



Sweetpotato for Profit and Health Initiative

Status of Sweetpotato in Sub-Saharan Africa

September 2019

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International Potato Center



Executive Summary

This was the 5th year of the Status of Sweetpotato in sub-Saharan Africa (SSA) annual report, which corresponds to the fifth year of the second phase of the Sweetpotato for Profit and Health Initiative (SPHI), from July 2018 through June 2019. First, the report uses FAO data through 2017 (most recent year available) to look at the trends in area under sweetpotato compared to other crops in area expansion in SSA, then dives into area and production under sweetpotato in the 17 target countries under the SPHI by sub-region. Second, the report assesses progress made in dissemination improved sweetpotato varieties to users since the launching of the SPHI in 2009. The goal of the SPHI was to reach 10 million African households with improved varieties of sweetpotato by 2020 in 17 target countries. To accomplish this, breeding in Africa for Africa is essential to have adapted varieties that consumers like to eat. Thus, the report captures progress in varietal release by country. Progress in other indicators are touched upon before summarizing the findings of the annual update on the status of decentralized vine multipliers in 10 countries where data were collected using a phone interview. Maps showing the location of the multipliers by gender are provided.

The trend data in area under major field crops from 1995 through 2017 clearly show that the rate of expansion under potato and sweetpotato is faster than for all other field crops. Since 2015, sweetpotato has exceed potato in area expansion. Since 2009, Tanzania, Ethiopia, and Rwanda have continued to expand in sweetpotato area in East and Central Africa; there is a concerning decline in area and production in 2010 in Uganda. In West Africa, area and production in sweetpotato continue to expand in Nigeria since 2009. The levels dwarf what is happening in other West African countries, but poor statistics limits our ability to track progress in this sub-region. In Southern Africa since 2009, Malawi and Angola have demonstrated the strongest growth in area under sweetpotato; in terms of production, Malawi clearly dominates, which variable production statistics for other countries due to the unpredictable occurrence of drought. A major change this year, is that the FAO corrected its statistic database for Malawi, which in previous years incorrectly recorded sweetpotato under potato. In 2017, the top four sweetpotato producing countries in the FAOSTAT database from highest to lowest were Malawi, Nigeria, Tanzania, and Uganda.

Since 2009, 150 improved sweetpotato varieties have been released by 16 SSA countries, of which 100 or two-thirds, are orange-fleshed. During the past year, 16 varieties were released by four countries (Kenya, Burundi, Ghana and Burkina Faso).

The total number of beneficiaries reached during this reporting period was 427,103 households (295,205 direct and 131,898 indirect beneficiary households) which is about 39% less than the beneficiaries reached during the previous reporting period. This brings the total number of

beneficiary households reached to 6,224,647, 62% of the target. In terms of individuals reach, we estimate 29,595,005 persons, based on average rural household size for a given country.

741 of the 1,030 decentralized vine multipliers recorded in previous years were reached by phone for an update survey in 11 SSA countries. Among these, 76.2% were actively producing vines while 23.8% reported to have stopped vine production citing lack of market as the major contributor and drought as the second most constraint towards continued vine production. Vine multiplication in the 11 SPHI countries is predominantly done by men who constitute 70.3% of those contacted compared to 29.7% women.

The report ends with a discussion for the way forward. Resource mobilization needs to intensify so that the dissemination effort stays on track. Several impact studies are underway which are assessing varietal performance and uptake in key countries like Malawi and Uganda. Clearly, there is a need to continue monitoring progress in sweetpotato varietal dissemination and uptake. A committee is currently assessing continuing with the SPHI construct through 2023 so that the 10 million household goal is attained. It is an opportunity to reflect on how the SPHI can be strengthened to ensure continued progress and to improve the functioning of the overall partnership.

I: Overview

This update report celebrates progress made during the second phase of the Sweetpotato for Profit and Health Initiative (SPHI), from July 2014 through June 2019. Back in 2009, the SPHI set an ambitious goal of reaching 10 million households by 2020. It brought together numerous organizations, known as the “coalition of the willing” that saw the promise/potential of using biofortified sweetpotato to fight micronutrient malnutrition among vulnerable populations in sub-Saharan Africa and improved sweetpotato varieties, both orange-fleshed and other flesh colors to increase household incomes. The Initiative specifically had four goals, namely: i) building consumers’ awareness of sweetpotato’s nutritional benefits, ii) assuring that 10 million African households in 16 target countries get access to improved varieties of sweetpotato; iii) diversifying use of sweetpotato on the continent, and iv) expanding market opportunities for sweetpotato growers.

To date, the SPHI has, with national partners, seen the release of 150 improved sweetpotato varieties, 100 of them orange-fleshed, across 17 countries of SSA. These have contributed to improved diet quality of vulnerable household members through numerous dissemination efforts, many of which had strong nutrition interventions. Diversified use of sweetpotato has been promoted through improved complementary foods for young children that included OFSP as a key ingredient, using orange-fleshed sweetpotato puree for baked products, and other value-added products such as juices, fries and crisps. Evidence is being gathered from project reports and impact studies that introduced varieties led to higher yields. Moreover, early maturing varieties of sweetpotato often provide food during the hunger period, when prices for sweetpotato on local markets is higher. The first phase of the SPHI (2009-mid 2014) focused on getting breeding in Africa for Africa moving, and on proof-of-concept delivery projects, i.e. proving the potential. Those efforts put the conditions in place for the second phase to increase its efforts on dissemination—or achieving the potential. By the end of Phase 1, 1.13 million households had been reached. The rate has accelerated since then as more organizations joined the SPHI. There are now 18 organizations officially part of the SPHI Steering Committee:

- Six Research or Research for Development organizations: International Potato Center (CIP), the Forum for Agricultural Research in Africa (FARA), Natural Resources Institute (NRI); North Carolina State University (NCSU), the Roots, Tubers, and Bananas Research Program of the CGIAR, and HarvestPlus
- Six Non-Governmental Organizations: Helen Keller International (HKI), Farm Concern International (FCI), Catholic Relief Services (CRS), Farm Africa, World Vision and PATH
- One Private Sector Agro-Processing Company: Euro-Ingredients Ltd (EIL)
- Five Donor Organizations: Bill & Melinda Gates Foundation, DFID, USAID, Irish Aid, and the Alliance for a Green Revolution in Africa (AGRA).

As will be described in greater detail below, by July 2019, 6.22 million households have been reached. Clearly, it will not be possible to reach the 10 million goal by January 2020. Discussions are underway to have extend the SPHI effort through 2023 (Phase 3) as a framework for achieving the original goal of the joint effort.

The importance of the flagship product of the effort, pro-vitamin A rich, orange-fleshed sweetpotato, was globally recognized in 2016 with the awarding of the World Food Prize to three CIP scientists, Maria Andrade, Jan Low, Robert Mwanga, and Howarth Bouis of HarvestPlus for their work on biofortification. Later that same year, CIP received the Al-Sumait Food Security award for its work on orange-fleshed sweetpotato.

This past two years were challenging for data collection for this annual update report because several of the larger sweetpotato projects had ended or when in closeout mode. These projects include Farm Concern International's SeFaMaCo projects in Tanzania, Uganda and Ethiopia; SUSTAIN and VISTA, two major CIP-led sweetpotato programs in Kenya, Malawi, Tanzania, Mozambique and Rwanda; and the MENU project in Uganda led by HarvestPlus.

New projects that recently joined the Initiative including Irish Aid supported efforts in Inhambane, Mozambique and in Tigray and SNNPR Ethiopia, Technologies for African Agricultural Transformation (TAAT), Quality Diets for Better Health (QDBH) project in Ethiopia and the on-

going CIP-lead Root and Tuber Crops (RTC-ACTION) project in Malawi, and several CRS-led multi-crop projects that include OFSP as a component, however, kept the “engine turning”, albeit at a slower pace than five years ago.

This report presents an update of the status of sweetpotato in sub-Saharan Africa (SSA) with respect to overall progress during the reporting year July 2018 through June 2019, emphasizing progress towards achieving the goal of the SPHI ten million households by 2020. The update focuses on the countries where on-going and completed projects are operating since the SPHI was launched in 2009. It compares progress made during the current update period with progress in the last update period (i.e., July 2017 to June 2018) and since 2009 when the Initiative was launched. As in the previous reports, we also present and compare estimates of the number of individuals benefiting from household level vine distribution by country, following the recommendation of the SPHI Steering Committee in 2016. The latter estimates are calculated based on the most recent national population statistics of the average household sizes in rural (farming) communities.

The rest of this report is organized as follows: Section II provides an update on sweetpotato production, area and yields based on FAO data while Section III presents the progress in the vine dissemination to beneficiary households. Section IV highlights recent evidence of improvement in diet quality. Section V presents data collected on improvement in sweetpotato production. Section VI reports on the location of the vine multipliers and Section VII discusses the way forward.

II: Sweetpotato production update

Figure 1, based on FAO data, presents the trends in area under sweetpotato (in hectares) relative to other food staples in Africa from 1995 (with 1994 as the base year) to 2017. As has been the past years, sweetpotato and potato maintained higher growth rates in hectareage relative to the other major crops, including maize. The data show that growth in sweetpotato hectareage dominated that of potato and all other staple crops, demonstrating continued importance of this

crop. The significantly high growth in area under these two crops is not surprising as sweetpotato and potato have higher energy output per unit time per unit area than staples cereals such as maize.

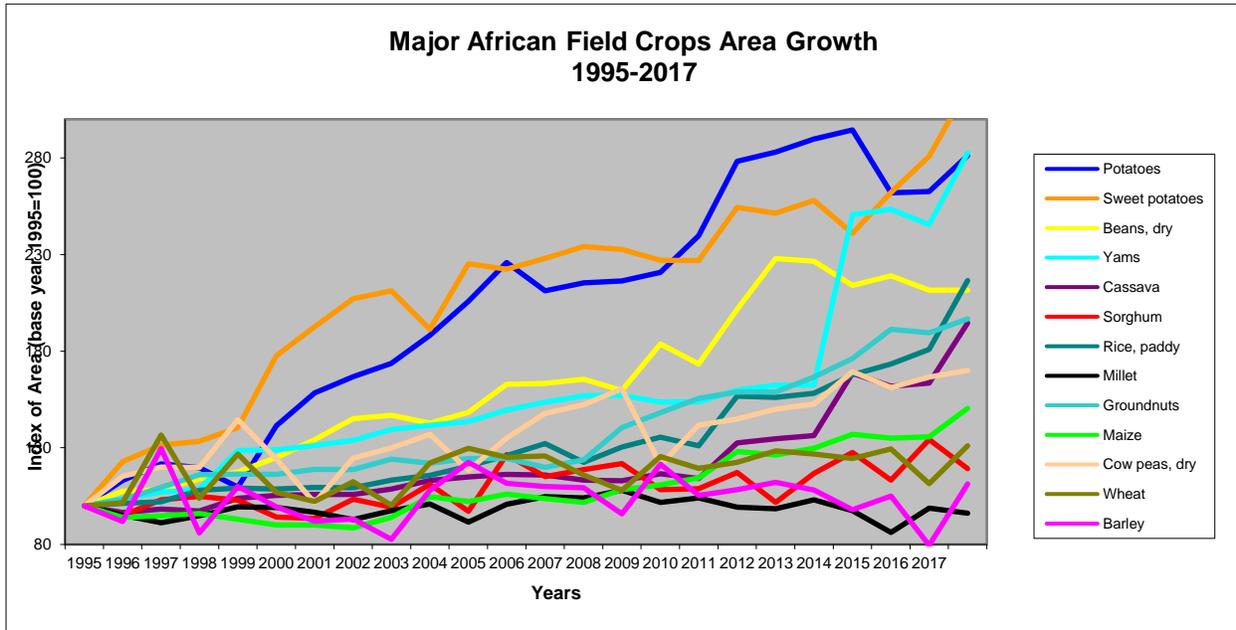


Figure 1: Growth in sweetpotato area (hectares) relative to major staples, 1995-2017

Source: FAOSTAT (2015), except for Malawi (Ministry of Agriculture and Food Security) during 1994-2016

Figures 2, 3 and 4 present the area under sweetpotato in the East and Central African, West African and Southern African SPHI countries based on the revised FAO data. In East and Central Africa, Tanzania continued its dominance in the area (in hectares) under sweetpotato with modest annual growth since 2014. On the other hand, Uganda, while still occupying the second position in terms of area under sweetpotato in the region, continued on down-ward acreage trend. The trends (Figure 2) show that sweetpotato acreage in Ethiopia has registered the strongest upward trend and is fast approaching Uganda’s acreage. Kenya showed a recovery in 2017 from a decline in the previous year while Rwanda’s acreage continued an upward trend. We note that in spite of its current role a major food security crop in Uganda, the government has not designated the crop as a priority crop. It has been emphasizing maize production, for

instance, much of which is being exported to Kenya. It is of note that a national sample survey is scheduled for Uganda next year, which should enable us to better understand the current status of sweetpotato production in Uganda, taking flesh color into account.

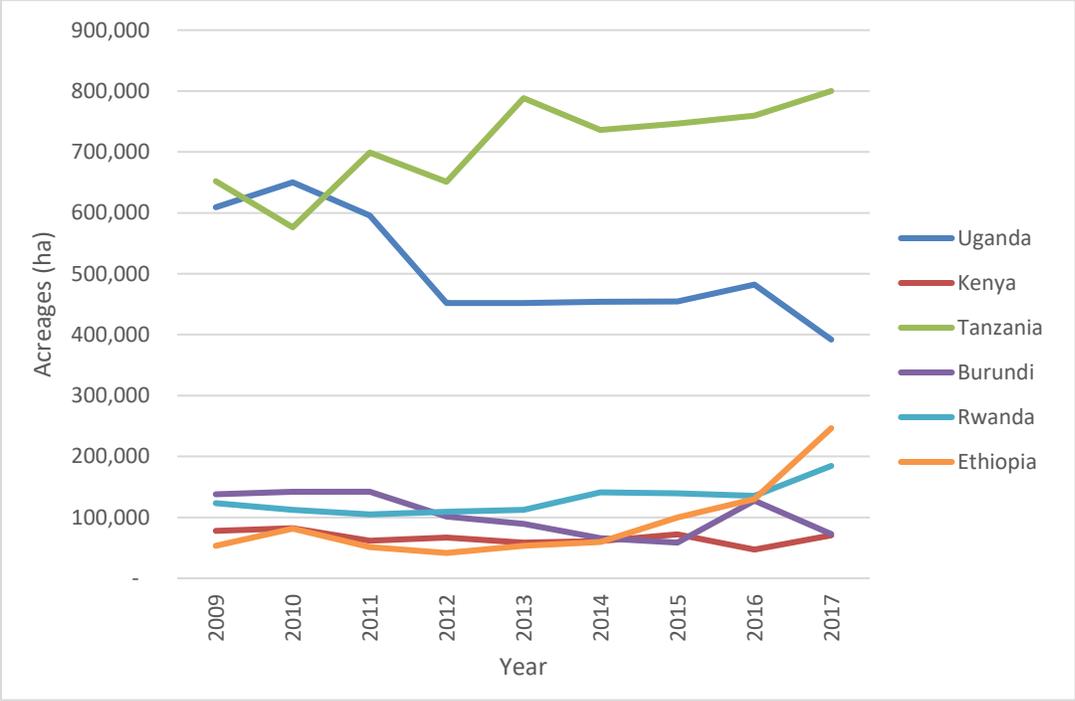


Figure 2: Trends in area (hectares) under Sweetpotato in the East and Central Africa SPHI countries, 2009 – 2017

Source: FAOSTAT, Accessed August 01, 2019

In West Africa, Nigeria still emerges as the leading West African country in terms of area under sweetpotato, followed distantly by Ghana. The data (see Figure 3) show that hectarage of sweetpotato in Nigeria has increased sharply since 2009. On the other hand, area expansion for the other west African countries (especially Burkina Faso and Benin) virtually stagnated since 2009, with the exception of DR Congo which recorded a slight growth following a decline between 2015 and 2016. We note, however, that data collection on sweetpotato in West Africa is extremely poor.

