



EASTERN & SOUTHERN AFRICA

HIGHLIGHTS

Encouraging young agripreneurs

WorldVeg trains unemployed **youth** in Tanzania, Ethiopia, Malawi and Mozambique to follow a value chain approach to vegetable production. These young agripreneurs apply new skills such as identifying customer needs to become preferred suppliers and nurturing relationships with key value chain players. The youth form production groups and work together to obtain inputs and credit, raise healthy seedlings, grow vegetables safely, reduce postharvest waste, and market their crops. By growing what the market wants, these young farmers are finding new careers and opportunities to generate income and improve the livelihoods of their families.

Disease resistant, nutritious tomatoes

Tomatoes are an important vegetable crop in Africa, providing a good source of income for smallholder farmers and an important source of vitamin A. They are particularly suited to the highlands of Eastern and Southern Africa. New lines developed by WorldVeg have increased national production by 40%, leading to major improvements in the lives of farmers and national self-sufficiency.

Numerous pests and diseases affect tomato, particularly in the humid lowlands. Tomato lines are being screened and tested for resistance to the tomato leafminer (*Tuta absoluta*)—a pest that can cause 100% loss of a crop—thrips, whitefly and fruitworm, bacterial wilt, Phytophthora leaf blight, tospoviruses and geminiviruses. Well-adapted lines of tomato with high levels of beta-carotene and lycopene are being selected to improve the **nutritional quality** of African tomatoes to help overcome widespread vitamin A deficiency.

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Traditional African vegetables

Consumption of **traditional vegetables** such as amaranth, African eggplant and African nightshade is increasing among people of all income levels across Africa. With quality breeding and production practices, farmers can grow these traditional crops on a larger scale, generating income and diversifying their cropping systems. Resilient traditional vegetables with strong market demand are less likely to be replaced by global vegetable varieties, thus maintaining local crop diversity.

The World Vegetable Center has been involved in the collection, characterization, breeding and analysis of traditional vegetables worldwide for more than 20 years. Our Tanzania **genebank** holds Africa's largest collection of traditional vegetable seed—an essential resource for crop improvement in changing climates.

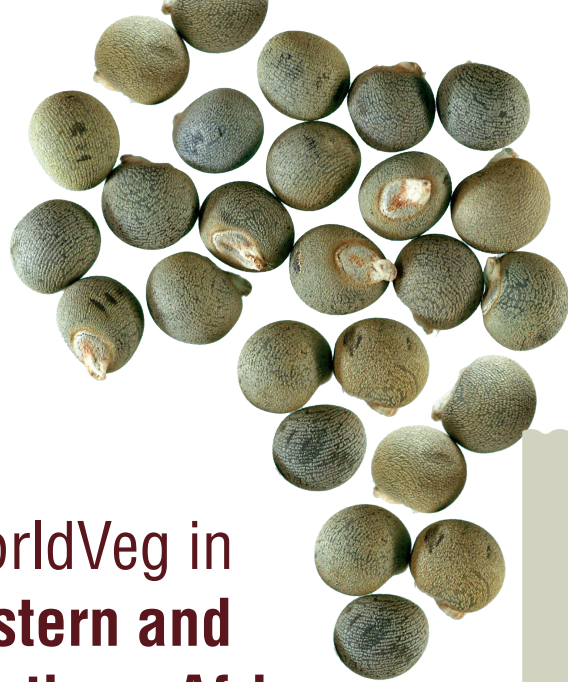
Strengthening the vegetable seed sector

Smallholder farmers need access to quality supplies of traditional and global **vegetable seed** at affordable prices. WorldVeg provides training in seed production to small African seed companies, ensuring they have the expertise to provide a sustainable supply of quality seed to area farmers.

The **Africa Vegetable Breeding Consortium** engages seed companies of all sizes to improve seed production and distribution.

