawi Drought Index 2024

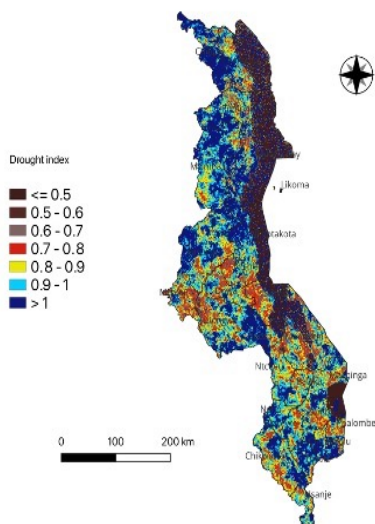
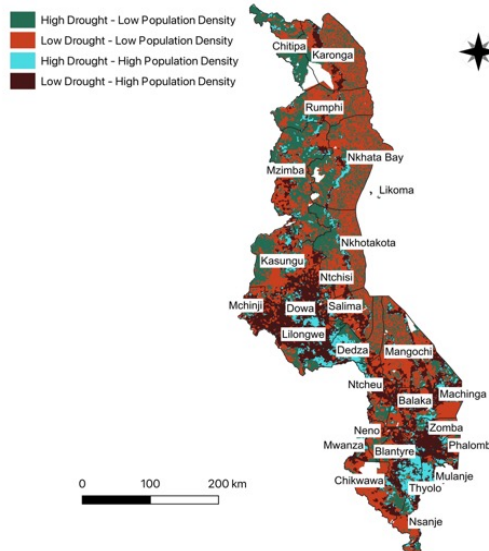


Figure 2: Malawi 2024 Drought Exposure



Source: AKADEMIYA2063 AAgWa, 2024

Impact of Drought on Maize Production

The maize production forecast for 2024 shows a significant reduction in production levels in 2024 compared to 2023 (see Figures 3 and 4).

Figure 3: Predicted Maize Production in Malawi in MT (2024)

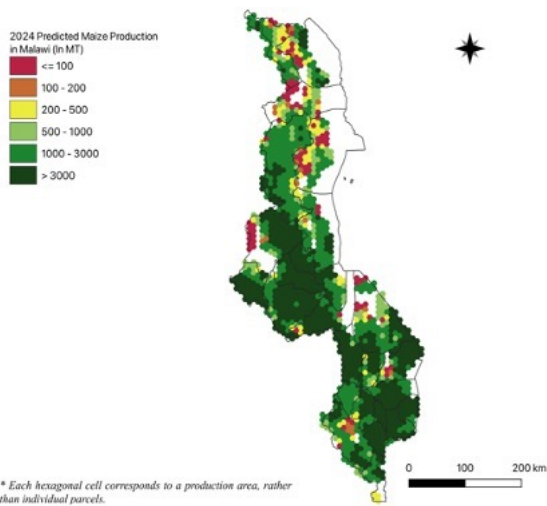
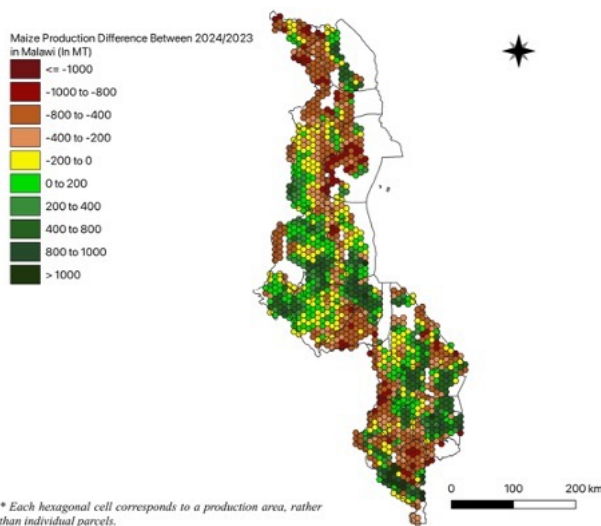