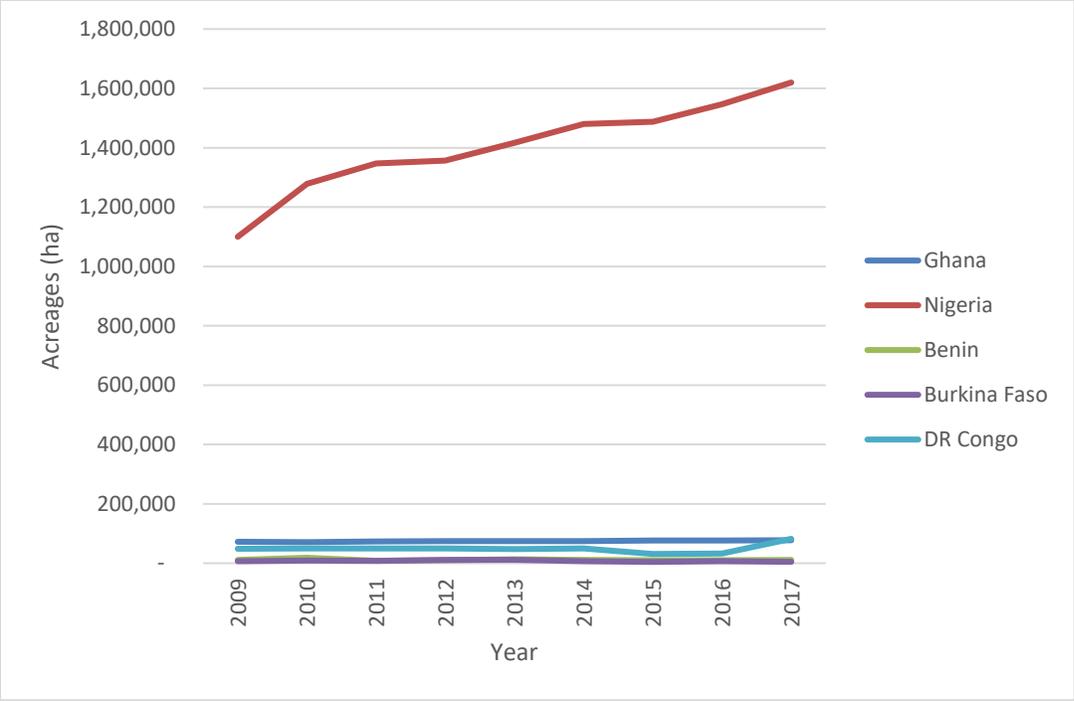


Figure 3: Trend in sweetpotato area (hectares) in West African SPHI countries, 2009-2017

Source: FAOSTAT, Accessed August 01, 2019

In Southern Africa, Malawi and Angola were the leading countries in terms of area under sweetpotato as shown in Figure 4. The figure, however, shows that while Malawi continued to dominate the other countries, it recorded a decline in area. This is probably due to the change this year by this update to use FAOSTAT data instead of actual production data collected by the Malawi government. In previous years, sweetpotato statistics reported by the FAOSTAT database were reported incorrectly under potato. Angola, unlike Malawi, continued to record an increase in area under sweetpotato production as was in previous years dating back to 2012. Mozambique also continued an upward growth in area under sweetpotato for the third consecutive year.

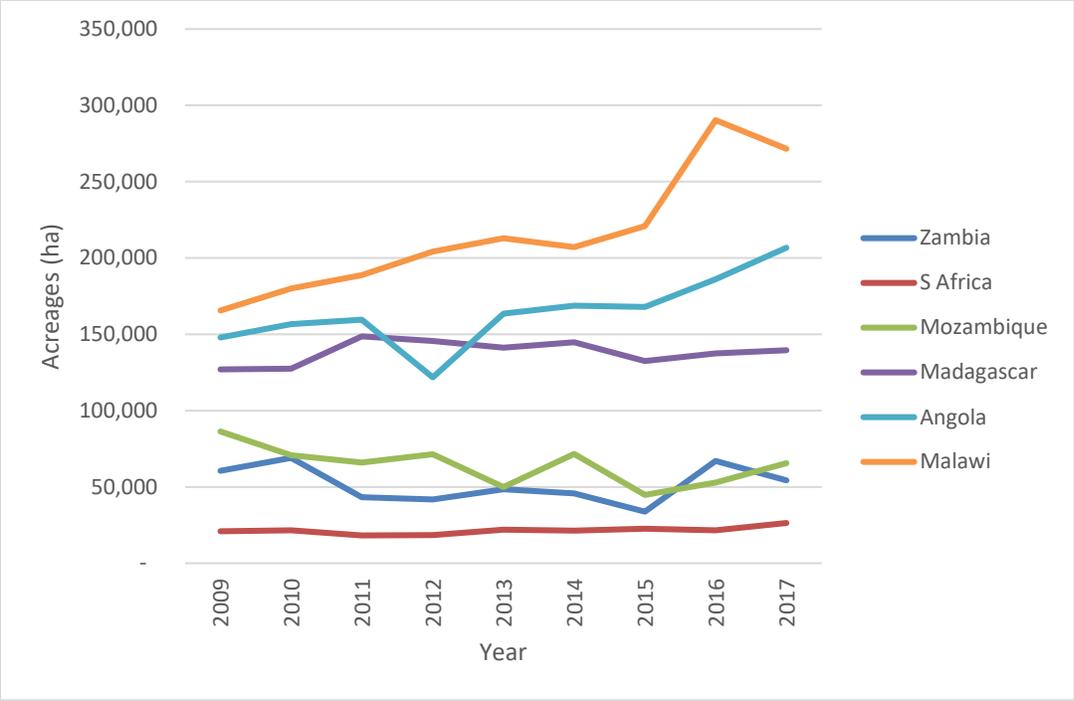


Figure 4: Trends in acreage (hectares) of sweetpotato in Southern Africa, 2009-2016

Source: FAOSTAT Accessed August 01, 2019. For Malawi, Ministry of Agriculture, Irrigation, and Water Development data is used for 2009 to 2016.

Figure 5 presents the annual incremental expansion in sweetpotato area for each of the SPHI countries over the last eight years starting from 2009, the year SPHI was launched, based on the revised FAOSTAT data. Nigeria, Tanzania, and Uganda maintained their dominance in sweetpotato production over the rest of the SPHI countries in terms of area (in hectares) under sweetpotato. The figure shows steady increments in the area under sweetpotato over the 2009-2017 period, especially for Nigeria, indicating perhaps that the relevant country statistical office is using a formula to calculate annual progress.

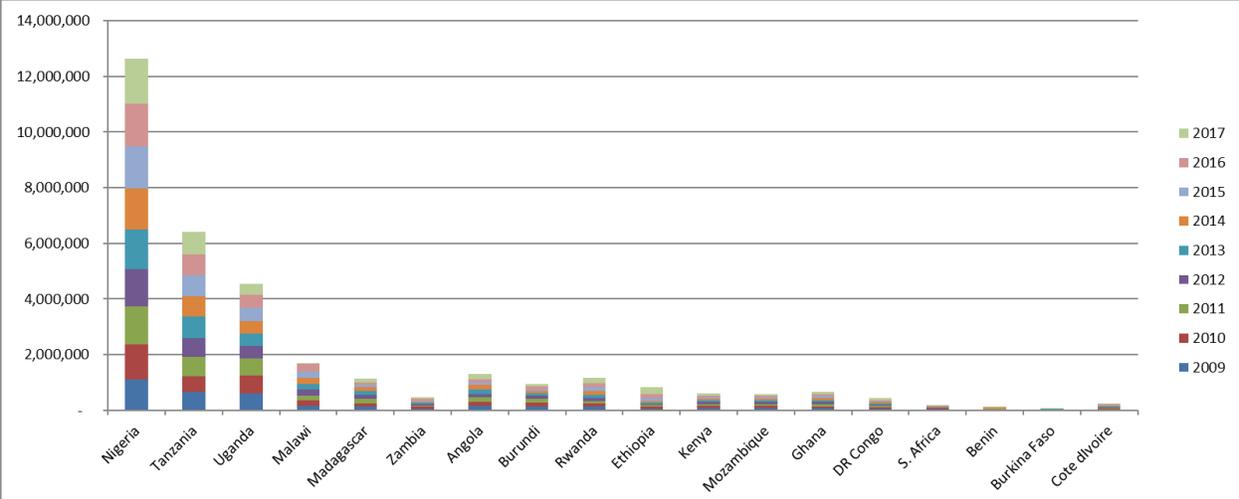


Figure 5: Trends in sweetpotato area (hectares) among the SPHI countries during 2009-2017
 Source: FAOSTAT, Accessed August 01, 2019.

Trends in sweetpotato production

Figures 6-8 present the recent trends in sweetpotato production (2000-2017) by sub-region in the 17 SPHI countries based on FAO data. The figures show that Nigeria, Uganda, Tanzania, Malawi and Mozambique dominate the rest of the SPHI countries in their respective sub-regions. In Southern Africa, the three leading sweetpotato producers remain Malawi, Mozambique and Angola, with Angola having overtaken Madagascar in 2013. Zambia and South Africa are the least sweetpotato producing countries in this region. In Eastern and Central Africa, Uganda and Tanzania lead the rest of the countries. Ethiopia, which recorded a very strong growth in production between 2011 and 2014, registered a very sharp decline in 2015 due to drought. The recovery in 2016 and 2017 still fell short of the all-time high production in 2014. The data also show that sweetpotato production in Uganda fell even further in 2017. This is in line with the decline in area under sweetpotato presented above.

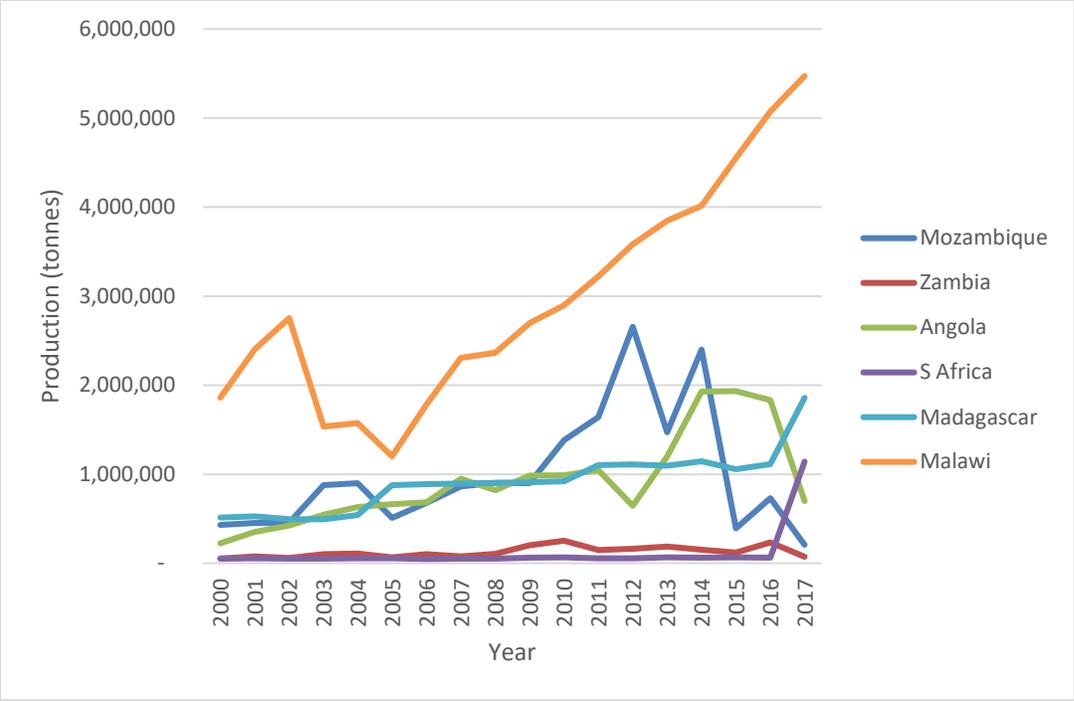


Figure 6: Trends in sweetpotato production (tons) in Southern Africa, 2000-2017

Source: FAOSTAT, Accessed August 01, 2019. For Malawi, Ministry of Agriculture, Irrigation and Water Development data is used for 2009 - 2016

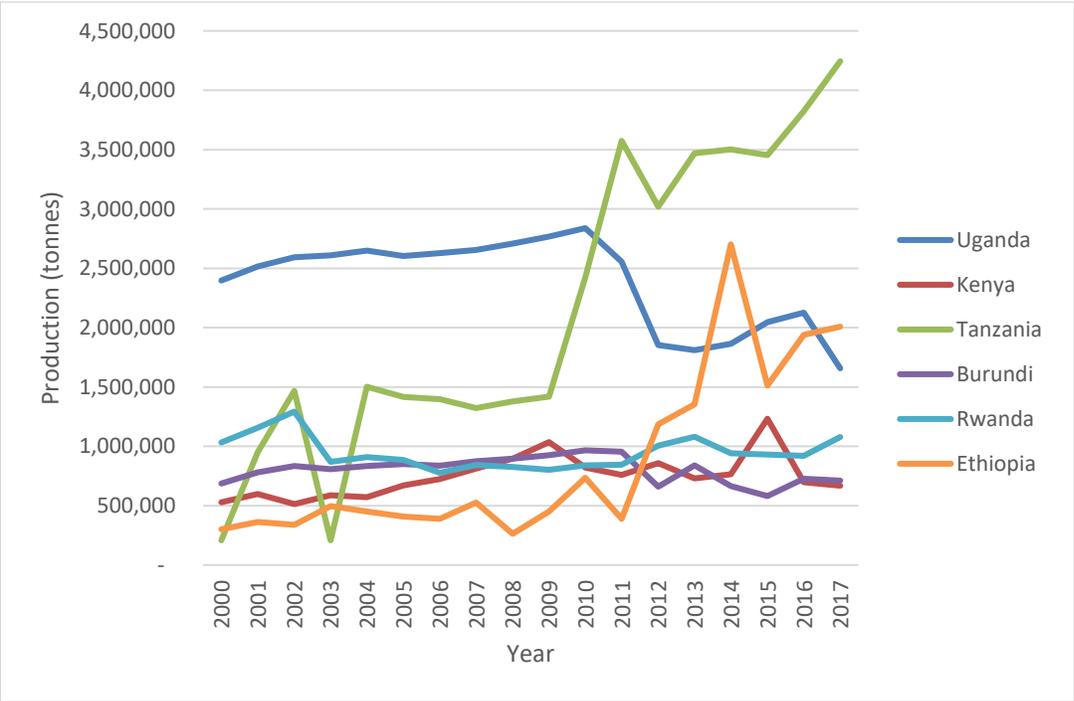


Figure 7: Trends in sweetpotato production (tons) in East and Central Africa, 2000-2017

Source: FAOSTAT, Accessed August 01, 2019

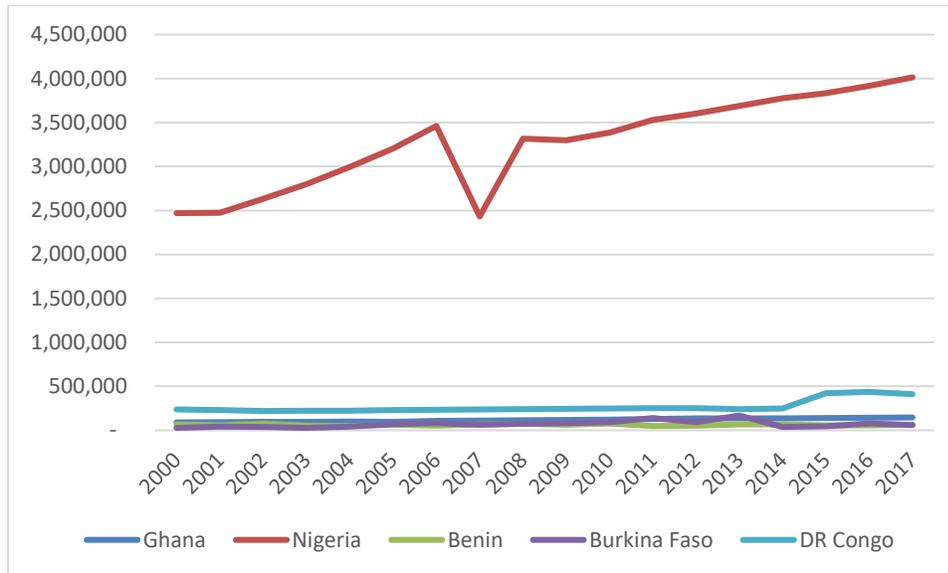


Figure 8: Trends in sweetpotato production (tons) in West Africa, 2000-2017

Source: FAOSTAT, Accessed August 01, 2019

Figure 9 presents the annual increases in sweetpotato production in the SPHI countries since the launch of the Initiative in 2009, based of FAO's revised data. Malawi, Nigeria, Tanzania and Uganda continued to lead the other countries in production. As in the previous years, production increases were highest in Malawi, Nigeria and Tanzania, with Uganda being relegated to the fourth position. Thus, Malawi continued to lead the rest of the SPHI countries in production increases even though it had much lower land allocated to sweetpotato production. This difference is due to differences in yield improvement among these countries. Malawi has had a nationwide distribution of improved OFSP varieties.

