

Global vision for local impact

With its headquarters in Taiwan and regional or project offices in Cameroon, India, Indonesia, Korea, Laos, Madagascar, Mali, Niger, the Solomon Islands, Tanzania, Thailand, and Uzbekistan, AVRDC – The World Vegetable Center has a truly global presence. From these hubs, the Center extends into many other countries, ensuring a worldwide reach for its research and development.

Opportunities and constraints are identified with local partners, and are then assessed for regional or global importance. For instance, insect pests and plant pathogens are not constrained by national boundaries, and many vegetable production problems such as access to water are common across countries and regions. The Center's simple, low-cost pest management and microirrigation technologies are affordable to many smallholder farmers in Asia and Africa. Successes from one region are adapted and transferred to other regions.

A leader in climate change research

Farmers in developing countries of the tropics need tools to mitigate the adverse effects of climate change on vegetable quality and yield. AVRDC – The World Vegetable Center has expanded its research into this important area, focusing on technologies that are simple, affordable, and accessible to poor farmers, such as the use of shelters and raised beds to help conserve soil moisture, prevent soil degradation, and protect vegetables from heavy rains, high temperatures, and flooding.

Breeders use improved selection techniques to identify climate-resilient genotypes and associated traits—especially from wild, related species growing in environments that do not support the growth of their domesticated relatives. Center researchers combine biotechnology and molecular breeding strategies with a strong conventional breeding program to develop improved, climate-resilient vegetables.

Close relationship with the private sector

AVRDC – The World Vegetable Center builds strong partnerships with the private sector to ensure our research and development technologies have the greatest impact possible. These partners can be large multinational entities or small, local entrepreneurs. Although public and private sector goals may differ, the Center strives to reach a mutual understanding of the needs of each; these positive relationships have been a catalyst for development-oriented agricultural research.



AVRDC – The World Vegetable Center actively supports the private seed sector by providing improved inbred lines to accelerate cultivar development, sharing disease-screening protocols, and offering training courses in genetic improvement and seed production. Small and medium enterprises in Vietnam adapted AVRDC technology to process chili sauce; in India, small businesses manufacture pheromone pest traps based on an AVRDC design. The entrepreneurial effort creates jobs and increases incomes in local communities.

Through private sector partnerships, AVRDC has a better understanding of the use and management of intellectual assets and intellectual property rights, and how to protect those rights to ensure the Center's target clients are able to access the technologies they need now and in the future.

Independent, flexible, and responsive

The 15 international agricultural research centers governed by the Consultative Group on International Agricultural Research (CGIAR) aim to achieve sustainable food security and reduce poverty in developing countries through scientific research in agriculture, forestry, fisheries, policy, and environment. While not a member of the CGIAR, the Center works closely with the CGIAR institutions.

As a wholly independent entity, AVRDC – The World Vegetable Center can thus react very quickly to external and internal needs. The ability to be flexible and responsive is one of the Center's greatest assets, allowing it to address emerging issues quickly and efficiently.

Contact and further information

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AVRDC – The World Vegetable Center:

A Unique Research and Development Institution



AVRDC – The World Vegetable Center

a research and development institution unique in outlook and action

For more than four decades, AVRDC – The World Vegetable Center has sought to alleviate poverty and malnutrition in developing countries through vegetable research and development. Founded in 1971 as the Asian Vegetable Research and Development Center, our work today now spans the globe. We build partnerships and mobilize resources from the private and public sectors to promote safe vegetable production methods. Our vegetable lines and technologies help small-scale farmers increase yields, increase their incomes, and grow nutritious food for their families and communities.

The Center's emphasis on five themes—Germplasm, Breeding, Production, Marketing, and Nutrition—shapes our distinctive, holistic view of agricultural research and development. Unlike other institutions, AVRDC has long been comfortable with applying our research to meet the needs of resource-poor farmers in developing countries.

Indigenous and exotic vegetables

As the world's leading international nonprofit vegetable research and development institute, AVRDC – The World Vegetable Center studies both indigenous and exotic vegetables.

Indigenous vegetables are underutilized species from specific locations eaten as part of traditional diets. High in nutrients and important sources of food in times of scarcity, indigenous vegetables such as amaranth can generate income for smallholder farmers if improved seed is available.

Exotic vegetables refer to species introduced to a country or location; in Africa and Asia examples of these would be tomato, onion, and cabbage. The Center works with public and private sector partners to ensure quality seed of adapted exotic varieties is available at reasonable prices.

