



World Vegetable Center

Global Strategy 2026–2033

Science and innovation for enhanced vegetable production
and consumption in a rapidly changing world



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vegetable production and consumption in
a rapidly changing world**

Acknowledgments

This strategy outlines the World Vegetable Center's (WorldVeg) priorities for research and action from 2026 to 2033. It builds on WorldVeg's unique position, extensive partnerships, and a thorough assessment of future challenges and opportunities. We thank all WorldVeg staff, Board members, and partners whose contributions made this a truly inclusive process. We also gratefully acknowledge the support of our long-term strategic funders—Taiwan, the United Kingdom, the United States, Australia, Germany, Thailand, the Philippines, South Korea, and Japan—as well as numerous project funders. Their continued commitment has been essential to the development of this strategy.

Strategy development

Commissioned by the WorldVeg Board of Directors in April 2024, the strategy builds on findings from the Center's 9th External Program and Management Review (2023). Between June and November 2024, WorldVeg conducted 16 thematic deep-dives, six country studies, and gathered feedback from 119 partners across 42 countries. These insights shaped discussions during an internal strategy retreat in Bangkok in September, attended by 22 experts, which led to the first draft. Further input was collected from over 80 staff and scientists during the WorldVeg Global R&D Week and the 66th Board meeting in Benin in November. The final strategy was approved by the Board in April 2025.

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Farmer with leafy greens (Cambodia), boy harvesting amaranth (Tanzania), bitter melon trials (Thailand), students choosing favorite vegetable dishes (Eswatini), rooftop garden (Bangladesh), and vegetables in a market stall (Cambodia).

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World Vegetable Center

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Foreword

Vegetables are nutritional powerhouses—rich in vitamins, minerals, fiber, protein, and phytonutrients. Beyond their health benefits, vegetables offer significant income opportunities, particularly for women, youth, and others with limited access to land or capital. They can be cultivated in small spaces and harvested frequently, making them well-suited for diverse farming systems. They fill a wide range of market niches—both fresh and processed—and contribute to resilient and sustainable food systems.

Despite their immense potential, vegetables remain underutilized in global food systems. Consumption falls far below the World Health Organization’s recommended intake, and malnutrition persists in every country. On the supply side, constraints include poorly adapted varieties, weak seed systems, low productivity, inefficient or excessive use of external inputs, and high postharvest losses. On the demand side, barriers include food safety concerns, limited affordability, and lack of access, among others. These challenges are further intensified by policy frameworks that often overlook the importance of local, safe vegetable production and consumption.

Many nutrient-rich and climate-resilient species—often referred to as ‘traditional’ or ‘underutilized’ vegetables—are at risk of disappearing due to climate change, urbanization, and dietary shifts toward highly processed foods. Despite their value, these ‘opportunity crops’ are significantly underrepresented in global conservation efforts. Today, only about 10% of seed samples stored in genebanks are from vegetables or their wild relatives.

The new World Vegetable Center strategy builds on the successful foundation of its predecessor, marked by significant growth and the adoption of a collaborative research model rooted in Open Science. With strong support from the government of Taiwan, the Center has modernized its research infrastructure at its headquarters, and expanded its global presence. This strategic shift has accelerated the development and adoption of climate-resilient vegetable varieties, sustainable production methods, and improved postharvest technologies. It has also strengthened market connectivity through innovative ‘vegetable business networks’.





Looking ahead, the World Vegetable Center—the only international non-profit organization with a global mandate for vegetables—will continue to build on its unique strengths through this ‘Open Science’ approach. By fostering talent, driving innovation and sharing knowledge, the Center and its partners aim to unlock the full nutritional, economic, and climate resilience potential of vegetables.

Vegetable research and development remains critically underfunded. In the coming years, we will deepen our global engagement, with major expansion planned in Africa and a growing presence in Latin America, the Caribbean, and the Pacific. With adequate support, we aim to double our annual budget and significantly scale our impact on nutrition, livelihoods, and environmental sustainability. In parallel, we will collaborate with partners to influence national and international funding priorities—directing more attention and investment toward nutritious food in regions most affected by malnutrition and food insecurity.

WorldVeg is committed to serving as a catalyst for transformative change. By embedding vegetables into public and private sector initiatives, we envision a future where diverse, safe, and nutritious vegetables are at the heart of healthier lives, more resilient communities, and sustainable food systems.