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WorldVeg in Eastern and Southern Africa

The 22 countries in Eastern and Southern Africa include several of the world's fastest growing economies, yet the vegetable sector remains underdeveloped and vegetable consumption is extremely low. With its diverse agroclimates and ready labor supply, the region offers enormous potential for farmers to produce high value vegetables for domestic and international markets—and to provide the vital nutrients lacking in local diets.

The **World Vegetable Center** develops improved vegetable varieties, seed and crop production systems, and postharvest technologies to profitably engage farmers in vegetable value chains. These products and activities contribute to a steady supply of nutritious and affordable vegetables. WorldVeg training builds capacity among staff of national agricultural research and extension systems (NARES), nongovernmental organizations, the private seed sector, farmers and communities.

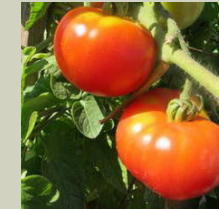


BY THE NUMBERS

► WorldVeg annually distributes **seed kits** to thousands of smallholder farmers in Tanzania, Kenya, and Uganda.

► WorldVeg establishes **vegetable business hubs** and trains **youth** production groups to obtain inputs and credit, raise healthy seedlings, grow vegetables safely, reduce postharvest waste, and successfully market their crops. Groups producing snow peas, tomato seeds, and French beans in Tanzania are realizing a net profit of USD 3,592-17,225 per season.

► WorldVeg research and development generated economic gains of US\$ 255 million for **tomato** and US\$ 5 million for **African eggplant** in Tanzania.



► 836 farmers (47% women and 31% youth) were trained in **good agricultural and manufacturing practices** (GAP, GMP) in Zanzibar and Arumeru District, Tanzania (2018).

► 50% of tomato and 98% of **African eggplant seed** produced commercially in Eastern and Southern Africa is based on varieties developed by the World Vegetable Center.

► Improved **amaranth** varieties developed by the World Vegetable Center reached an estimated 231,000 smallholder farm households in Kenya and Tanzania (2017). Partners Tanzania Agricultural Research Institute (TARI), Mikocheni Agricultural Research Institute (MARI) and Simlaw Seed evaluate WorldVeg amaranth and **African nightshade** for release in the two countries.



Research

Pest and disease resistance, heat and drought tolerance, leaf production, fruit shape, color, taste and nutritional content are among the characteristics breeders seek to enhance in vegetables.

WorldVeg researchers **select and breed** amaranth, African eggplant, spider plant and other important traditional vegetable crops in the region, and work with NARES and local seed companies to promote advanced lines for release and commercialization. End users—farmers, traders, and consumers—participate in the selection of these cultivars; their valuable input ensures WorldVeg research has impact in the field and the market.

Local processing industries and international export markets need reliable supplies of quality global vegetables such as tomato and pepper. WorldVeg breeders focus on developing hardy, productive lines that can become the foundation for a thriving vegetable value chain. In Tanzania alone, 50% of tomato commercial seed production used WorldVeg varieties, generating economic gains of US\$ 254 million.

Technology dissemination

WorldVeg develops and disseminates **technology packages** to maximize vegetable production and use. In collaboration with NARES, NGOs and the private sector, WorldVeg promotes vegetable research and development and seeks out solutions to the problems of vegetable production and use in sub-Saharan Africa.

Training

WorldVeg conducts **training courses** on vegetable production to enhance the capacity of researchers and extension specialists working with NARES, NGOs, progressive farmers and the private sector in sub-Saharan Africa to carry out vegetable research and development programs. The courses cover need-based topics mutually identified by African NARES and sponsors. Opportunities are available for research internships, postgraduate thesis research, and postdoctoral placements in agronomy, production, breeding, crop protection, and other fields.

WorldVeg Genebank: Africa's treasure

The **WorldVeg Genebank** in Arusha, Tanzania currently has 2,500 accessions of robust, nutrient-dense traditional African vegetables, such as amaranth, jute mallow, African eggplant, African nightshade, spider plant, and many more. Seed is distributed across the region through seed kits and by seed companies and other partners.