Figure 4: Maize Production Difference between 2024/23

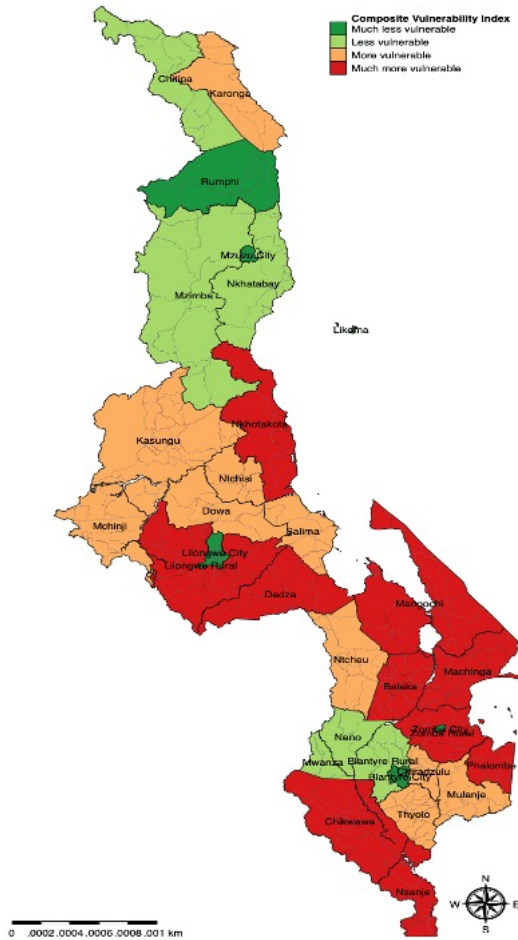


Maize production in Malawi for 2024 is forecasted to be lower by about 5% (see Annex Table 1) compared to 2023 production. The reduction in production is predicted to vary spatially across the country, with the highest reduction expected mainly in Central and Southern Malawi, as shown in Figure 4. Some areas are expected to experience total maize crop loss (e.g. SC Sitola and SC Chapinduka), while others are forecasted to experience over 70% reduction in production, e.g. SC Ndamera, SC Chamba, TA Musiya, TA Kabanduli, among others.

Community Vulnerability Hotspots in Malawi

A composite community vulnerability index for Malawi was computed based on four sub-indicators: Mean Nutrient Adequacy Ratio (the average nutritional adequacy of the 13 nutrients), Real Food expenditure per capita, Vulnerability Climate Change Index (Exposure, Sensitivity, and Adaptive incapacity), and Health System Index (constructed from two sub-indices: Proportion of females (15-49) for whom distance to health facility is a big problem; and Proportion of females (15-49) getting Assistance (doctor, nurse/midwife, etc.). The map is shown in Figure 5.

Figure 5: Distribution of Community Vulnerability in Malawi



The composite indicator reveals that the highest levels of vulnerability in Malawi are found in the Central districts of Lilongwe (city and rural), Dedza, and NkhotaKota and the Southern districts of Mangochi, Balaka, Zomba (city and rural), Phalambe, Chikava, and Nsanje.

In the current situation of reduced food production due to El Niño induced drought, these regions in Central and Southern Malawi are equally predominantly affected and may be the hardest hit by impacts on food insecurity and, therefore, may require prioritization in case of emergency interventions. Specifically, the hotspot areas that require priority intervention include Lilongwe (city and rural), Dedza, Chiwawa, Mangochi, Machinga, Zomba, and Phalombo.

DISCLAIMER:

Data content clipped to the region of interest’s administrative borders might be added for illustrative purposes. AKADEMIYA2063 uses shapefiles solely to constrain the data map to the geographical extent of the region of interest. The boundaries, names, and designations shown on maps do not imply official endorsement or acceptance by AKADEMIYA2063.