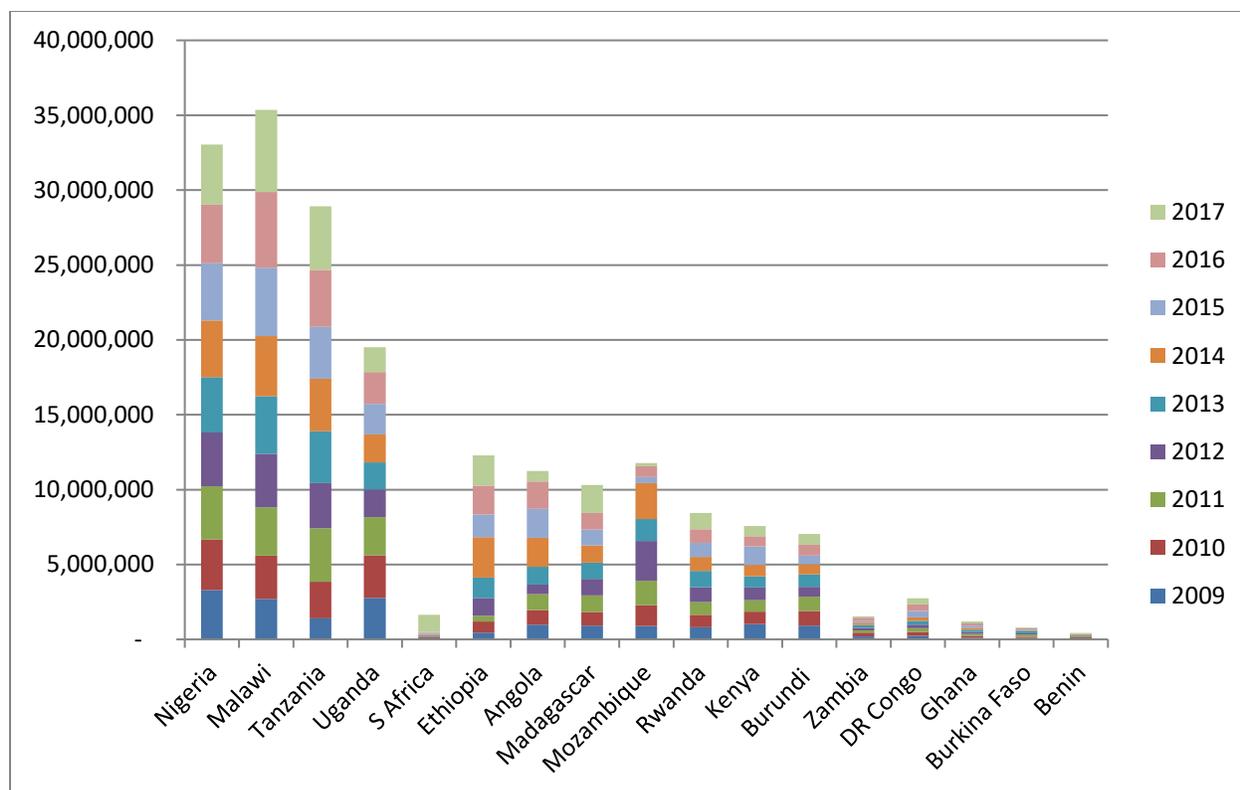


Figure 9: Trends in sweetpotato production (tons) among the SPHI countries over, 2009-2017

Source: FAOSTAT, Accessed August 01, 2019. For Malawi, Ministry of Agriculture, Irrigation and Water Development data is used for 2009 – 2016

III. Progress in variety release and dissemination

a) Variety release

Great strides have been made in breeding for biotic and abiotic stresses and quality traits in SPHI target countries with the three sweetpotato breeding platforms established in Southern, Eastern and Western Africa supporting national program sweetpotato breeding efforts. Overall, a total of 150 varieties have been released since 2009. A detailed summary update of sweetpotato variety release to date, by SPHI countries and by the flesh color, is presented in Figure 10 and Table 1, respectively. The figure shows a strong progress in varietal development since 2009 with several releases in 2010-2014 and 2017-2019 periods.

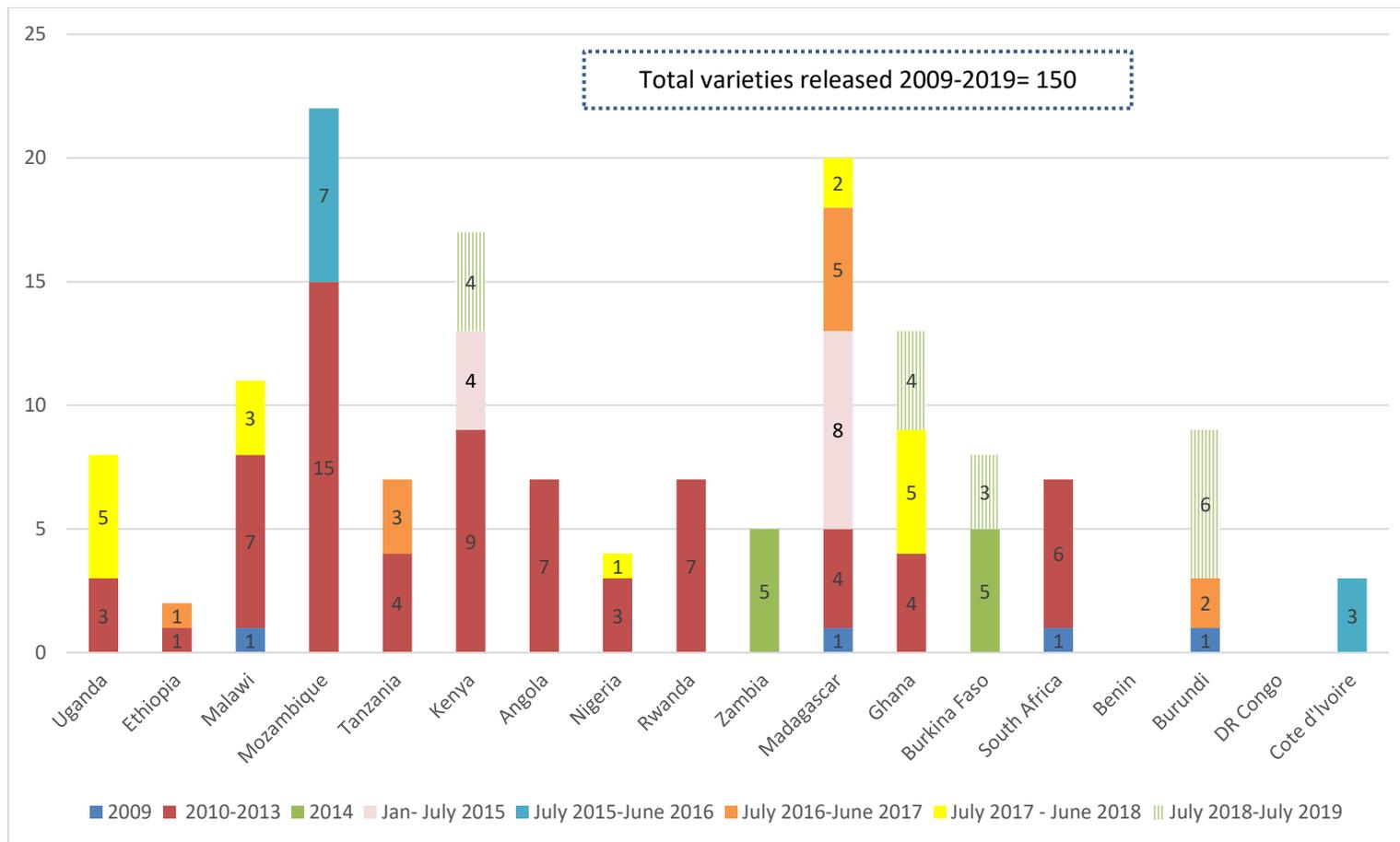


Figure 10: Sweetpotato varieties released in SPHI target countries, 2009-July 2019

Source: Compilation from breeder reports from various countries

Table 1: Number of varieties released, by country and sweetpotato flesh color type (2009-2019)

	2009		2010-2014		2015		Jan-June 30, 2016		July 2016-June 2017		July 2017- June 2018		July 2018-July 2019		TOTAL	
	Non-OFSP	OFSP	Non OFSP	OFSP	Non OFSP	OFSP	Non-OFSP	OFSP	Non-OFSP	OFSP	Non-OFSP	OFSP	OFSP	Non-OFSP	Non-OFSP	OFSP
Tanzania			2	2			1	2							3	4
Burkina Faso				5									3		0	8
Malawi		1	2	5									3		2	9
Ghana			3	1							3	0	2	4	10	3
Kenya	1	1	2	5	3	1							2	2	9	9
Mozambique				15			2	5					3	3	5	23
Uganda			1	2							5				6	2
Nigeria			1	2								1			2	2
Zambia			1	4											1	4
Ethiopia			1						1						2	0
S. Africa		1	5	1											1	6
Angola				7											0	7
Madagascar		1	2	2	3	2				5			2	3	8	12
Rwanda			5	2											5	2
Cote d'Ivoire					1	2									1	2
Burundi	1									1		7			2	7
Total	2	4	25	53	7	5	3	7	1	6	8	8	15	12	56	100

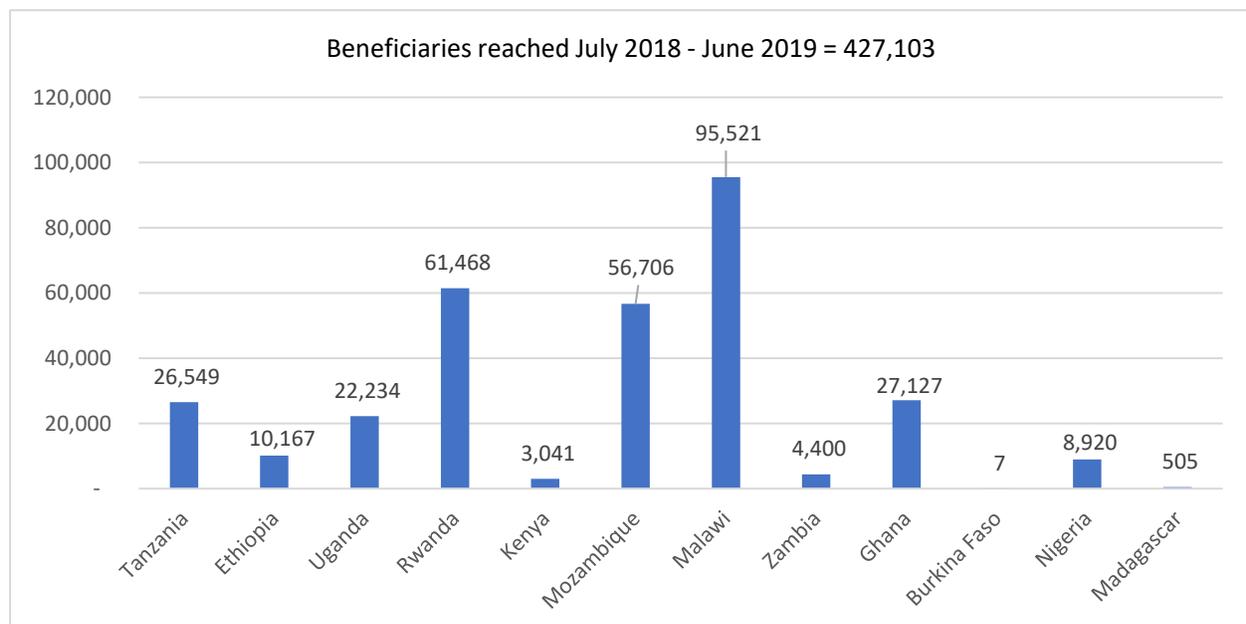
Source: Compilation by sweetpotato breeders from various countries (2009 – July 2019)

This has been a phenomenal achievement and is due to the funding SPHI secured from the Bill & Melinda Gates Foundation for CIP's three population development programs, and from support from the Alliance for Green Revolution in Africa (AGRA) to the national breeders in the region. The AGRA funding supported national breeding programs in Kenya, Uganda, Tanzania, Rwanda, Malawi, Mozambique, Zambia, Nigeria, Burkina Faso and Ghana from 2009-2014.

b) Progress in reaching the 10 million beneficiaries

Figure 11 presents the number of direct and indirect beneficiaries reached with improved varieties of sweetpotato during the reporting year. Compared to the previous reporting years, there was a decline in the number of beneficiaries reached for two consecutive years. The total number of beneficiaries reached during this reporting period was 427,103 households, about 40% less than the beneficiaries reached during the previous reporting period. The decline is due to drop in vine delivery activities resulting from closure of some larger dissemination projects, such as the SUSTAIN and VISTA projects and Farm Concern International’s SeFaMaCo project.

Figure 11 also shows that Malawi, Rwanda and Mozambique made the greatest contributions towards reaching the goal of 10 million beneficiaries during this reporting period. Tanzania and Ethiopia which in the past had the big SeFaMaCo project made relatively small contributions during the past year, as did Uganda. It is likely, however, that many other organizations are promoting OFSP, but since they are not part of the SPHI, these activities are not being captured.



The graph in Figure 12 illustrates the contribution of various projects towards the goal of reaching 10 million households by 2020. A total of 14 projects operating in 12 countries reported implementing activities that included dissemination of vines of improved sweetpotato varieties during this update period. Projects with substantial contribution to the total number of beneficiaries during this update period were SUSTAIN in Malawi; VISTA (Feed the Future) in Mozambique and Malawi, respectively, and the MENU project led by HarvestPlus in Uganda.

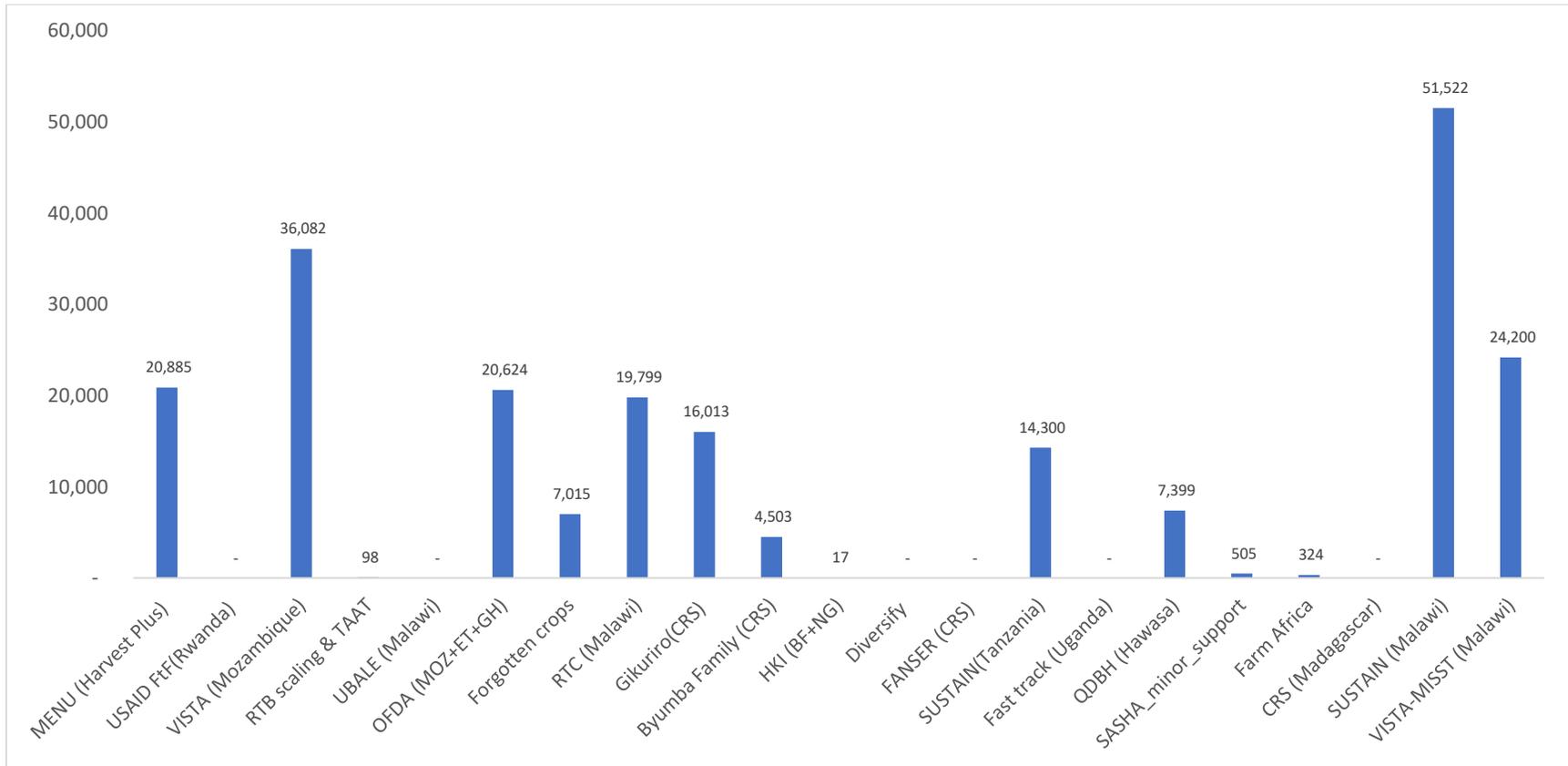


Figure 12: Number of improved sweetpotato vine beneficiary households reached by various projects during the July 2018- June 2019 update period

The graph in Figure 13 presents the number of beneficiaries reached during the reporting year, disaggregated by the gender of the person receiving the vines for the household, whenever that information was available (68% of households¹). A total of 251,199 gender-disaggregated beneficiaries (141,328 females and 73,871 males) received vines during the reporting year.