In breeding programs, the Center works with national partners to select lines with pest and disease resistance, specific fruit color and size, vitamin content, and other beneficial characteristics.

The world's largest public sector vegetable germplasm collection

AVRDC – The World Vegetable Center's Genetic Resources and Seed Unit has the world's largest public sector collection of vegetable germplasm, comprised of more than 56,000 accessions from 152 countries. The genebank contains many examples of wild relatives of well-known crops, which vegetable breeders mine for candidate genes to include in the Center's lines. From more than 10,000 accessions of indigenous vegetables, the Center has released superior lines of highly nutritious species that generally grow well without fertilizer or other costly inputs.

The Center's genebank actively exchanges seed, genetic resources, and expertise among national programs, regional organizations, and the private sector. Our ongoing efforts to engage partners has led to the release of hundreds of varieties throughout the world with notable impact in developing countries.

Continuity from research to development, from idea to implementation

AVRDC – The World Vegetable Center is the only international agricultural research center that always has had "development" in its name and mandate.

By jointly developing projects with farmers and stakeholders, we help ensure project outcomes are more likely to be adopted. The Center conducts regional training courses to enhance the capacity of national scientists and the private sector. Our flexible, innovative, and multidisciplinary teams perform leading-edge research with partners at all levels. Through leadership, coordination, and networking, the Center builds alliances within countries and across national borders to bring the benefits of research to small-scale farmers and their communities.



Emphasis on nutrition and health

With its dual focus on poverty and malnutrition, the Center differs from most other international agricultural research centers. These centers focus on poverty alleviation, but do not specifically address the need for a diverse, balanced diet.

Vegetables are excellent sources of essential micronutrients and health-promoting phytochemicals that can prevent nutritional disorders and reduce the risk of obesity and chronic diseases, including diabetes, cardiovascular disease, and cancer. Yet average vegetable consumption in most countries, whether developed or developing, is well below the level recommended for good health.

Micronutrient malnutrition or "hidden hunger" affects up to 3.5 billion people and causes more than 2.7 million deaths a year, with poor mothers and young children particularly vulnerable to the lack of vitamin A and iron.



Our vegetable lines aim to deliver maximum nutrition: one AVRDC "Golden tomato" contains three to six times more β -carotene than a regular tomato and can provide a person's full daily vitamin A requirement. The Center develops vegetable recipes adapted to local tastes that ensure micronutrients are retained after food preparation. We promote vegetables for food and income through home and school gardens.

Malnutrition is not solely a problem of the poor. People with the income to purchase sufficient food also experience nutritional imbalances due to the lack of variety of in their diets. Type 2 diabetes has reached epidemic levels in Asia, particularly in India, which now has the highest diabetes prevalence in the world. Diet is the primary therapy for diabetes. Bitter melon (*Momordica charantia*) contains compounds that can lower blood sugar; AVRDC is researching this valuable indigenous vegetable to learn more about its antidiabetic properties.

Committed to safe production

AVRDC promotes the production of safe vegetables by developing technology to minimize risks to health and the environment, ensure appropriate input use, and maximize productivity. We address water management issues in vegetable farming through low-cost, easy-to-use microirrigation technologies.

The Center's Starter Solution Technology reduces fertilizer applications and increases yield. Farmers using our integrated pest management strategies based on resistant vegetable varieties, biocontrols, and improved cultural practices have reduced their reliance on pesticides to check troublesome species such as eggplant fruit and shoot borer. Simple postharvest handling methods help farmers get more of their harvest to market, and sound packing and storage techniques prevent microbial contamination from soil, debris, animals, or other factors.

Pro-women research and development

Productive vegetable farms are labor intensive, offer employment for women, and are more flexible in terms of general household needs than farms producing predominantly starchy staples or cash crops. Women have a significant role in value-addition after harvest; their participation in vegetable value chains raises family incomes and nutritional status. Employment in postharvest activities can empower women within households and at the community level, enhancing their capacity to influence policy. AVRDC – The World Vegetable Center monitors gender relations in its activities to ensure the Center's technologies and processes promote gender equity.

Communicating at all levels, for all needs

Clear communication objectives for research and development projects ensure the benefits of the Center's work reach the appropriate audiences. Informational and instructional materials are designed for extension staff, women, and farmers. Online communities, social networking sites, and other means of collaborating with colleagues, partners, and the public across long distances are also deployed. The combination of online and offline approaches allows the Center to deliver and share information that will bring positive change to people's lives.