Annex – 2024 Malawi Maize Production Forecast at Sub-district Level

Districts	Areas	2024 Production (MT)	2023 Production (MT)	Difference (MT)	Change (%)
Balaka	TA Kalembo	52509	47453	5057	11%
Balaka	TA Nsamala	50242	47357	2885	6%
Blantyre	Blantyre City	6237	7486	-1249	-17%
Blantyre	TA Chigaru	15822	14543	1279	9%
Blantyre	TA Kapeni	13965	12060	1905	16%
Blantyre	TA Kuntaja	7803	9456	-1653	-17%
Blantyre	TA Kunthembwe	7621	8760	-1139	-13%
Blantyre	TA Lundu	4803	4187	616	15%
Blantyre	TA Machinjili	4371	3964	407	10%
Blantyre	TA Somba	11389	12357	-968	-8%
Chikwawa	Lengwe National Park	13661	14295	-635	-4%
Chikwawa	Majete Game Reserve – Chikwawa	2077	5943	-3865	-65%
Chikwawa	TA Chapananga	20704	18424	2280	12%

Districts	Areas	2024 Production (MT)	2023 Production (MT)	Difference (MT)	Change (%)
Chikwawa	TA Kasisi	369	1113	-744	-67%
Chikwawa	TA Katunga	482	197	285	144%
Chikwawa	TA Makhwira	9298	12462	-3165	-25%
Chikwawa	TA Ngabu	34483	25717	8766	34%
Chiradzulu	TA Kadewere	7716	8729	-1013	-12%
Chiradzulu	TA Likoswe	3804	4226	-422	-10%
Chiradzulu	TA Mpama	12128	13599	-1470	-11%
Chiradzulu	TA Nchema	3856	4442	-587	-13%
Chiradzulu	TA Nkalo	3994	4143	-150	-4%
Chitipa	Nyika N.P. – Chitipa	3689	8162	-4473	-55%
Chitipa	TA Kameme	7438	9845	-2408	-24%
Chitipa	TA Mwabulambya	9013	11234	-2221	-20%
Chitipa	TA Mwenemisuku	2326	6835	-4509	-66%
Chitipa	TA Mwenewenya	5719	10002	-4283	-43%
Chitipa	TA Nthalire	12888	16462	-3574	-22%
Dedza	SC Chauma	6239	6984	-745	-11%
Dedza	SC Chilikumwendo	13121	13994	-873	-6%
Dedza	SC Kamenya Gwaza	15624	24742	-9118	-37%
Dedza	TA Kachindamoto	5271	7050	-1778	-25%
Dedza	TA Kaphuka	32534	37881	-5346	-14%
Dedza	TA Kasumbu	33402	36826	-3424	-9%
Dedza	TA Pemba	31460	37746	-6286	-17%
Dedza	TA Tambala	19481	21741	-2260	-10%
Dowa	SC Chakhaza	27078	24572	2506	10%
Dowa	SC Kayembe	12685	12190	496	4%
Dowa	SC Mkukula	21795	22030	-235	-1%
Dowa	SC Mponela	18459	17832	627	4%
Dowa	TA Chiwere	30248	30219	29	0%
Dowa	TA Dzoole	29895	27515	2381	9%
Dowa	TA Msakambewa	25419	26044	-625	-2%
Karonga	Lake Malawi	7981	7276	705	10%
Karonga	Nyipa N. P. – Karonga	368	1327	-958	-72%
Karonga	SC Mwakaboko	1713	2991	-1278	-43%
Karonga	SC Mwirang'ombe	2797	1618	1179	73%
Karonga	TA Kilupula	5157	5704	-547	-10%
Karonga	TA Kyungu	12553	14193	-1640	-12%
Karonga	TA Wasambo	10890	9520	1370	14%
Kasungu	Kasungu National Park	3308	7440	-4132	-56%
Kasungu	SC Chilowamatambe	12715	11781	934	8%
Kasungu	SC Chisikwa	4666	4732	-65	-1%
Kasungu	SC Lukwa	866	648	218	34%
Kasungu	SC M'nyanja	10564	10502	61	1%
Kasungu	SC Njombwa	1402	433	969	224%
Kasungu	SC Simlemba	23080	22576	504	2%
Kasungu	TA Chulu	23600	22096	1504	7%
Kasungu	TA Kaluluma	15901	15032	869	6%