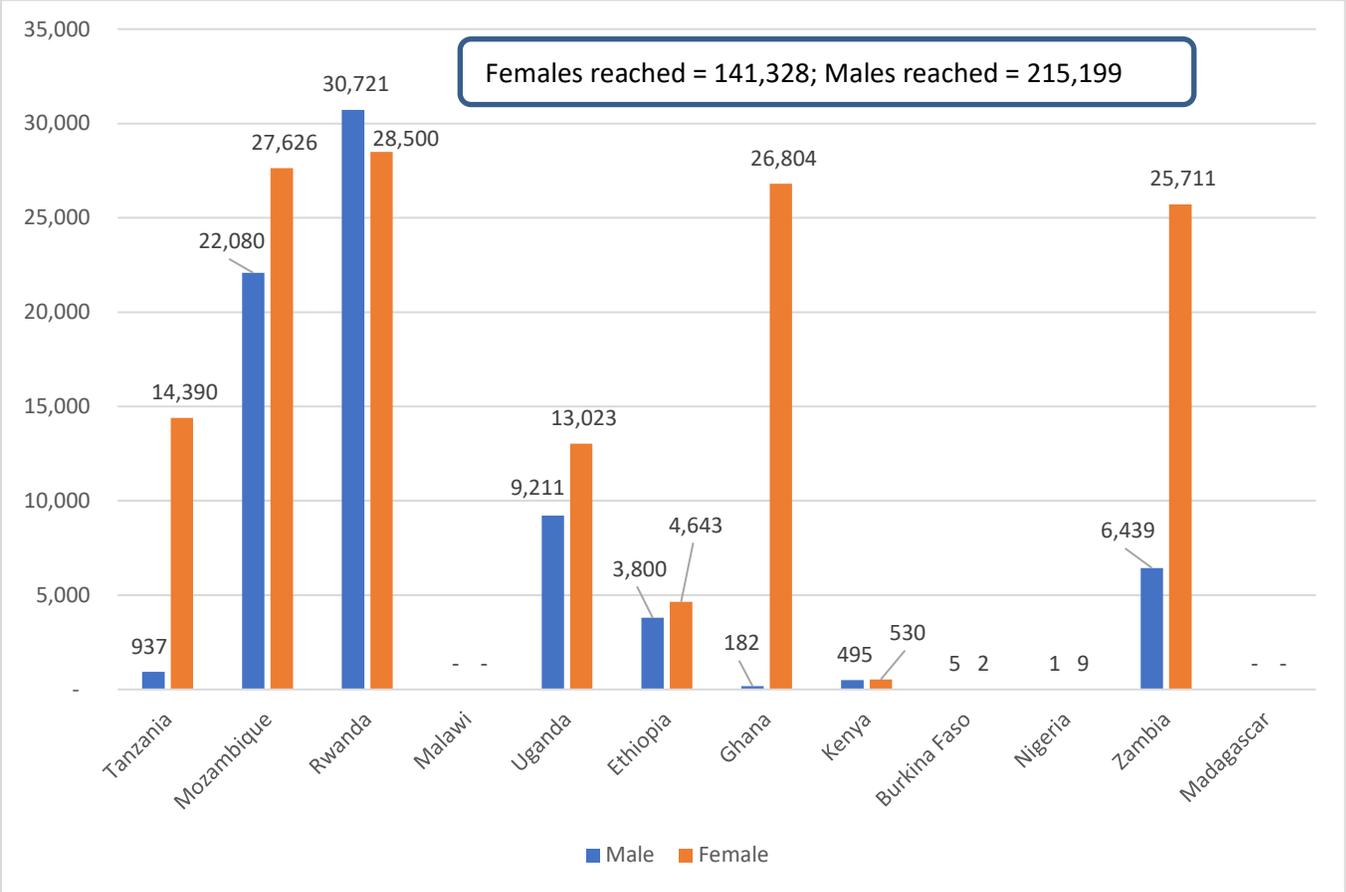


Figure 13: Number of beneficiaries reached with improved sweetpotato vines during the update period (July 2018 – June 2019), beneficiaries disaggregated by gender of the recipient of the vines

Figure 14 summarizes the estimated number of direct and indirect² beneficiary households reached by the different projects in each of the SPHI countries between July 01, 2018 and June

¹ Note that often projects do not gather information on the gender of the indirect beneficiaries.

² We define an indirect beneficiary as a household that receives vines from sources other than the project or its implementing partners— e.g., a neighbor, friend, or an agency (or organization) that has no partnering relationship with the project. Just listening to a radio program does NOT count. A direct beneficiary, on the other hand, is a household that receives cuttings for planting directly from the project or its implementing partner(s).

30, 2019. During this period, there 295,205 direct and 131,898 indirect beneficiaries were reached, giving rise to a total of 427,103 beneficiaries. Indirect beneficiaries constituted 31% of the total number of beneficiaries. During this reporting period, Malawi and Mozambique reported the largest numbers of beneficiaries reached indirectly through farmer to farmer exchange. The momentum however slowed down significantly in the second half of the update period (January – June 2019) as most projects had either closed or had only limited outreach activities. Table 2 depicts this slow down, especially in West Africa where only 35,893 beneficiaries were reached altogether.

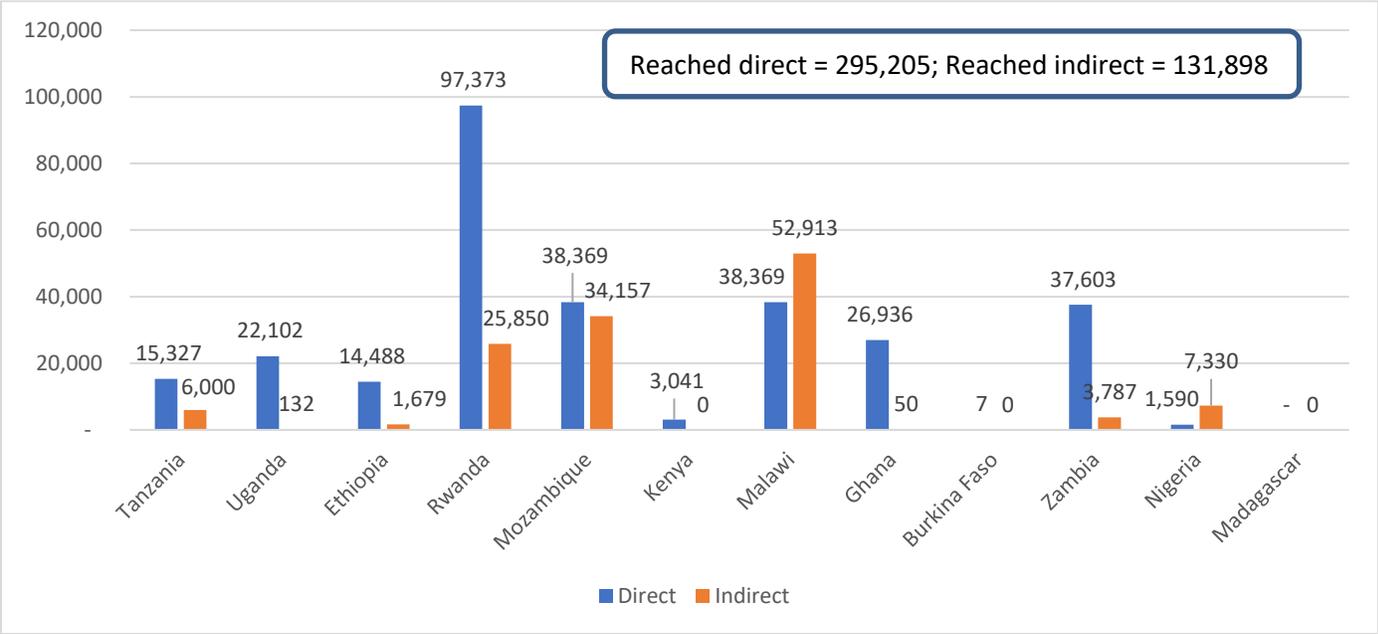


Figure 14: Number of beneficiaries of improved sweetpotato vines reached during the current update period (July 2018 – June 2019), by beneficiary type

Table 3: Number of households receiving sweetpotato vines by country and beneficiary type, January 01, 2019 - June 30, 2019

VINE DISSEMINATION JAN 01, 2019 TO JUNE 30, 2019 (HOUSEHOLDS REACHED)											
Country	Some project (s) operating in the countries	Lead Institution	Direct beneficiaries			Indirect beneficiaries			Grand total	Partners	comments
			Male	Female	Total direct	Male	Female	Total indirect			
WEST AFRICA											
Nigeria											
Nigeria	HKI	CIP	1	9	10	0	0	0	10		
NIGERIA (TOTALS)			1	9	10	0	0	0	10		
Ghana	RTB Scaling Triple S and TAAT		75	11	86				86	Starter vines for DVMs	
GHANA (TOTALS)			75	11	86	0	0	0	86		
Burkina Faso	PAV-PDCO (HKI)	HKI	5	2	7				7	Decentralized vine multipliers	
BURKINA FASO (TOTALS)			5	2	7	0	0	0	7		
EAST AND CENTRAL AFRICA											
Tanzania	SUSTAIN	CIP	615	13,685	14300				14,300	Local government	
Tanzania	Forgotten crops	CIP	320	695	1015			6000	7,015	Local government	
Tanzania	TAAT	CIP	2	10	12				12	AFCO investments, EIL- Nairobi and Vegrab and WAFCO Ltd, IITA youth	
TANZANIA (TOTALS)			937	14,390	15327	0	0	6,000	21,327		
Kenya											
Kenya											
KENYA (TOTALS)			0	0	0	0	0	0	0		
Uganda	MENU	Harvestplus	8568	12317	20885				20885		
	FARM AFRICA (SPFP)		108	148	256	40	28	68	324	Sweetpotato producers and Processors Association (SOSSPA)	
	Fast track							0	0		
UGANDA (TOTALS)			8676	12465	21141	40	28	68	21209		
Rwanda	Gikuriro program (INWA)	CRS	3358	9946	13304	891	1818	2709	16,013	Caritas; DUHAMIC ADRI; AEE (African Evangelistic Enterprise); YWCA	
Rwanda	Byumba Family project		1042	3458	4500		3	3	4,503	Caritas	
Rwanda	Rwanda_Government	Government				12853	6331	19184	19,184	RAB; MINAGRI	
Rwanda	SUSTAIN	CIP	28,660	13,911	42,571				42,571	Imbaraga; YWCA; UNICOOPAGI; DERN; RAB/MINAGRI	
RWANDA (TOTALS)			33,060	27,315	60375	13,744	8,152	21,896	82,271		
DR Congo					0						
Ethiopia	Quality Diets for Better Health	CIP			5720	54	952	1679	7399	People in Need	
Ethiopia	Emergency (OFDA)	CIP	4,547	1,453	6,000				6000		
Ethiopia	SEFAMACO	CIP									
ETHIOPIA (TOTALS)			4,547	1,453	11,720	54	952	1,679	13,399		
SOUTHERN AFRICA											
Malawi	VISTA-MISST	CIP			2200			22000	24200		
Malawi	DIVERSIFY	CIP								Government, Iman, United Purpose	
Malawi	RTC-ACTION	CIP	4,459	11,101	15560				19799	CADECOM, DARS, DAES, Concern World Wide,	
Malawi	SUSTAIN	CIP	7248	13361	20609	10872	20041	30913	51522	Self Help Africa; Plan International; Evangelical Association of Malawi; Action Aid; Min of Agriculture Water Irrigation Services	
MALAWI (TOTALS)			11,707	24,462	38,369	10,872	20,041	52,913	95,521		
Mozambique	Niassa (Irish Aid)	CIP			0				0		
Mozambique	VISTA		5530	4779	10309	13825	11948	25773	36082	IHAM, World Vision, SDAE	
Mozambique	SUSTAIN +VISTA+OFDA				7000				7,000.0		
Mozambique**	OFDA	CIP	1048	4192	5240	1677	6707	8384	13,624	SDAE-Chókwe and Guijá	
MOZAMBIQUE (TOTALS)			6578	8971	38,369	15,502	18,655	34,157	56,706	U5, Drought affected hhds	
South Africa					0						
Zambia	FANSER	CRS			0			0	0		
ZAMBIA (TOTALS)			0	0	0	0	0	0	0		
Madagascar	CRS				0						
Madagascar	Minor SASHA support	FIFAMANOR			0						
MADAGASCAR (TOTALS)			0	0	0	0	0	0	0		

Figure 15 presents historical trends in the number of households reached with improved sweetpotato vines since 2010. It is based on the reported sum of direct and indirect beneficiaries reached by the various sweetpotato projects in each of the SPHI countries during the different reporting/update periods. As noted earlier, the increase in the number of beneficiaries reached is much less compared to the previous years. Nonetheless, Tanzania, Mozambique, Uganda, Ethiopia and continued to lead the rest of SPHI countries in terms of beneficiaries reached and progress towards the initial set targets, although the magnitude of contribution changed during this update period. Ethiopia and Mozambique have surpassed their target by more than 295% and 115%, respectively, this reporting year (see Figure 15 & 16). On the other hand, Tanzania, Kenya and Uganda have attained 80%, 75% and 55% of their respective target number of households, as shown in Figure 16. In addition, Burkina Faso has met more than 95% of its target, although compared to the other four countries above, it was assigned a relatively low target of 51,300 households.

