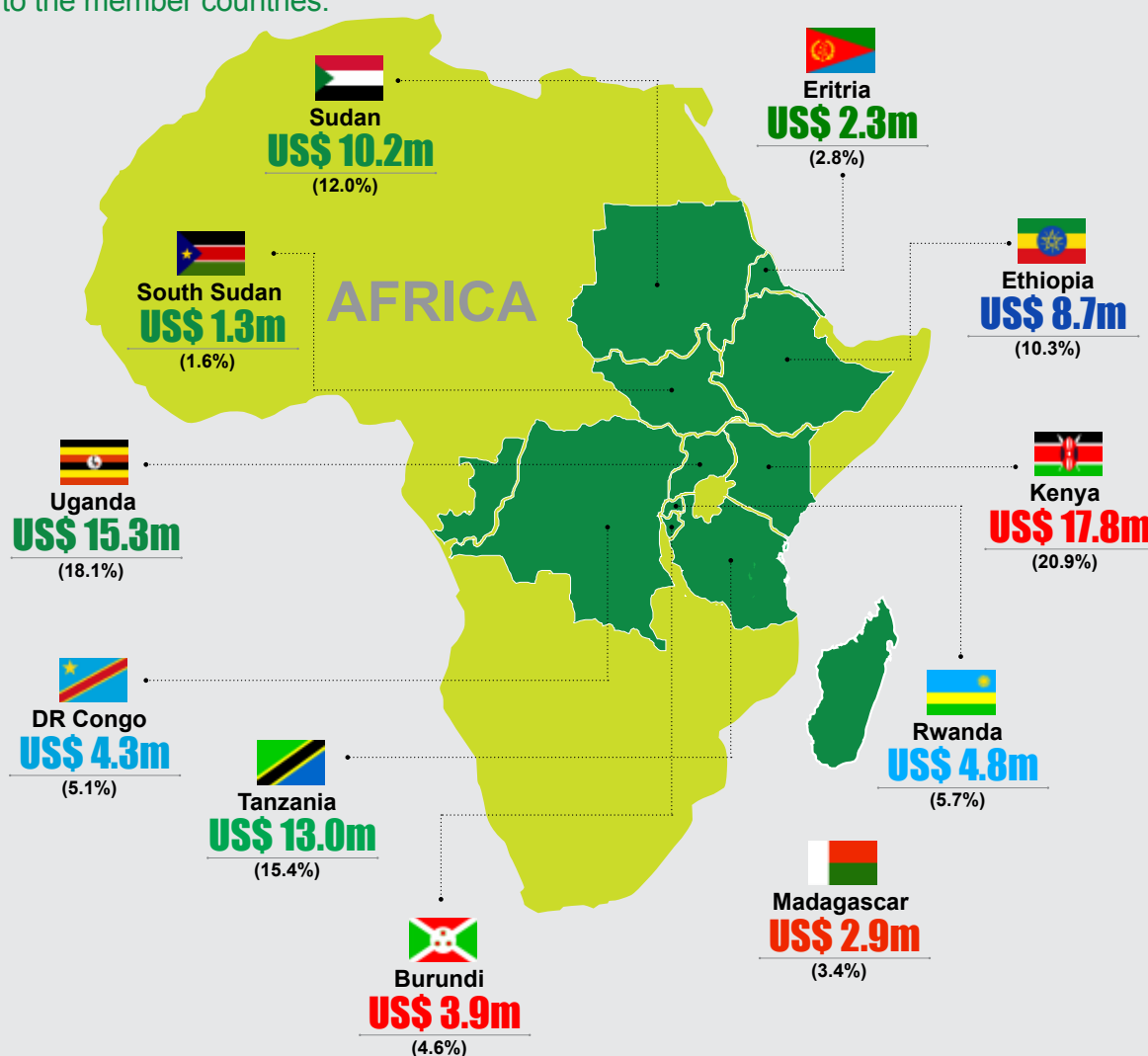


# Contribution to Member Countries

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.



## Sudan

Sudan is a founding member and one of the 12 constituents of ASARECA. Since inception, ASARECA has worked mainly with Agricultural Research Corporation (ARC) and the Ministry of Science and Technology to jointly address AR4D challenges in the country. Between 1994 and 2018, ASARECA invested US\$ 10.2 million to catalyze agricultural transformation in Sudan through key beneficiary projects highlighted below:

### **Building capacity of scientists to deliver AR4D:**

ASARECA in 2008 sponsored 34 young, mid-level scientists from Rwanda, Burundi and Sudan to undertake leadership and mentorship training, and master's degree studies in various disciplines through the Strengthening Capacity for Agricultural Research and Development in Eastern and Central Africa (SCARDA) project.