Junne-Jih Chen
Chair, Board of Directors

Marco Wopereis
Director General



About WorldVeg



The World Vegetable Center (WorldVeg) was established in 1971 as the Asian Vegetable Research and Development Center (AVRDC), headquartered in Shanhua, Taiwan. With more than 50 years of experience, the Center has become a global leader in advancing vegetable science and innovation, supported by world-class expertise, infrastructure, and a broad network of trusted partners worldwide.

Central to WorldVeg's mandate is the conservation and use of the world's largest public collection of vegetable seeds. This invaluable resource underpins its advanced breeding programs, enabling the development of climate-resilient and nutritious varieties that meet farmers' needs across regions.

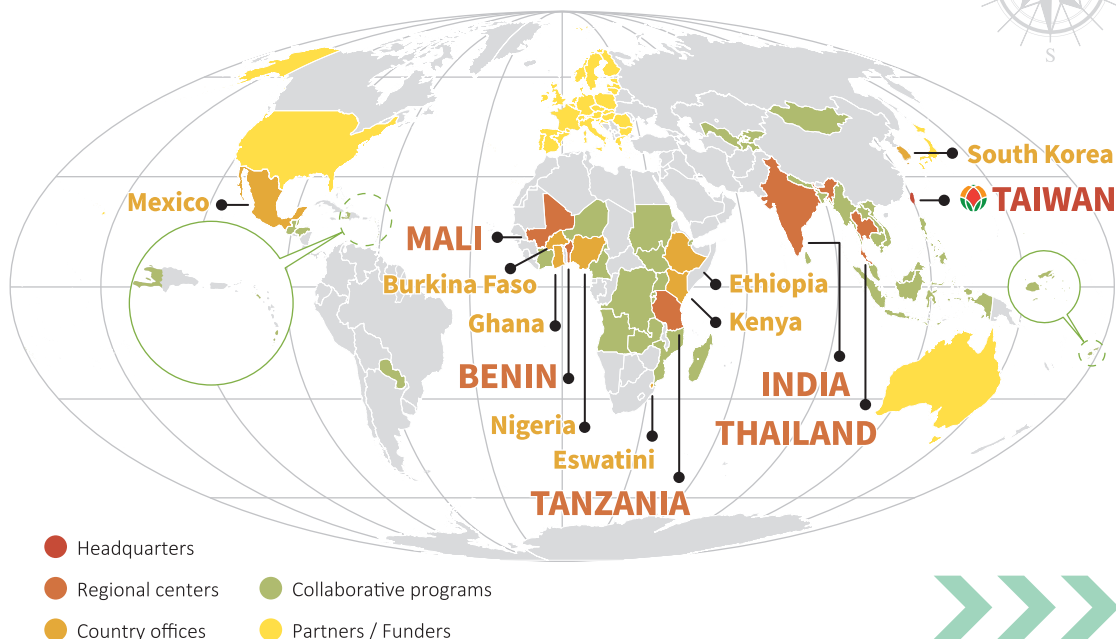
As a global knowledge and learning center, WorldVeg applies research-for-development approaches to tackle challenges and seize opportunities for increasing vegetable production and consumption in low- and middle-income countries. It promotes diversified and sustainable food systems and diets by stimulating demand and supply, while strengthening the overall enabling environment.

By testing and scaling innovations across the vegetable supply chain, WorldVeg and its partners improve food safety, boost productivity, and enhance climate resilience for small-scale farmers, thereby reducing the sector's environmental footprint. Through capacity sharing, improved postharvest technologies, and stronger market linkages, the Center creates new opportunities to make vegetables more accessible, available, and affordable, while cutting losses and waste.

To fully realize its mission, WorldVeg conducts action research on food environments, policy, and consumer behavior, supporting healthier diets for vulnerable populations. This integrated approach aims to unlock the full potential of vegetables for more sustainable, nutritious food systems.

WorldVeg's annual budget for 2025 is estimated at US\$ 30 million, thanks to the generous contributions of its funders. The Center operates from its headquarters in Taiwan, regional offices in Benin, India, Mali, Tanzania and Thailand, and country offices in Burkina Faso, Eswatini, Ethiopia, Ghana, Kenya, Mexico, Nigeria, and South Korea.

A truly global Center



What makes WorldVeg unique?

Global leader with 50 years of excellence as the only international organization solely dedicated to vegetable research and development.

Trusted partner to national governments, international organizations, NGOs, and private sector actors.

Convener of national, regional and global dialogues, bringing together experts and policy makers to drive forward sustainable vegetable production and innovation.