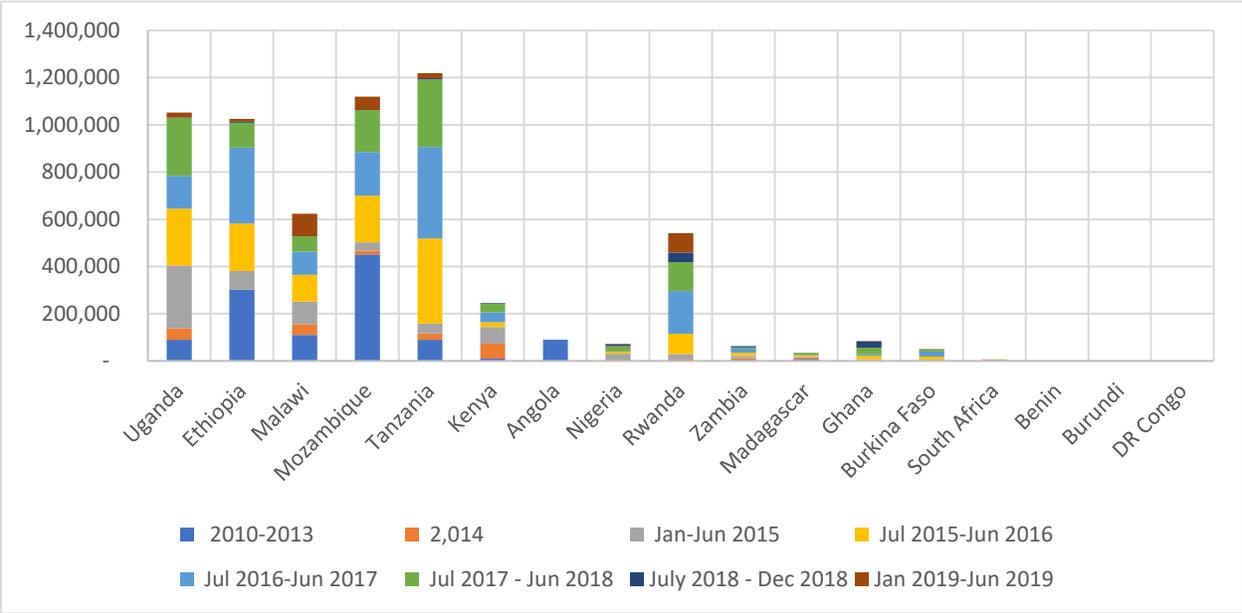


Figure 15: Number of beneficiaries of improved sweetpotato vines reached by CIP and partners, 2009 – July 2019, by country

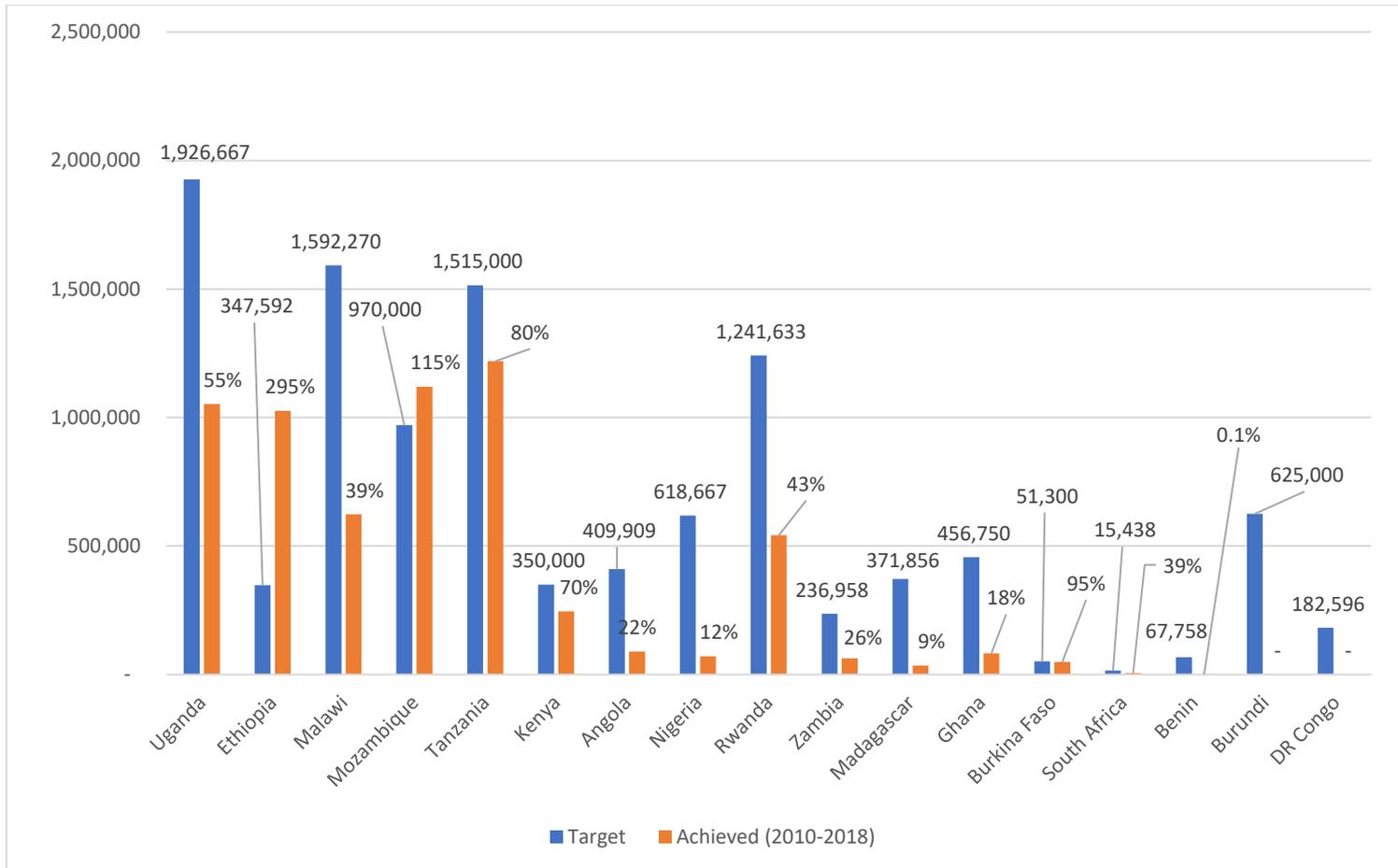


Figure 16: Progress towards SPHI beneficiary targets, percent of targets achieved in each SPHI country, 2010 – June 2019

Figure 17 summarizes the cumulative number of beneficiaries of improved sweetpotato varieties since the launch of the platform (i.e., 2010 to date). It shows that a total of 6,224,647 which is about 62% of the target of 10 million households (beneficiaries).

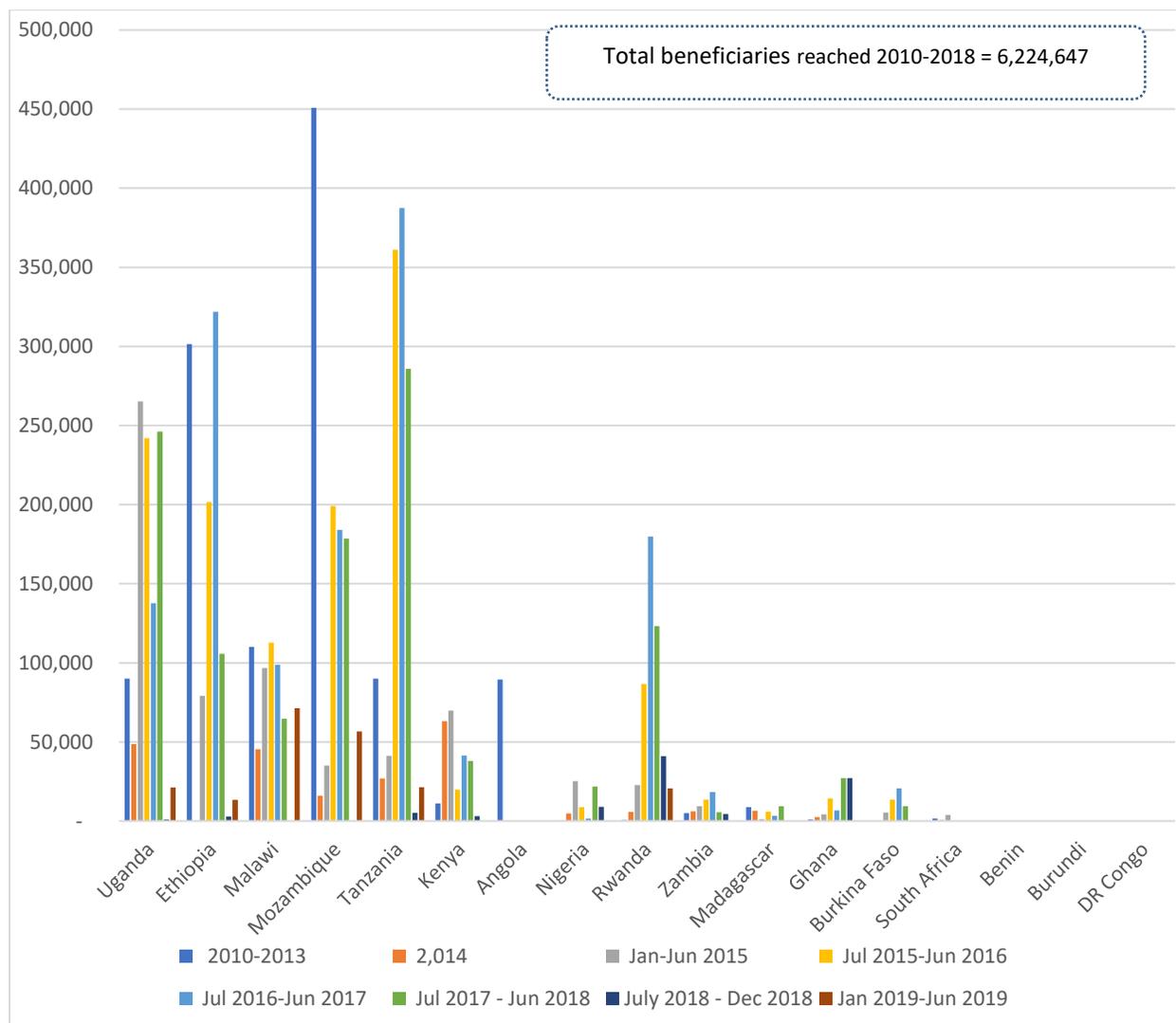


Figure 17: Cumulative number of beneficiaries reached from 2010 June 2019, by country

As in the previous year's, this update report presents estimates of the number individual beneficiaries reached by projects under the SPHI platform during this 2017-2019 update period, as well as the cumulative number of individuals reached since 2010. The estimates are obtained by multiplying the number of households reached by the average household size in rural areas

based on data from national statistics. Figure 18 shows that nearly 1.8 million individuals benefitted from the provision of improved (biofortified) sweetpotato vines during the update period. The largest number of individual beneficiaries were in Rwanda, Malawi and Mozambique, reflecting the large number of households reached in these countries with improved varieties of sweetpotato during this reporting period. Over the entire period (2010 to 2017), more than 29 million individuals have been reached directly or indirectly with improved varieties of sweetpotato (Figure 19). These figures demonstrate the scale of impact the Initiative has had to date on vulnerable households and individuals.

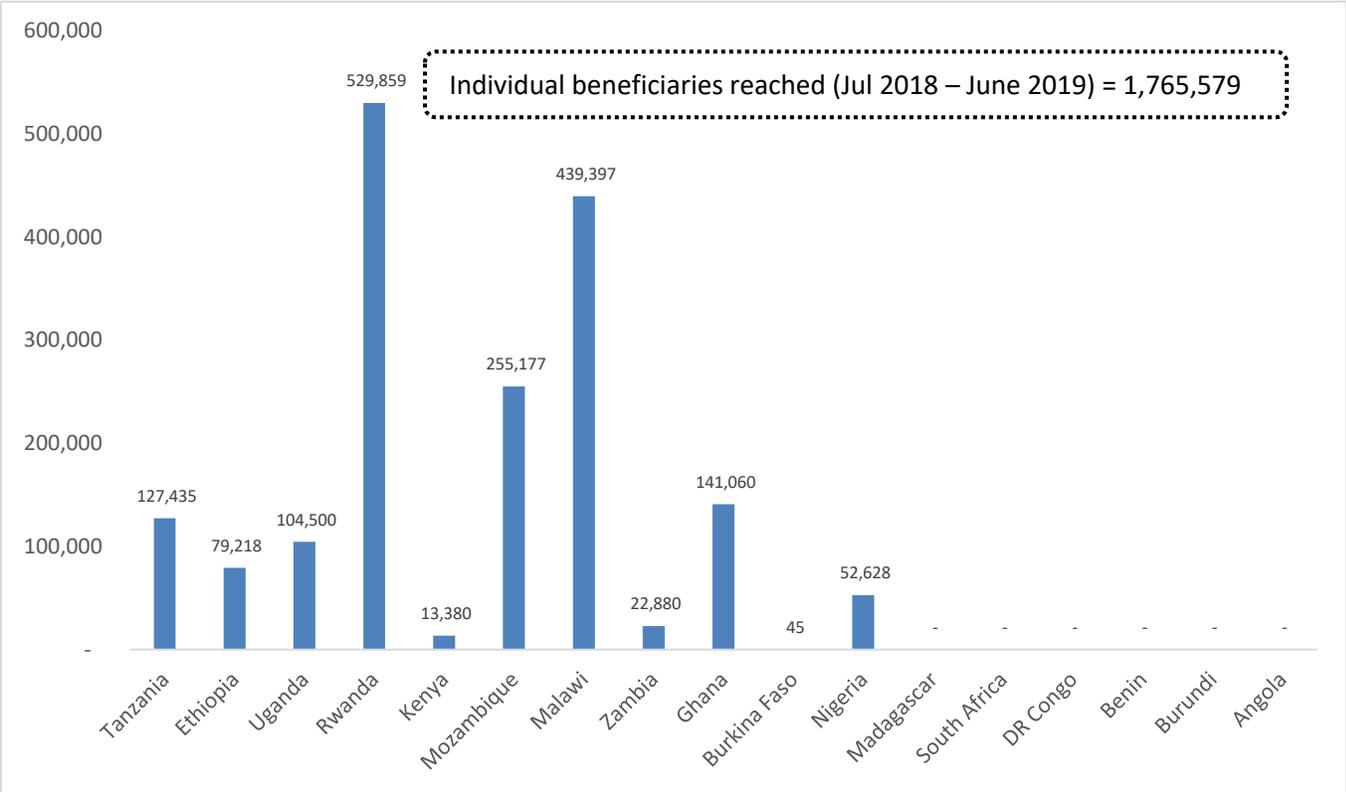


Figure 18: Number of individual households reached during the reporting period (July 01, 2018 – June 2019)

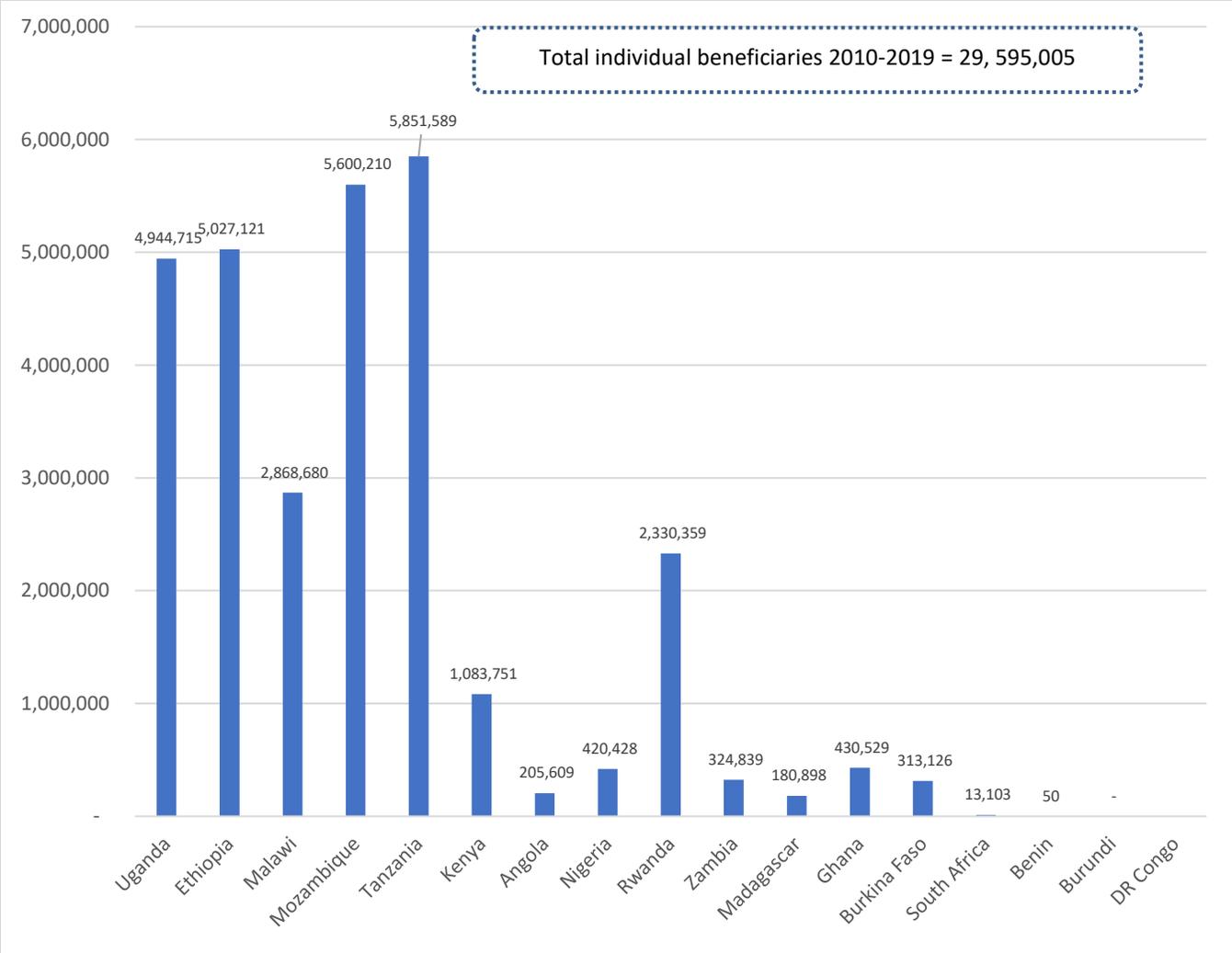


Figure 19: Number of individual beneficiaries reached 2010 – June 2019

V. Evidence of improvement in diet quality

Improvement in diet quality, especially changes in dietary diversity scores for children under the age of 5 years and pregnant/lactating women, is one of the key indicators tracked by the SPHI member projects. Over the years, most member projects have reported improvements in dietary diversity for the under 5 children and caregivers (especially women) in their intervention areas. Unlike the past, there was only one project that conducted an endline survey during the reporting period, and therefore, provides evidence of changes in diet quality among project beneficiaries/participants. This was the VISTA project in Mozambique (see Table 4). The table shows that was improvement in quality of diet for both children under 5 years of age and women

of reproductive age belonging to households which participated in the project. In both cases, a t-test of difference in means between project participants and non-participants yielded a p-value of 0.000 indicating that there is strong statistical evidence that participant households fared better than their counterparts. In addition, CIP recently completed a national survey in Malawi aimed at understanding not only the adoption but also longer-term impact of provision of OFSP vines coupled with some agronomic training and nutrition education on beneficiary households. Detailed analysis of the data is underway, but there is evidence from preliminary analysis that households in the communities that participated in CIP projects were consuming more diverse diets than their counterparts in non-intervention communities.

