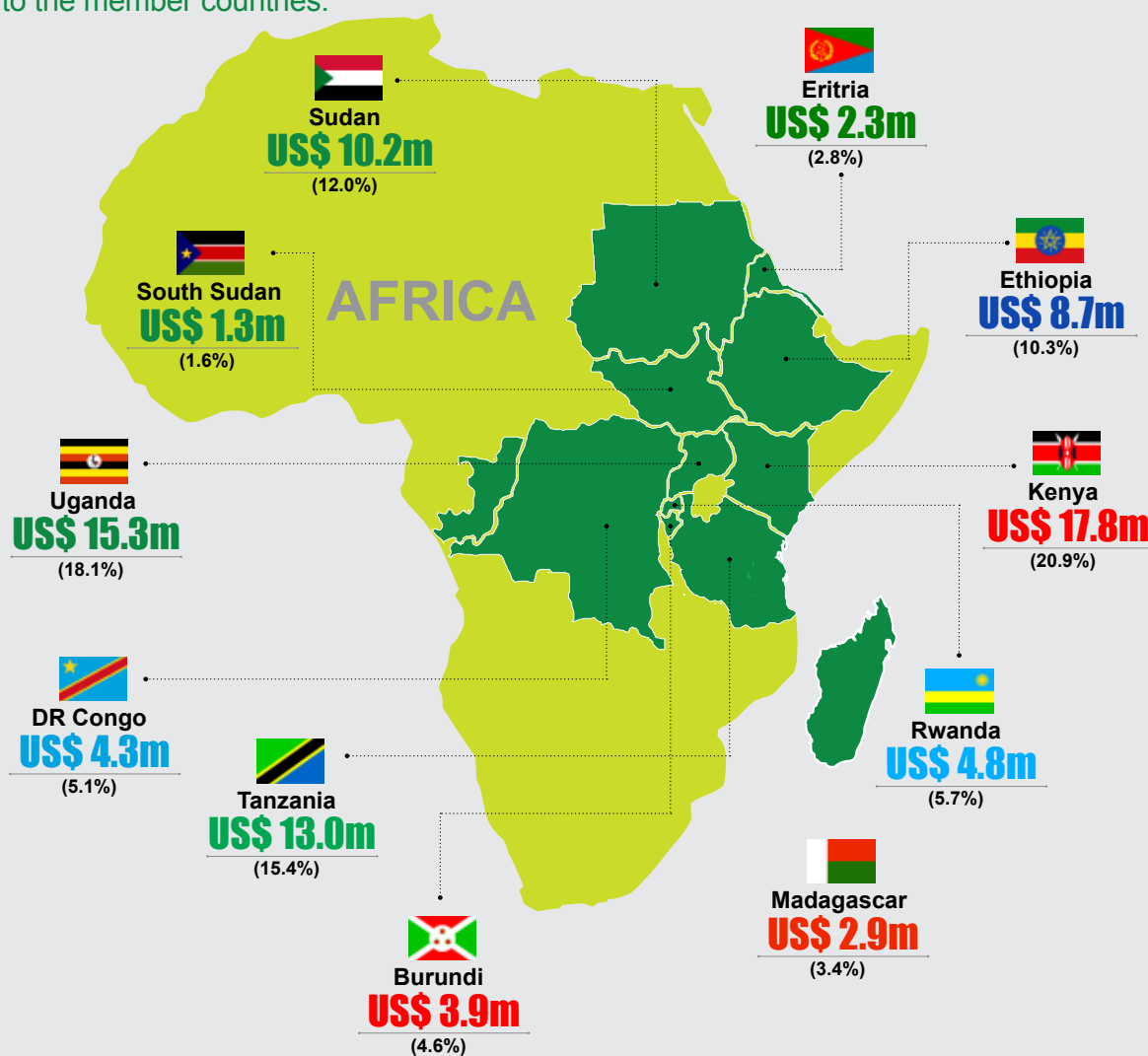


Contribution to Member Countries

Since inception in 1994, ASARECA has worked with National Agricultural Research Systems (NARS) of its twelve member countries: Burundi, Democratic Republic of Congo, Eritrea, Ethiopia, Kenya, Madagascar, Republic of the Congo, Rwanda, South Sudan, Sudan, Tanzania and Uganda. Between 1994 and 2018, ASARECA mobilized **US\$ 131 million** to implement Agricultural Research for Development (AR4D) initiatives in the countries. In addition, ASARECA coordinated the EAAPP programme in five member countries. Below are snapshots of ASARECA contribution to the member countries.



Kenya

Since inception, ASARECA has worked mainly with the Ministry of Agriculture, Kenya Agriculture and Livestock Research Organisation (KALRO), formerly Kenya Agricultural Research Institute (KARI), and universities (Kenyatta, Egerton, and Nairobi). Over the last 25 years, ASARECA has invested US\$ 17.8 million to catalyze agricultural transformation in Kenya through key beneficiary projects highlighted below:

Mitigating effects of climate change: Working with researchers from KALRO, ASARECA implemented projects to increase availability and productivity of water in rain-fed and irrigated farms. The projects built capacity to harness water resources from the rain, runoff, surface, and ground water at farm and watershed levels. In Machakos and Makueni, over 1,500 households adopted water-efficient technologies, leading to the rehabilitation of over 5,000 hectares of severely degraded land as well as increased maize yields from 0.5t/ha to 3 t/ha. Over 1,000 households previously dependent on relief food are now food secure. To ensure sustainability, Machakos and Makueni County governments mainstreamed agricultural extension and advisory services, and allocated US\$ 40,000 to out-scale available technologies, respectively.