Custodian of the world's largest publicly available vegetable seed collection, safeguarding agrobiodiversity for future generations.

Breeder of climate-resilient nutritious varieties that meet farmers' needs.

Innovator of agricultural and postharvest practices, technologies, and locally-adapted policy support.

Trainer of thousands, supported by experienced scientists and practitioners.



Custodian of global vegetable biodiversity

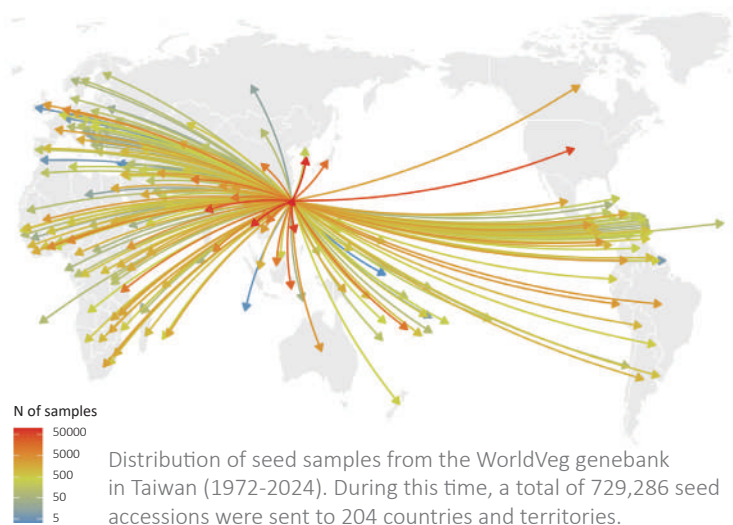
More than
64,000  accessions

including about

12,000  accessions
of traditional vegetables

350
species
from
150
countries

WorldVeg is the custodian of the world's largest public collection of vegetable germplasm. This veritable **treasure box** is continuously mobilized for research, innovation, and for direct use by farmers.



- Since 1972, over 720,000 seed samples distributed to public and private researchers in more than 200 countries.
- Since 2013, more than 125,000 seed kits for vegetable gardens and trials sent to farmers and schools in over 11 African countries.
- More than 1,000 vegetable varieties developed from WorldVeg germplasm that are more climate-resilient, nutritious, and resistant to pests and diseases.

In collaboration with national programs, research partners, and the private sector, WorldVeg ensures these collections are maintained, characterized, and made available for current and future use following standards set by FAO and the Global Crop Diversity Trust. The World Vegetable Center Genebank is part of Genesys—the global information and germplasm exchange network.

2021

At the United Nations Food Systems Summit, WorldVeg, the Crop Trust, and partners called for urgent action to rescue and conserve vegetable biodiversity to secure this heritage and use it in research, breeding, and crop diversification for a more nutritious and resilient future.

2024

WorldVeg officially opened Africa's Vegetable Genebank at its regional center for Eastern and Southern Africa in Arusha, Tanzania, and launched an African Vegetable Biodiversity Rescue Plan endorsed by the African Union.

2025

WorldVeg convened global thought leaders at The Rockefeller Foundation's Bellagio Center in Italy who recognized the urgent need to establish a Global Vegetable Biodiversity Initiative as a unique nexus of biodiversity, agriculture, and health.

Breeder of crops for a healthier, resilient future



WorldVeg breeding programs leverage the biodiversity available in the WorldVeg genebanks and apply advanced breeding technologies, including marker-assisted and genomic selection and phenotypic prediction, to accelerate genetic gain in the breeding programs.

Farmer and stakeholder participatory breeding is applied to ensure that crop improvement is demand-driven and breeding products are taken up by farmers.

Collaboration with public and private sector research and scaling partners, especially in breeding consortiums, enhances variety uptake and amplifies the impact of WorldVeg breeding programs.

Partnering through breeding consortiums

Collaboration with the private seed sector has increased the impact of the Center's vegetable breeding programs. These collaborations have been formalized in two vegetable breeding consortiums in Asia and Africa.

In Asia, the *Asia and Pacific Seed Association (APSA) – WorldVeg Vegetable Breeding Consortium* was established in 2017 and has grown from 19 members in 2017 to 58 in 2024. Nearly 15,000 seed samples have been shared with Consortium members since 2017. In 2024, Consortium members reported 193 varieties on the market that were wholly or partially based on WorldVeg breeding lines, and over 80 tonnes of seed sales that could potentially benefit 830,000 farm households in Asia.