Table 4: Improvements in quality of diet of members of project beneficiary households in Nampula, Mozambique, VISTA endline survey, 2019

		CDDS ³ (8 food groups)		MDDS-W ⁴ (10 food groups)	
Year	Project	Non-Participant (N=296)	Participant (N=400)	Non-participant (N=654)	Participant (N=884)
2018	VISTA	2.38	3.36	2.09	3.09

V. Evidence of improvement in value of sweetpotato production

One of the main aims of the SPHI is to improve sweetpotato yields due to using improved varieties. The additional production could be consumed or sold to generate income. This annual update report therefore usually presents results of how projects implemented in the SPHI countries have influenced sweetpotato production and sales.

³ Child dietary diversity score (CDDS) is number of foods groups consumed by a child 06-23 months old in the last 24 hours. A threshold of 4 foods groups is required for adequate dietary diversity among children of this age bracket.

⁴ Minimum dietary diversity score for women (MDDS-W) of reproductive age is the number of foods groups consumed by women 15-49 years of age in the last 24 hours. A threshold of 5 foods groups is required for adequate dietary diversity for this category of women.

During this update period, CIP undertook a major investment in conducting a nation-wide crop cut exercise in Malawi. The detailed results of this exercise are presented in a separate report, *The Malawi Sweetpotato Yield Determination in 2019 using the Crop Cut Method*. The exercise comprised 768 crop-cuts conducted in 12 out of 14 agroecological zones of Malawi and spanning the whole country. It found that orange-fleshed sweetpotato varieties released and disseminated in Malawi are performing quite well. Specifically, the results indicate that, Mathuthu was the best performer in terms of root production, with an average yield of nearly 11.7 tonnes per hectare, followed by the Chipika variety at 9.4 tonnes per hectare. These yields were comparable to or higher than those of the dominant non-OFSP improved variety Kenya whose average yield was 9.8 tonnes per hectare, and higher than the yield for Zondeni variety (7.1 tonnes per hectare), a local orange-fleshed landrace. In terms foliage yield, Kaphulira and Chipika had the highest yield, both at 12.2 tonnes per hectare, among the improved OFSP varieties. This performance compared favourably with foliage yield of a locally well-adapted Kenya variety with an average foliage yield of 13.6 tonnes per hectare.

VI: Improving access to clean sweetpotato planting material

Improving farmer access to clean quality planting materials of sweetpotato is critical to meeting the goals of SPHI. Consequently, projects put a lot of emphasis on ensuring that farmers (especially targeted beneficiary households) can access clean planting materials of new and/or improved sweetpotato varieties. This has resulted in an increase in the number of trained vine multipliers in many of the SPHI countries during the update period. Vine multipliers, especially the so-called decentralized vine multipliers (i.e., DVMs), play an important role in facilitating access to OFSP vines by virtue of being located closer to the targeted households. Because they are village-based, they are typically much closer to smallholder sweetpotato farmers than research stations thus saving time and financial costs of obtaining quality vines. Figure 20 below presents the trends in number of vine multipliers in each of the SPHI countries since 2015.

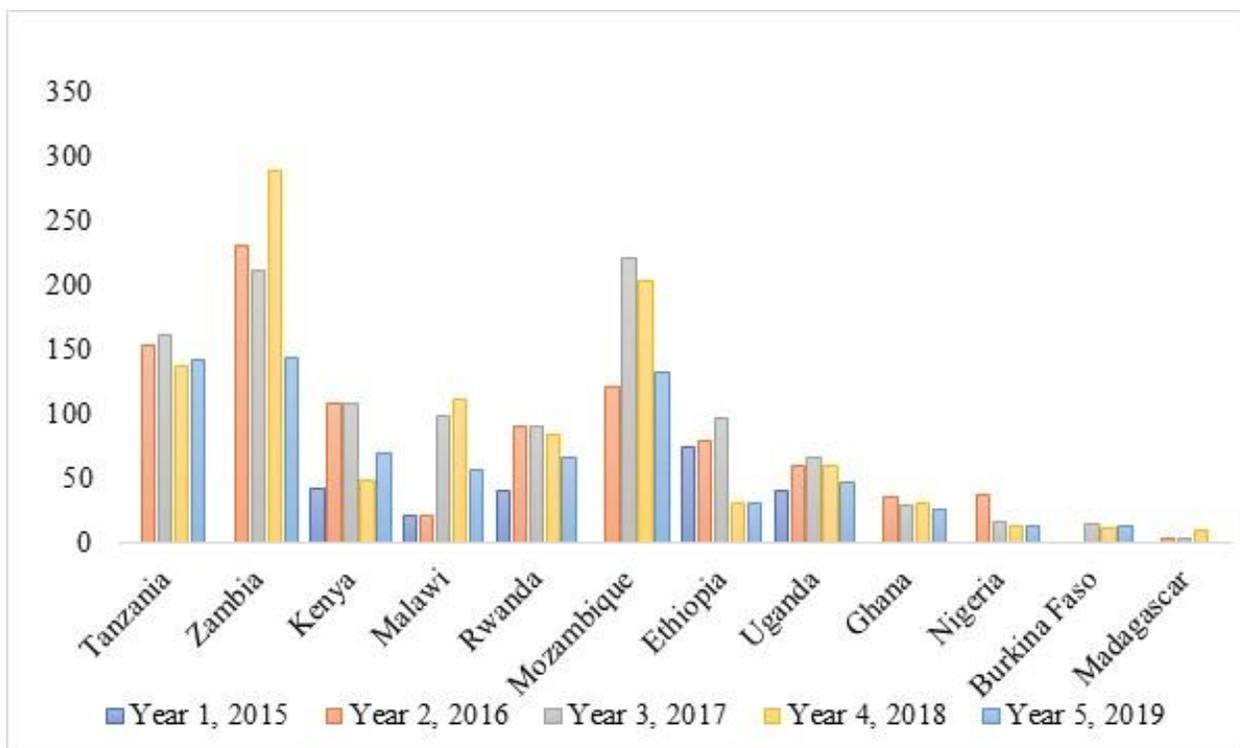


Figure 20: Trends in number of vine multipliers, by SPHI country: 2015-2019

The data for the current update period was obtained through contacting the DVMs principally through phone calls. This marked the second year of utilizing this more cost-effective method of updating vine multiplier database and information than making visits to homes. The multiplier update was done using open data kit (ODK) or CsPro on tablet-based form and involved collecting basic farmer/multiplier information needed for update of the status and to characterize/identify the multiplier. The annual contacts with multipliers are especially important in determining their status (whether they are still operational or not) and their capacity (in terms of quantity of vines they can produce). There is a detailed report available, which goes into more depth on the varieties distributed, etc.

A total of 1,030 vine multipliers in the 11 SPHI countries⁵ were on the list to be contacted for the update process using mobile phones. Among them, 72% (i.e., 741) were successfully reached on

⁵ Kenya, Uganda, Tanzania, Ethiopia, Rwanda, Malawi, Zambia, Mozambique, Burkina Faso, Nigeria and Ghana

phone and their status updated. 10 new vine multipliers were visited in Kenya and Ethiopia and added to the database. Compared to the last update period, there was a drop in the number of multipliers contacted for the update by 28%. Zambia and Tanzania recorded the highest number of multipliers successfully reached by phone. Among them, 76.2% were actively producing vines while 23.8% reported to have stopped vine production citing lack of market as the major contributor and drought as the second most constraint towards continued vine production.

Figure 21 shows the number of vine multipliers in each country disaggregated by gender. It shows that vine multiplication is still dominated by male multipliers. This is due to their greater ability to access key resources, especially land. In all the reported countries in Figure 21, more 70% of the registered multipliers were male. However, some countries like Rwanda continued to register significant increase in number of female multipliers. The increase in the female vine multipliers in these countries reflects the concerted efforts made at project level to recruit, train and support female multipliers. It is also a reflection of the demand for gender-disaggregated data, including number of vine multiplication sites established. Further, it is notable that the number of countries with established group multipliers has continued to increase (as shown in Figure 21). During this update period, Malawi overtook Ethiopia in terms of number of established group vine multipliers.

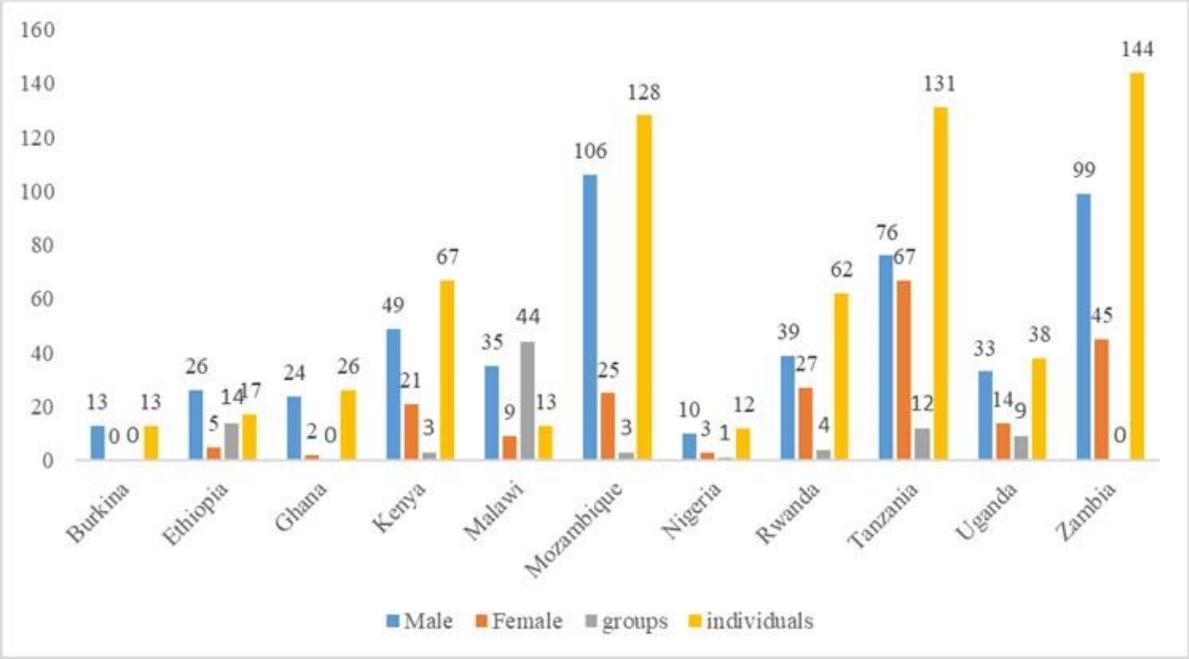


Figure 21: Number of vine multipliers in each of the SPHI countries disaggregated by gender for July 2018 – June 2019 update period

VII: The Way Forward

Being able to monitor progress towards the SPHI goal is important for maintaining momentum for the investment. Clearly, efforts are underway to mobilize resources for increased dissemination efforts. There has been considerable progress in getting biofortification into key agriculture, food security, and nutrition policies in many countries, which should enable greater prioritization of orange-fleshed sweetpotato in country agendas. Between 2011 and 2019, biofortification, sweetpotato, or nutrition foods appeared in seven regional policy documents, 23 national agricultural policy documents, and 18 national nutrition documents. Ideally, in 2019/2020, there would be a large-scale survey visiting intervention zones in the different countries to assess permanent adoption of the improved varieties and impact on diet diversity and crop income. CIP-led projects keep lists of households receiving vines that could facilitate follow-up and/or selection of intervention zones for assessing adoption and informal rates of dissemination. There is an on-going effort to start identifying potential partners and donors that can support the survey financially and/or in the design of the survey.

Producing this draft report has been a valuable exercise. It has demonstrated very impressive progress towards the goal of 10 million households owing to the increased number of scaling up and emergency re-seeding projects. At the same time a number of issues emerged. These include:

1) Standardization of what data concerning sweetpotato production, yields, and sales. SASHA Phase 1 produced standardized data collection instruments to capture sweetpotato production and sales on a recall basis. However, how those data were analyzed and reported often differed across CIP-led projects. Non-CIP led projects are likely to differ even more. Moreover, some projects supplement with crop cuts to determine yields; others not. During 2016, a module for conducting crop cuts for calculating varietal specific yields was developed as were modules for capturing production and sales. These modules were tested and revised during the 2017 annual MLE Community of Practice meeting. They are available in an ODK format. Their use should be promoted by all project leadership.

2) Dietary diversity. In reporting diet diversity data, we need to request projects to present these data in a less aggregated way, taking account of whether households were separated into control or intervention zones or participant and non-participant groups, and whether there was a specific nutrition education intervention component or not.

Finally, at the national level, it is important to continue our efforts to have better data collection on sweetpotato in national household sample surveys. This includes separate categories of data collection for orange-fleshed sweetpotato (OFSP) types versus non-OFSP types to capture the impact of this flagship product, and production and sales data at the minimum. At this moment, only Mozambique does this. Progress has been made for such incorporation in the 2016 survey in Malawi and discussing this with Uganda Bureau of Statistics. The SASHA M&E team will continue to approach national statistics offices in other SPHI countries to advocate for disaggregation of sweetpotato statistics.

Clearly, there is a need to continue monitoring progress in sweetpotato varietal dissemination and uptake. A committee is currently assessing continuing with the SPHI construct through 2023 so that the 10 million household goal is attained. It is an opportunity to reflect on how the SPHI

can be strengthened to ensure continued progress and to improve the functioning of the overall partnership.