Districts	Areas	2024 Production (MT)	2023 Production (MT)	Difference (MT)	Change (%)
Kasungu	TA Kaomba	13231	13107	123	1%
Kasungu	TA Kapelula	16964	16747	217	1%
Kasungu	TA Mwase	12847	12460	387	3%
Kasungu	TA Santhe	511	913	-402	-44%
Kasungu	TA Wimbe	53889	54086	-197	0%
Lilongwe	Lilongwe City	27911	28265	-354	-1%
Lilongwe	SC Chitekwele	19837	23792	-3956	-17%
Lilongwe	SC Mtema	21018	20653	365	2%
Lilongwe	SC Tsabango	6836	6880	-44	-1%
Lilongwe	TA Chadza	26774	27851	-1077	-4%
Lilongwe	TA Chimutu	27376	27811	-436	-2%
Lilongwe	TA Chiseka	63352	69498	-6146	-9%
Lilongwe	TA Chitukula	6831	6822	9	0%
Lilongwe	TA Kabudula	43700	43027	673	2%
Lilongwe	TA Kalolo	17989	17381	609	4%
Lilongwe	TA Kalumba	6758	6855	-97	-1%
Lilongwe	TA Kalumbu	7263	6999	264	4%
Lilongwe	TA Khongoni	4364	3345	1020	30%
Lilongwe	TA Malili	34829	34660	170	0%
Lilongwe	TA Mazengera	26436	27648	-1212	-4%
Machinga	Liwonde Town	591	190	402	212%
Machinga	SC Chamba	355	1645	-1290	-78%
Machinga	SC Chikweo	16941	17124	-183	-1%
Machinga	SC Chiwalo	3806	4334	-528	-12%
Machinga	SC Mlomba	12811	10594	2216	21%
Machinga	SC Mposa	1956	3091	-1135	-37%
Machinga	SC Ngokwe	8601	8229	371	5%
Machinga	SC Sitola	0	1677	-1677	-100%
Machinga	TA Kawinga	24949	21824	3125	14%
Machinga	TA Liwonde	6476	6695	-219	-3%
Machinga	TA Nyambi	13597	14551	-954	-7%
Mangochi	Lake Malawi	4270	3413	858	25%
Mangochi	Lake Malombe	2371	1102	1269	115%
Mangochi	SC Chowe	17337	18201	-864	-5%
Mangochi	SC Mbwana Nyambi	28411	32877	-4467	-14%
Mangochi	SC Namabvi	1912	1719	192	11%
Mangochi	TA Chimwala	40135	42075	-1939	-5%
Mangochi	TA Jalasi	22409	29471	-7062	-24%
Mangochi	TA Katuli	14458	16223	-1765	-11%
Mangochi	TA Makanjila	2931	4159	-1228	-30%
Mangochi	TA Mponda	22452	21800	652	3%
Mangochi	TA Nankumba	8918	8846	72	1%
Mchinji	SC Dambe	6374	6323	51	1%
Mchinji	SC Mavwere	39829	38147	1682	4%
Mchinji	SC Mduwa	45418	44728	690	2%
Mchinji	TA Mkanda	18078	17650	429	2%