Out-scaling OFSP (the darling potato): ASARECA supported KALRO to out-scale Orange-fleshed Sweet Potato (OFSP) as a cheaper source of vitamin A for children and breast-feeding mothers (as alternatives to fish, liver, milk and eggs). Three varieties (*Ejumula*, *Kabode* and *Vita*) were promoted on 27 hectares dedicated to

multiplication of planting materials. Over 474,000 vines were produced and distributed to farmers in Western Kenya, with over 30 orphanages using OFSP as a nutritional diet. In Busia and Bungoma Counties, farmers earned US\$ 20,000 and 17,000 respectively from sales of vines.

Controlling the spread of Banana Xanthomonas Wilt (BXW):

ASARECA supported KALRO to promote proven and cost-effective measures to control the deadly BXW epidemic that threatened to wipe out the banana crop in Rwanda, Burundi, Tanzania, DRC, Uganda and Kenya between 2005 to 2010. Six hardening nurseries, 10 demonstration plots and 10 macro-propagation units were installed at the BXW hotspots. Within six months of adoption, BXW prevalence reduced from over 90% to less than 5%, while the proportion of farmers who controlled the disease increased from less than 5% to over 60%. After 15 months, banana production recovered from zero percent in some places to over 80%.



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Genetic modification of maize for drought tolerance:

ASARECA in collaboration with Kenyatta University supported a team of young scientists from Sudan, Ethiopia, Tanzania and Kenya to undertake PhD research that focused on inserting drought tolerance genes into local maize varieties (sourced from Ethiopia (2), Kenya (3), Sudan (2), and Tanzania (2)). The scientists successfully transformed nine transgenic maize lines with drought resistant genes that were bulked awaiting confined field trials in participating countries.

Fighting Cassava Brown Streak Disease (CBSD):

ASARECA supported scientists from Uganda, Kenya, DRC, Madagascar, Rwanda and Burundi to fight CBSD that had wrecked havoc in the region, with losses estimated at above US\$ 100 million. This led to the development of Information Resource Kit used in awareness creation campaigns, and in training of farmers and extension workers on detecting affected materials. Breeders in Kenya developed CBSD tolerant varieties that have been availed to farmers.

Introducing mixed crop livestock innovations: ASARECA supported KALRO to improve efficiency and quality of production for crops and livestock in semi-arid lands of Wote, Machakos and Wamunyu. Increased fodder availability by 50%, and crude protein content by 20% was recorded through inter-cropping Napier grass with forage legume (*Centrosema pubescens*). Similarly, feeding livestock with new fodder mixture increased feeding efficiency by 30% and milk yield by 65%. Vegetable yields and household income grew by 500% and 66% respectively. Overall, 8,000 farmers benefited from the project.

Establishing cassava and potato standards for EAC states: Aware of the dual roles of cassava and potato as food security crops, and as commodities with high industrial potential, ASARECA in partnership with Na-

tional Bureaus of Standards of East African Community (EAC) states jointly formulated the East African standards for cassava, seed potato, potato and related products. Eleven (11) rationalized and harmonized standards for cassava and sweet potato were approved by EAC, hence opening up space for structured trade and industrialization of the commodities. Motivated, KIWAFA and Uwezo Mashambani farmer groups initiated procedures towards acquiring the Kenya Bureau of Standards quality mark and bar code for potato crisp export.

Eastern Africa Agricultural Productivity Project (EAAPP):

ASARECA coordinated this regional initiative of the Governments of Ethiopia, Kenya, Tanzania and Uganda. Kenya provided leadership as the Centre of Excellence for Dairy. Through ASARECA's collaboration, Kenya sold over 3 million doses of livestock semen, and received the following technologies from collaborating countries: Descriptions of livestock cross-breeding practices from Uganda; four rice varieties (TXD306, Tai, Komboka and Ziada) from Tanzania (and officially released Komboka and TXD306); improved cassava varieties including elite materials tolerant to CBSD from Tanzania; quality management protocols for multiplying clean cassava materials from Uganda; virus diagnostic procedures from Uganda; 951 lines of bread-wheat from Ethiopia (72 elite lines are in advanced trials for release).

Promoting Napier grass as key livestock feed: Through the Napier grass smut and stunt disease resistance project, ASARECA coordinated researchers from Uganda, Kenya and Tanzania to help farmers adopt superior resistant clones alongside management practices to mitigate the spread of the diseases. Tolerant clones, management practices and molecular diagnostic tools were developed, validated and disseminated for regular testing. This led to reduction to disease incidence and milk production in the countries