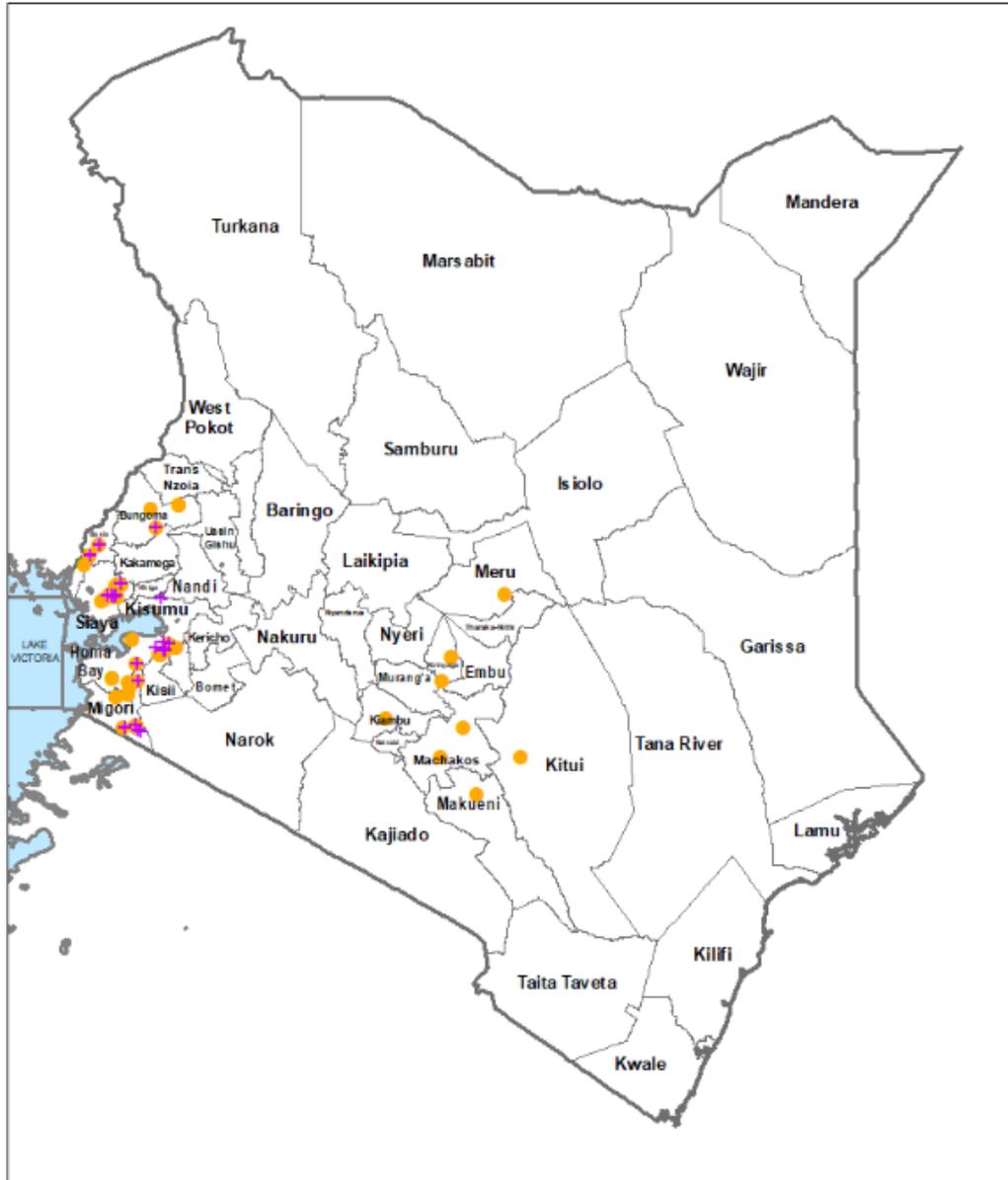
References

Fujita, M., Y., Lo and J.R. Baranski.(2012). Dietary diversity score is a useful indicator of vitamin A status of adult women in Northern Kenya. *American Journal of Human Biology*, 24:829-834

Kennedy, G., T. Ballard, & M.C. Dop (2011). Guidelines for measuring household and individual dietary diversity. Nutrition and Consumer Protection Division, Food and Agriculture Organization of the United Nations. ISBN 978-92-5-106749-9. Accessed on May 31st, 2014

Appendix A: Maps showing locations of trained vine multipliers present in 2018/2019

A. Kenya



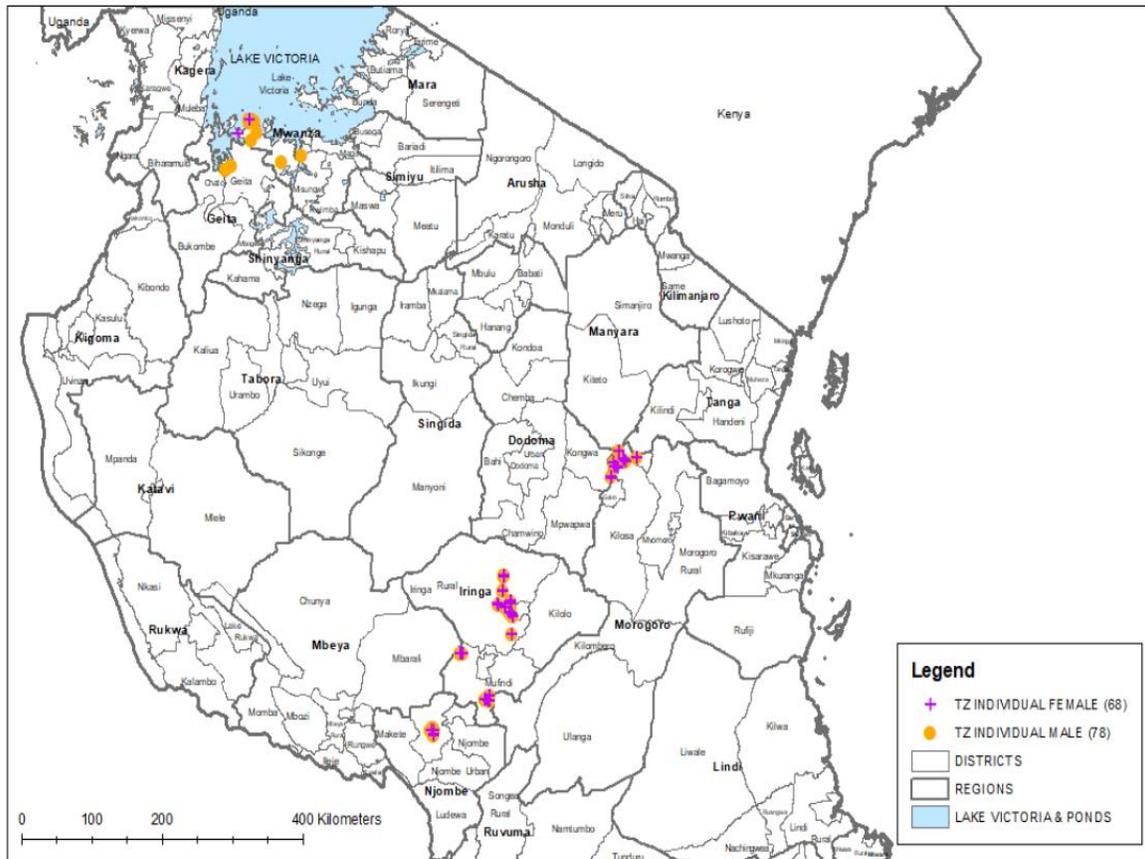
0 37.5 75 150 Kilometers

Date: 10/3/2019

Legend

- + FEMALE DVMs (21)
- MALE DVMs (58)
- COUNTY (47)

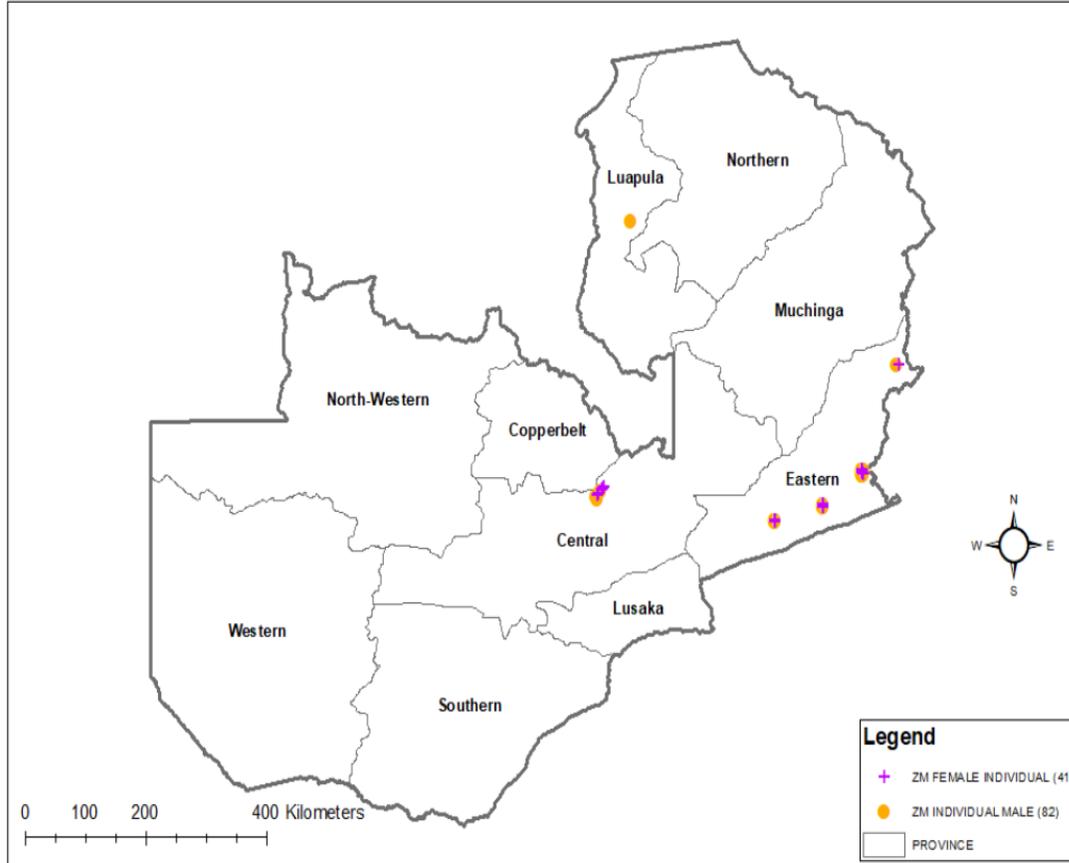
C. Tanzania



Source: Global Administrative Areas Database, 2015

Date: 10/3/2019

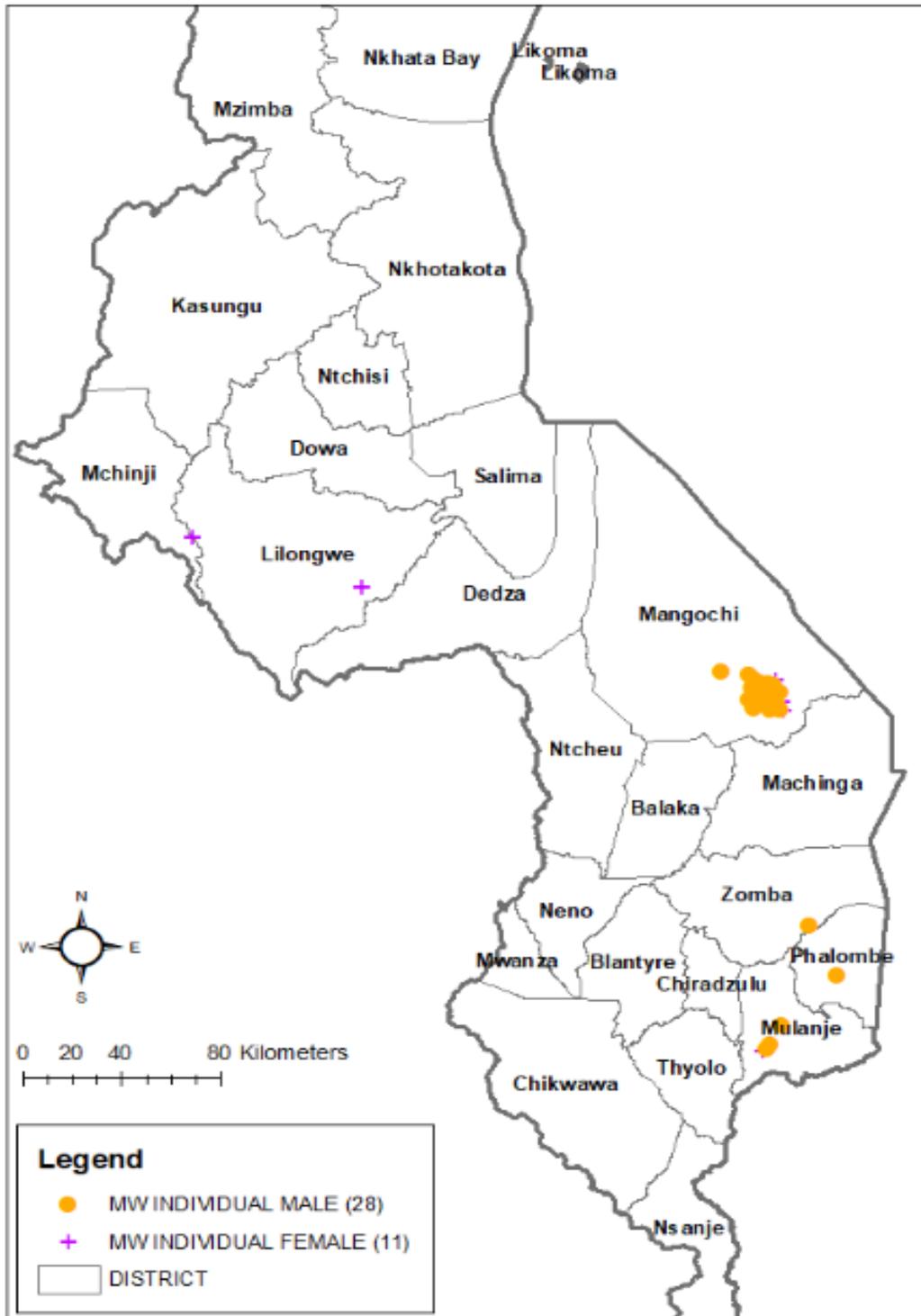
D. Zambia



Source: Global Administrative Areas Database (2015) and Digital Chart of the World

Date: 10/3/2019

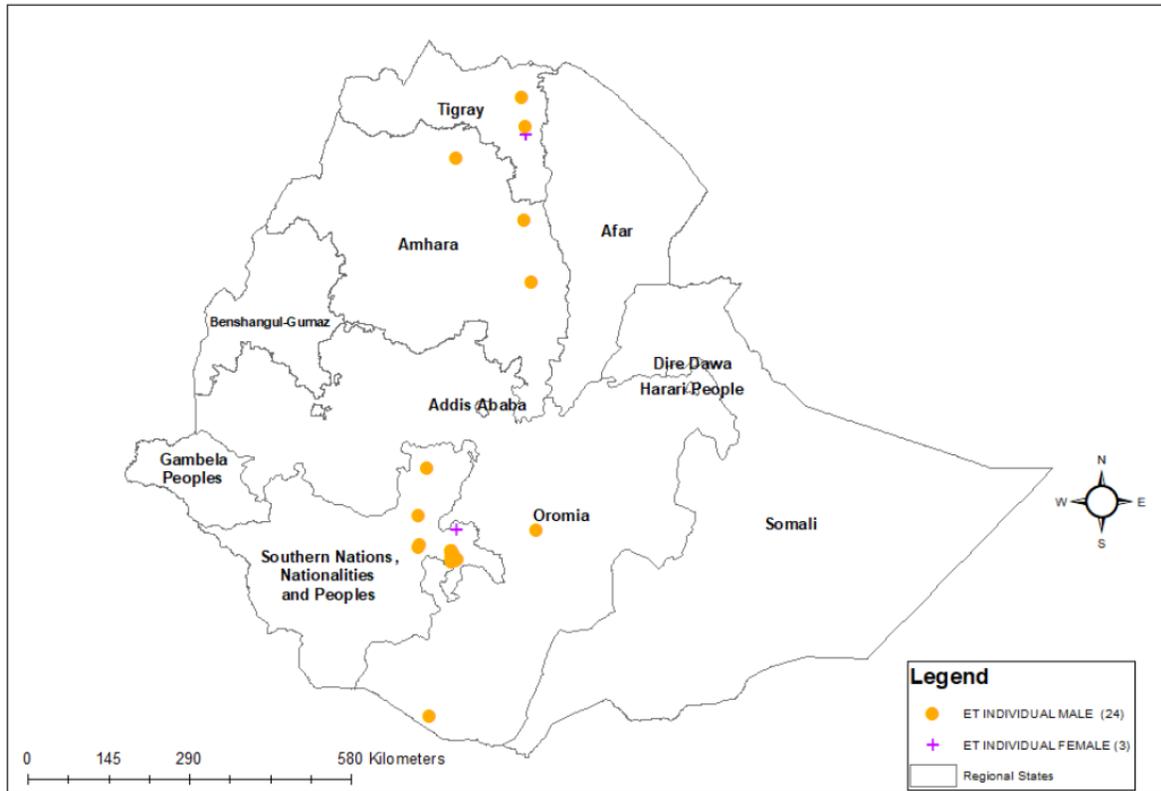
E. Malawi



Source: Global Administrative Areas Database (2015) and Digital Chart of the World