Districts	Areas	2024 Production (MT)	2023 Production (MT)	Difference (MT)	Change (%)
Mchinji	TA Mlonyeni	12180	13478	-1298	-10%
Mchinji	TA Zulu	59211	56907	2304	4%
Mulanje	Mulanje Mountain Forest Reserve	11208	18519	-7311	-39%
Mulanje	SC Juma	21371	19853	1518	8%
Mulanje	SC Laston Njema	5048	6311	-1263	-20%
Mulanje	TA Chikumbu	9880	10687	-807	-8%
Mulanje	TA Mabuka	24410	32406	-7996	-25%
Mulanje	TA Nkanda	18848	19348	-501	-3%
Mulanje	TA Nthiramanja	3669	4188	-520	-12%
Mwanza	Majete Game Reserve – Mwanza	1234	1445	-211	-15%
Mwanza	TA Kanduku	13895	14105	-210	-1%
Mwanza	TA Nthache	9781	10714	-933	-9%
Mzimba	Mzuzu City	5605	5302	303	6%
Mzimba	SC Jaravikuba Munthali	3146	3972	-826	-21%
Mzimba	SC Kampingo Sibande	20823	26845	-6022	-22%
Mzimba	SC Khosolo Gwaza Jere	16526	18654	-2128	-11%
Mzimba	TA Chindi	42303	43836	-1533	-3%
Mzimba	TA M'Mbelwa	40845	37573	3272	9%
Mzimba	TA Mabulabo	23807	22981	826	4%
Mzimba	TA Mpherembe	11103	12333	-1230	-10%
Mzimba	TA Mtwalo	34734	39054	-4320	-11%
Mzimba	TA Mzikubola	24472	28730	-4257	-15%
Mzimba	TA Mzukuzuku	13274	12907	367	3%
Neno	TA Dambe	8699	10719	-2021	-19%
Neno	TA Mlauli	11001	12753	-1752	-14%
Neno	TA Ngozi	7428	10007	-2579	-26%
Neno	TA Symon	7447	8400	-953	-11%
Nkhata Bay	Lake Malawi	11772	16053	-4281	-27%
Nkhata Bay	SC Malanda	2524	5342	-2819	-53%
Nkhata Bay	SC Nyaluwanga	1175	2209	-1034	-47%
Nkhata Bay	TA Fukamapiri	1357	3122	-1765	-57%
Nkhata Bay	TA Kabunduli	4100	19088	-14988	-79%
Nkhata Bay	TA Malenga Mzoma	1510	2676	-1166	-44%
Nkhata Bay	TA Musisya	286	2774	-2488	-90%
Nkhata Bay	TA Timbiri	3062	4493	-1431	-32%
Nkhotakota	Lake Malawi	1433	1264	169	13%
Nkhotakota	Nkhotakota Game Reserve	7715	10455	-2740	-26%
Nkhotakota	SC Kafuzila	2096	2530	-434	-17%
Nkhotakota	SC Mphonde	4735	4737	-2	0%
Nkhotakota	SC Mwansambo	10284	9527	758	8%
Nkhotakota	TA Kanyenda	13076	13440	-364	-3%
Nkhotakota	TA Malenga Chanzi	10133	10033	99	1%
Nkhotakota	TA Mwadzama	15945	11846	4098	35%
Nsanje	Mwabvi Game Reserve	3796	4511	-715	-16%
Nsanje	SC Mbenje	19004	15252	3752	25%
Nsanje	TA Mlolo	18963	19204	-241	-1%