In Africa, the *Africa Vegetable Breeding Consortium (AVBC)* was established in 2018 as a joint initiative of WorldVeg and the Africa Seed Trade Association (AFSTA). It reached 18 seed companies in 2024. The focus extends beyond sharing breeding lines to include capacity development. For instance, WorldVeg organized a hybrid seed production training course for 10 companies in 2024.

These vegetable breeding consortiums benefit both WorldVeg and seed companies equally. They provide WorldVeg with a pathway to scale its breeding programs, enabling the Center to reach hundreds of thousands of smallholder farmers. The consortiums also supply breeders with critical market intelligence that informs breeding priorities. Meanwhile, seed companies diversify the genetic base of their breeding programs, access novel traits and unique breeding lines, and leverage WorldVeg's expertise and technical support.

Leader in research for nutrition, livelihoods and resilience



- WorldVeg examines the social, economic, and policy factors that influence vegetable production, distribution, and consumption to design innovative solutions and scale successful interventions.
- WorldVeg is a leader in the design and establishment of vegetable gardens – for homes, schools, cities, or displaced people – that provide ready supplies of fresh, nutritious food for home use, school meals, refugees, or sale.
- Promoting agroecological practices reduces reliance on external inputs and extends harvest periods during the off-season.
- WorldVeg introduces improved postharvest practices and promotes 'value addition' – including processing, packaging, marketing and storage improvements - that generate jobs across the vegetable sector.

For maximum impact

WorldVeg operates on an international public goods model, ensuring that research results are widely shared and accessible for maximum impact across a broad spectrum of communities and stakeholders.

- **Smallholder farmers and vegetable growers** benefit from a range of climate-resilient vegetable varieties and practices that build soil and plant health and reduce reliance on external inputs, providing enhanced income opportunities and resilience.
- **Urban and rural consumers** benefit from greater access to nutritious and safe vegetables adapted to their needs. This includes people vulnerable to malnutrition, particularly women of reproductive age, children under five, internally displaced people, and the elderly.
- **National agricultural systems** benefit from collaborative projects and capacity-strengthening activities.
- **Women and youth** benefit from new opportunities in vegetable production, processing, and marketing through the vegetable business network approach.
- **Private sector companies** benefit from WorldVeg's research, allowing them to better serve smallholder farmers and other value chains actors. In particular, seed companies can access an expanded pool of germplasm, breeding lines, and tested seed varieties that meet local conditions and demand.
- **Scientists and students** worldwide benefit from the WorldVeg Open Science approach to join collaborative research and enhance their professional development.



The urgency

An urbanizing world in a changing climate

The world stands at a pivotal moment for transforming food systems. A range of interconnected global trends—climate change, environmental degradation, urbanization, demographic shifts, control of production and processing, changing consumption patterns, globalization of trade, and geopolitical instability—are all reshaping how food is produced, distributed, and consumed. The following sections explore how these trends are impacting vegetable production and consumption.

Urbanization and demographic shifts –

The world's population has more than doubled from 4.0 billion in 1971 when WorldVeg was established to 8.2 billion in 2024. It will likely reach 8.9 billion by 2035, when 63% of the world's population will live in cities. In Africa, vegetable supply has stagnated over the past decade, and concerted efforts are needed to boost production, including by empowering youth to pursue opportunities in vegetable value chains. In parts of the world the population is aging, affecting dietary requirements and contributing to labor shortages that particularly impact labor-intensive vegetable production.

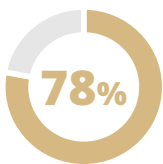
The urban population is expected to grow by almost 2 billion from 2025 to 2050, increasing the demand for fresh vegetables.

2.0
billion 

Changing consumption patterns –

Nutrition challenges are increasingly complex, with a rising burden of obesity and diet-related non-communicable diseases coexisting alongside child stunting and micronutrient deficiencies. Underweight and child wasting are also urgent concerns in conflict areas. Vegetable-rich diets are unaffordable to many households, while ultra-processed foods are often readily available and relatively cheap. Almost 80% of adult men and women in lower-income countries eat less than five daily servings of fruit and vegetables, and the diets of two thirds of the world's population lack iron and iodine, and about half lack folate, riboflavin, vitamin C, and zinc.





78% of adult men and women in lower-income countries eat less than 5 daily servings of fruit and vegetables.

Shifting global health challenges –

By 2035, globally, 54% of adults and 39% of youth (5-19 years old) will be overweight or obese, with low- and middle-income countries experiencing the fastest growth. Nutrition is a major modifiable risk factor for all non-communicable diseases, and vegetable-rich diets are fundamental to combating this.