Date: 10/3/2019

F. Ethiopia

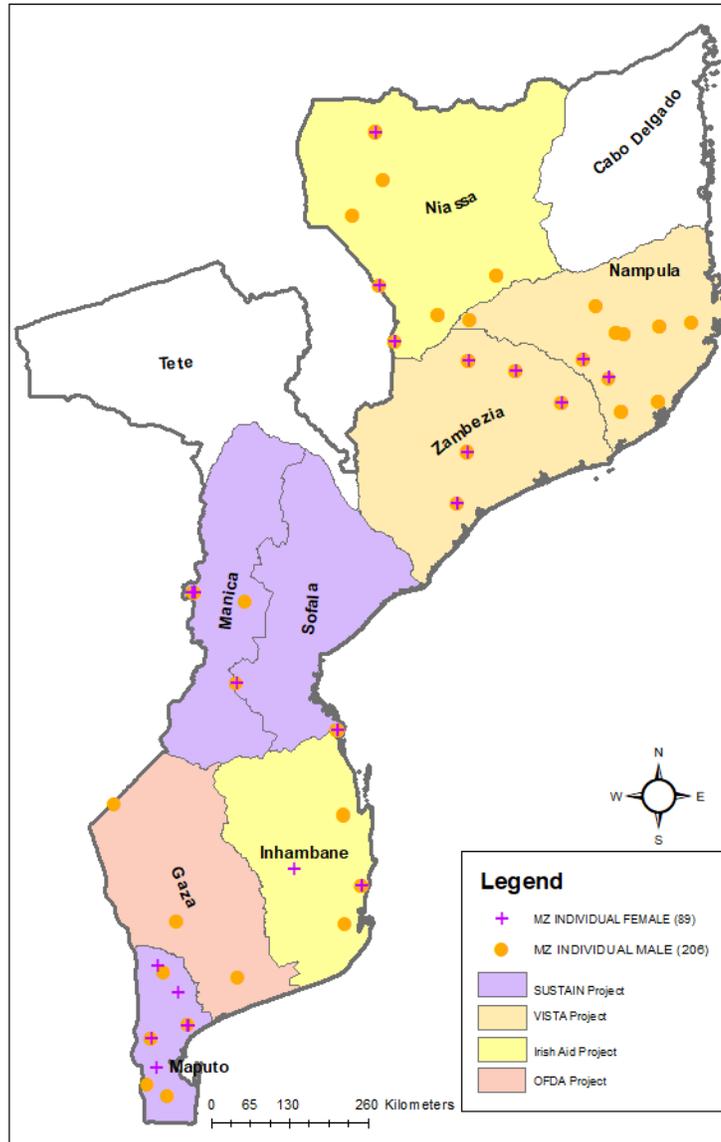


Source: Global Administrative Areas Database (2015) and Digital Chart of the World

Date: 10/24/2019

G. Mozambique

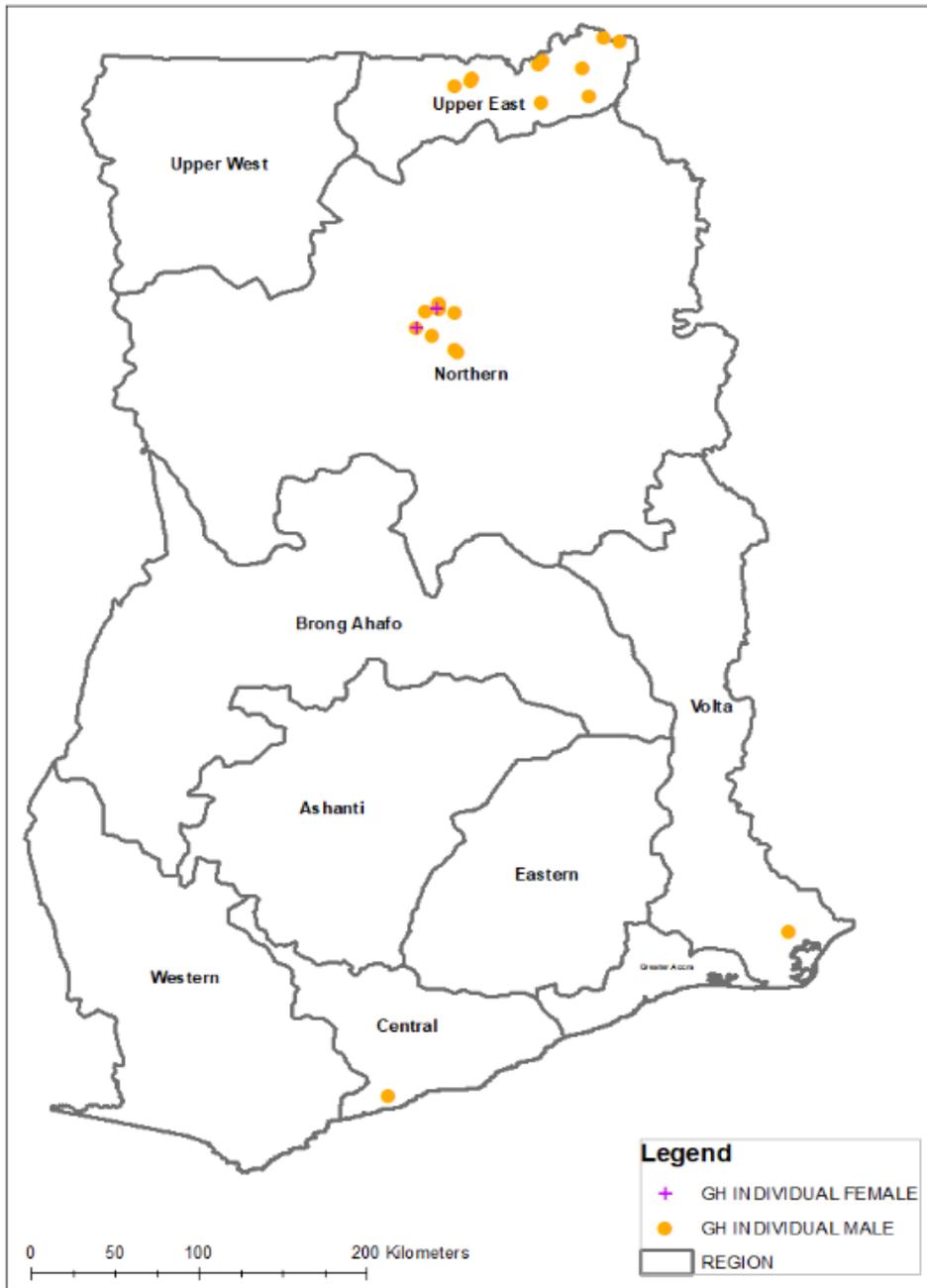
MOZAMBIQUE INDIVIDUAL VINE MULTIPLIERS - 2019



Source: Global Administrative Areas Database (2015) and Digital Chart of the World

Date: 11/15/2019

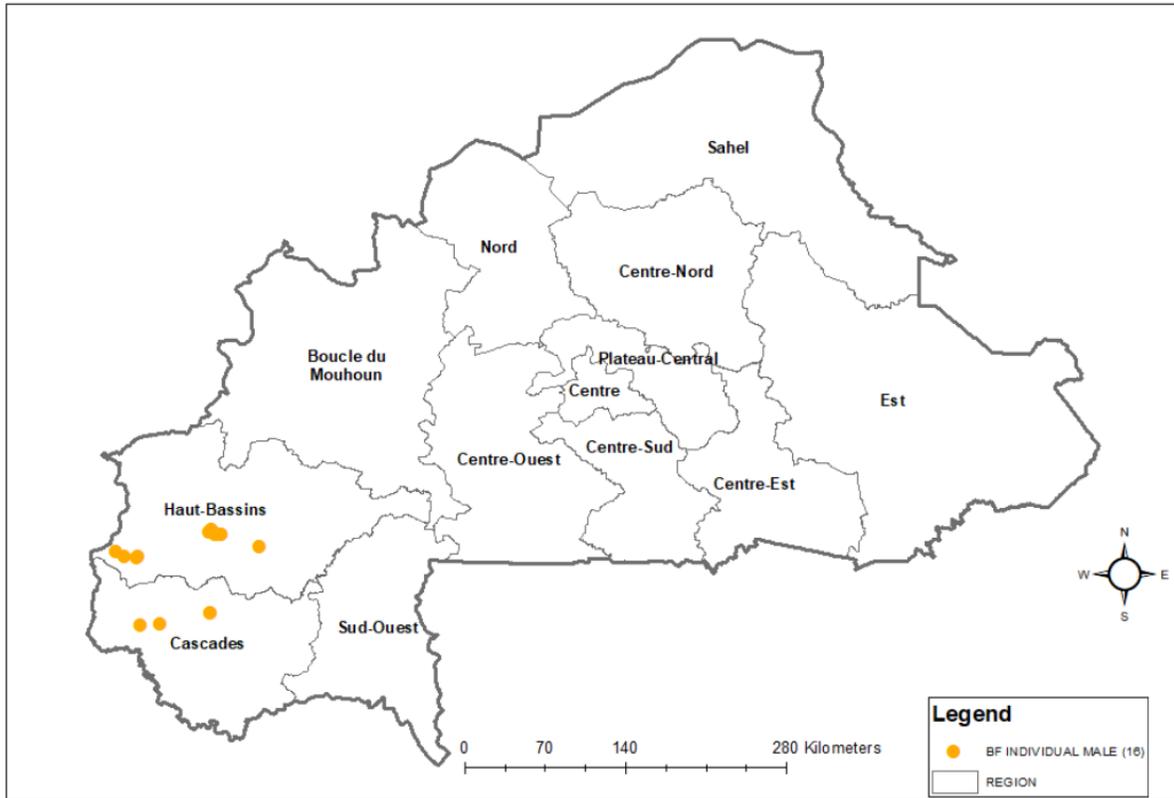
H. Ghana



Source: Global Administrative Areas Database, 2015

Date: 10/24/2019

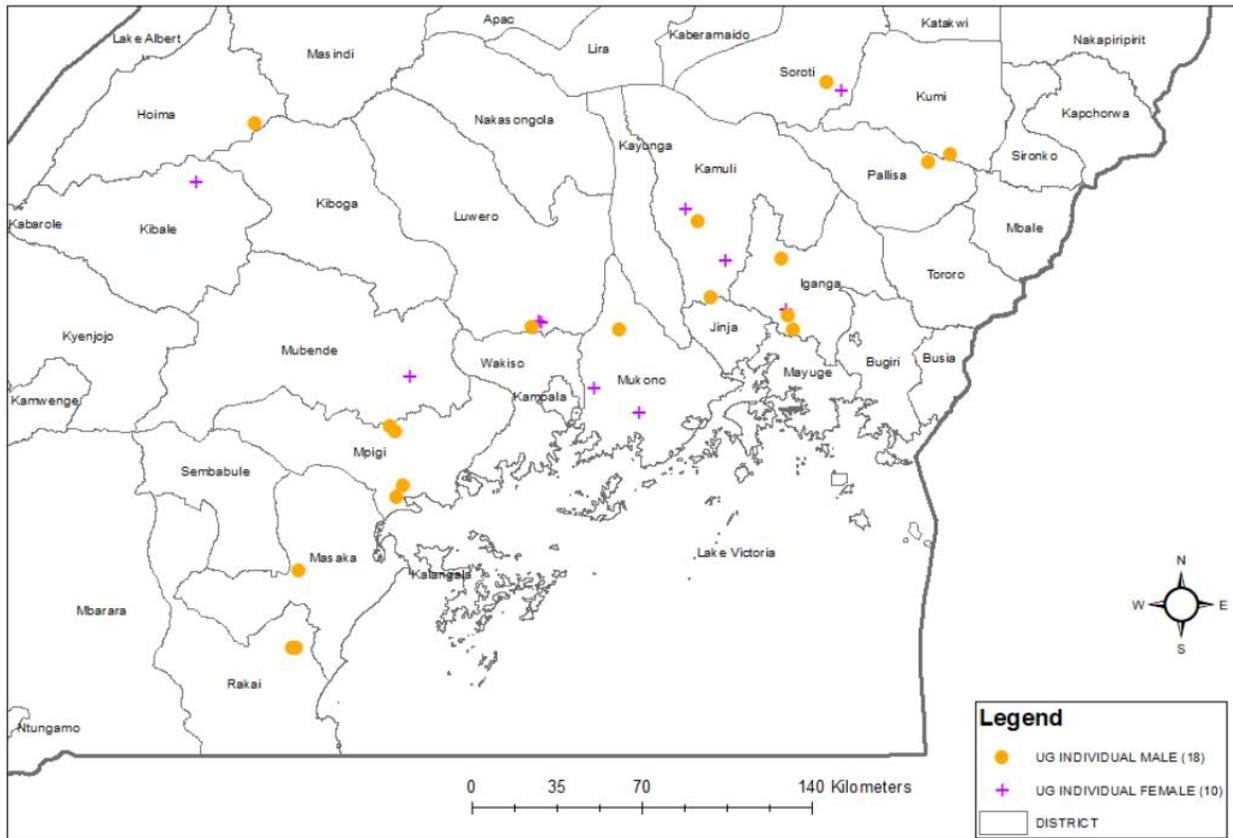
I. Burkina Faso



Source: Global Administrative Areas Database (2015) and Digital Chart of the World

Date: 10/24/2019

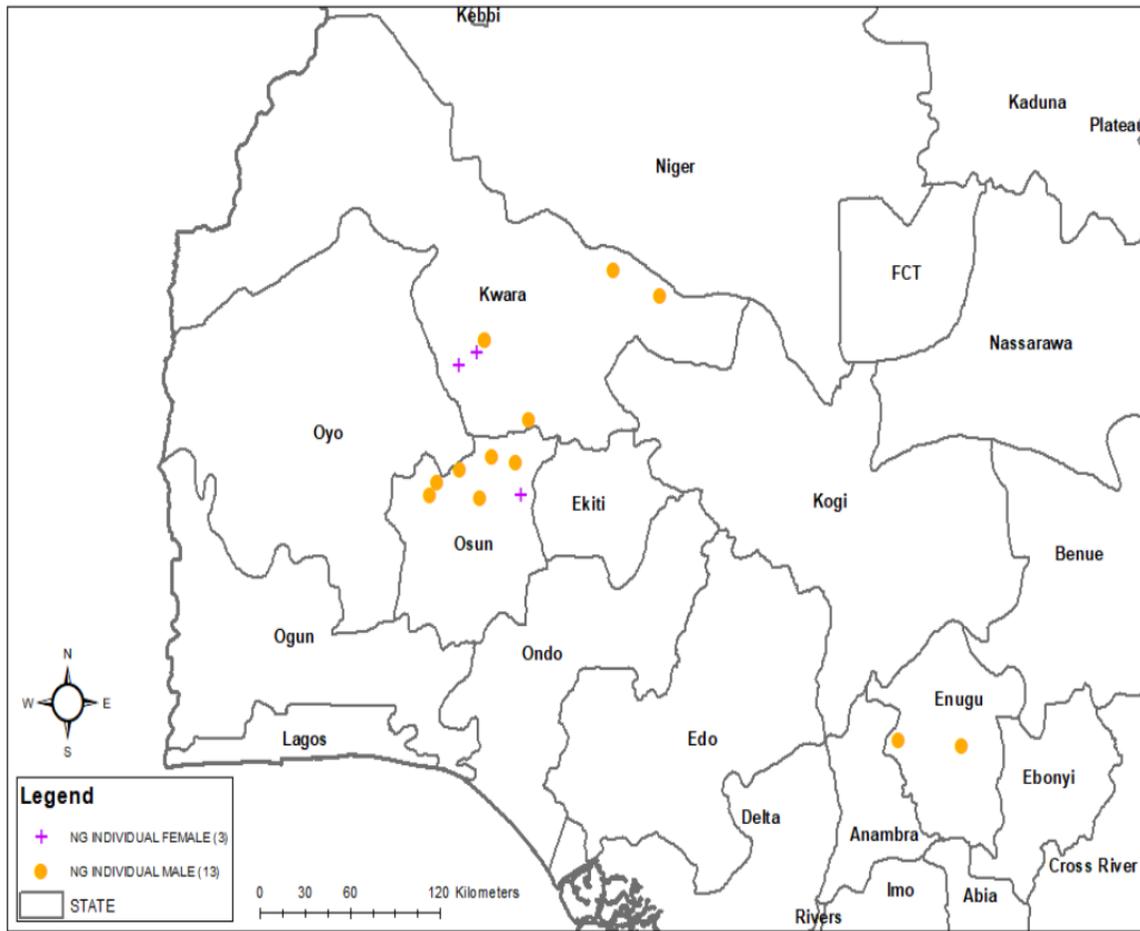
J. Uganda



Vine Multipliers established by HarvestPlus with support from USAID

Source: Global Administrative Areas Database, 2015

Nigeria



Source: Global Administrative Areas Database (2015) and Digital Chart of the World

Date: 10/24/2019