Districts	Areas	2024 Production (MT)	2023 Production (MT)	Difference (MT)	Change (%)
Nsanje	TA Ndamera	232	464	-232	-50%
Nsanje	TA Tengani	5318	4990	328	7%
Ntcheu	Ntcheu Boma	7273	7583	-310	-4%
Ntcheu	SC Champiti	7344	7284	60	1%
Ntcheu	SC Goodson Ganya	16541	16850	-309	-2%
Ntcheu	SC Makwangwala	20922	20816	106	1%
Ntcheu	TA Chakhumbira	11709	13068	-1359	-10%
Ntcheu	TA Kwataine	13122	13783	-661	-5%
Ntcheu	TA Mpando	24436	27574	-3138	-11%
Ntcheu	TA Njolomole	13559	13916	-357	-3%
Ntcheu	TA Phambala	29013	33238	-4225	-13%
Ntchisi	SC Chilooko	27648	25689	1958	8%
Ntchisi	SC Nthondo	3941	3727	214	6%
Ntchisi	TA Chikho	21984	22464	-480	-2%
Ntchisi	TA Kalumo	33640	32776	864	3%
Ntchisi	TA Kasukula	5601	6552	-951	-15%
Phalombe	TA Mkhumba	54712	52440	2272	4%
Phalombe	TA Nazombe	21427	24302	-2875	-12%
Rumphi	Nyika National Park – Rumphi	0	2761	-2761	-100%
Rumphi	SC Chapinduka	0	798	-798	-100%
Rumphi	SC Kachulu	565	1025	-460	-45%
Rumphi	SC Mwahenga	3818	3511	307	9%
Rumphi	SC Mwalweni	2190	3698	-1508	-41%
Rumphi	SC Mwankhunikira	5879	7457	-1578	-21%
Rumphi	TA Chikulamayembe	7761	10818	-3057	-28%
Rumphi	TA Katumbi	1159	1619	-460	-28%
Rumphi	TA Mwamlowe	1227	2296	-1068	-47%
Rumphi	Vwaza Marsh Game Reserve – Rumph	2589	3951	-1362	-34%
Salima	Lake Malawi	7587	6828	759	11%
Salima	SC Kambalame	1340	982	358	36%
Salima	SC Kambwiri	13974	14323	-348	-2%
Salima	SC Mwanza	25972	23619	2353	10%
Salima	TA Karonga	16153	10598	5556	52%
Salima	TA Khombedza	15744	13613	2131	16%
Salima	TA Kuluunda	540	790	-250	-32%
Salima	TA Maganga	2031	996	1035	104%
Salima	TA Ndindi	5317	5276	41	1%
Salima	TA Pemba	3370	2177	1193	55%
Thyolo	SC Kwethemule	12769	14880	-2112	-14%
Thyolo	SC Mbawela	3040	3539	-499	-14%
Thyolo	SC Mphuka	7479	8925	-1446	-16%
Thyolo	TA Bvumbwe	6344	7873	-1530	-19%
Thyolo	TA Changata	3542	4420	-878	-20%
Thyolo	TA Chimaliro	13413	15777	-2364	-15%
Thyolo	TA Kapichi	7766	8266	-500	-6%
Thyolo	TA Nchilamwela	3882	4606	-724	-16%

Districts	Areas	2024 Production (MT)	2023 Production (MT)	Difference (MT)	Change (%)
Thyolo	TA Nsabwe	7022	7762	-740	-10%
Thyolo	TA Thomas	3454	4012	-558	-14%
Thyolo	Thyolo Boma	4730	5673	-943	-17%
Zomba	Lake Chilwa	3447	1847	1600	87%
Zomba	SC Mbiza	47239	44081	3158	7%
Zomba	SC Mkumbira	1587	692	895	129%
Zomba	TA Chikowi	26782	25346	1436	6%
Zomba	TA Kuntumanji	12971	12006	965	8%
Zomba	TA Malemia	17015	19522	-2506	-13%
Zomba	TA Mlumbe	20980	21386	-406	-2%
Zomba	TA Mwambo	33624	32425	1199	4%
Zomba	Zomba City	3352	3510	-158	-4%
Total		2863769	3005962	-142193	-5%

MT (Metric tons): 1 MT is equivalent to 1,000 kilograms.

Change: refers to the relative difference and is calculated as (2024 prod – 2023 prod) divided by 2023 prod.

Suggested Citation: Guthiga, P. M., K. Dia, and A. Ndoye. 2024. *Impacts of El Niño-Induced Drought in Malawi*. El Niño 2024 in Southern Africa Series, No. 01. Kigali: AKADEMIYA2063. <https://doi.org/10.54067/elniño2024insas.01>

AKADEMIYA2063 is supported financially by the United States Agency for International Development (USAID), the Bill & Melinda Gates Foundation (BMGF), the German Federal Ministry for Economic Cooperation and Development (BMZ), the African Development Bank (AfDB), the UK's Foreign, Commonwealth & Development Office (FCDO), the Global Center on Adaptation (GCA), and the Food and Agriculture Organization of the United Nations (FAO). The views expressed in this publication do not necessarily reflect those of the funders.



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