Two (2) scientists from ARC were supported through this project and received Master's degrees in Plant Breeding and Seed Systems from Makerere University.

The students carried out research in areas that were deemed relevant for their country.

Such areas included development of molecular markers for introgression of resistance to turicum leaf blight in sorghum and mapping of genes associated with striga resistance in sorghum.


Both students were mentored and had an opportunity to use advanced laboratory facilities for their research.

**Controlling tick-borne diseases:** In 2009, ASARECA implemented a project to support tick-borne disease experts from Uganda, Kenya, Tanzania, Burundi, Madagascar, Sudan and Madagascar to develop, validate and promote appropriate technologies for the control of tick-borne diseases in pastoral and agro-pastoral farming systems. Experts from Sudan, conducted

epidemiological studies; identified management options for different livestock production systems; and documented best-bet practices for ticks and tick-borne disease control.

Thirty male and five female veterinarians and technicians were trained in tick ecology, survey, collection, preservation, identification, diagnosis, prevention, control, and proper use of acaricides. Over 150 farmers benefited from training in tick-borne disease diagnosis and the use of acaricides. As a result, farmers in the

intervention areas registered unprecedented reduction of tick-borne infestation, leading to increased dairy and meat production.



**In 2012, Sudan released four out of the 51 lines of striga-resistant sorghum varieties (ASARS1, ASARS2, ASARS3, and ASARS4), with yield potential of up to 3.6t/ha. These new varieties with barriers to striga, have been widely disseminated to farmers in Sudan and are performing well.**

**Promoting pearl millet:** ASARECA supported scientists from Eritrea, Sudan, Kenya and Tanzania to develop a profitable cropping system and value-chain for pearl millet in order to enhance its production in the arid and semiarid lands of the sub-region. ASARECA invested in boosting the capacity of Sudan to enhance its genetic resources as well as addressing post harvest handling, utilization, input delivery and marketing constraints. As a result, pearl millet production was boosted through use of improved varieties, best bet agronomic practices including water and soil conservation. Following successful implementation of the project, researchers in the sub region endorsed pearl millet as the crop that is most suitable for the semi arid areas in June 2010.

**Mitigating effects of climate change:** Working with researchers from Sudan, ASARECA implemented projects to increase the 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. The project was able to improve the productive performance of sheep significantly in one of the project sites in the Western Sudan Sandy Plains, through strategic feeding, thereby improving livelihoods of the target families. Up to 300 farmers in the target sites adopted the agricultural water productivity innovations.

### **Fighting Striga (witch weed) for improved food security**

Sorghum is the second most important staple crop in Eastern and Central Africa. Prior to ASARECA's intervention in 2008, which focused research efforts to controlling the spread of Striga, over 17,000 ha of sorghum had been infested by the weed, leading to yield losses of up to 2.3 million metric tons annually. ASARECA supported and coordinated scientists from Agricultural Research Corporation of Sudan (ARC), University of Nairobi, the National Agricultural Research Institute of Eritrea, the Rwanda Agricultural Board, and the Inter-

national Centre for Agricultural Research in Arid and Semi Arid Tropics (ICRISAT) to develop striga-resistant sorghum lines. Led by ARC, the researchers used biotechnology, reputed for its precision and effectiveness in breeding. The process involved backcrossing a donor striga-resistant sorghum line N13 and three farmer-preferred sorghum cultivars—Tabat, Wad Ahmed and AG-8, that were susceptible to striga.

As a result, the government of Sudan in 2012 released four out of the 51 lines of striga-resistant sorghum varieties (ASARS1, ASARS2, ASARS3, and ASARS4, with yield potential of up to 3.6 tonnes per hectare). These new varieties with barriers to striga, have been widely disseminated to farmers in Sudan and are performing well. Besides, ASARECA facilitated movement of the striga resistant varieties to Uganda, Kenya, Tanzania and Rwanda where adaptability trials were carried out. The adoption of the varieties in Sudan and the entire ASARECA region is a major milestone towards restoring the productivity of sorghum and getting 300 million people in Eastern and Central Africa (ECA) out of hunger.