**190
million
children**

Vitamin A deficiency affects around 190 million children under 5 years old globally, largely due to low consumption of vegetables rich in carotenoids (e.g. carrots, spinach).

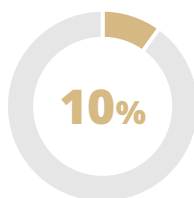
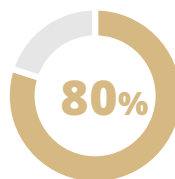
Climate change – Extreme weather events increasingly disrupt crop production, decreasing yields and heightening vulnerability to pests and diseases. Adopting climate-resilient vegetable varieties will safeguard food security and build long-term resilience, while there is huge untapped potential in traditional or ‘opportunity’ vegetables. These require breeding efforts and need to be characterized and screened for nutritional value, market and climate adaptation. Improved production and diversification of staple-based farming systems with vegetables also provide multiple income generation opportunities and build resilience. Cutting back on losses and waste, along with the use of renewable energy for storage and processing, will further reduce the carbon footprint of the vegetable sector.



Environmental degradation – Globally, a third of all soil is degraded, with 24 billion tonnes lost annually due to erosion. Agriculture consumes an estimated 70% of the world's freshwater, and nearly two billion people are facing water scarcity. Commercial vegetable production is often linked to excessive and inefficient use of external inputs, leading to food safety concerns and greenhouse gas emissions from fertilizers. Pesticide overuse is another widespread issue, degrading the environment, while alternatives such as biopesticides and biofertilizers need further testing and promotion.

Biodiversity loss – Biodiversity is in serious decline, with 88% of natural ecoregions degraded or disappearing, 40% of plant species threatened with extinction, and 80% of genetic erosion studies reporting a systematic loss of crop varieties. Despite the diversity of vegetable species compared to other major crop groups, only about 10% of the seed samples stored in genebanks worldwide are from vegetables, according to current conservation assessments. Vegetable biodiversity, including wild relatives, is rapidly declining because of climate change, rapid urbanization, and homogenization of production systems and diets. This loss means narrowing new crop options and reducing variation for breeding nutritious and resilient varieties for current and future generations.

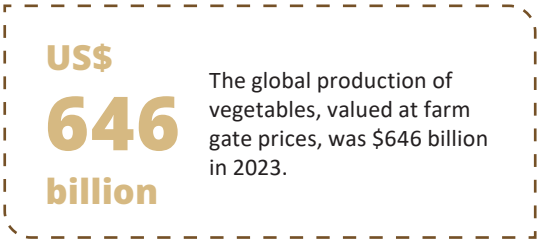
Loss of crop diversity is reported in 80% of genetic erosion studies. With only a handful of commercial vegetable varieties being widely cultivated, vegetable crops are vulnerable to pests, diseases and climate change.



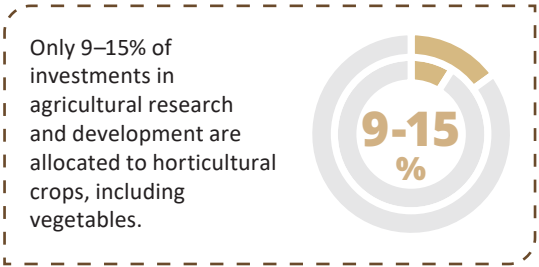
Only about 10% of the seed samples stored in genebanks worldwide are from vegetables.

Geopolitical instability – Conflicts and political unrest emerge from the resource scarcity and competition caused by climate change, demographic shifts, inequalities, and globalization. This geopolitical instability can disrupt global food systems and undermine food security by causing supply chain interruptions, market volatility, withdrawal of agricultural and infrastructural investments, and changes to trade policy. Globally, there are 117 million displaced people who are highly vulnerable to malnutrition. It will become increasingly important to support robust food systems that mitigate and adapt to the effects of geopolitical instability on food availability, access, and utilization.

Growing inequalities – Inequalities, including economic, geographic, educational, racial, health, political and gender, all interact to exacerbate effects on the food system. People living in low- and middle-income countries and small island developing states are especially vulnerable to negative consequences of interlinked inequalities. Without a focus on inequality, research and interventions in food systems may inadvertently worsen existing disparities, so they must be equity-driven, participatory, inclusive, and context-specific.



Frontier technology and innovation – Frontier technologies, such as artificial intelligence, big data, robotics, automation, nanotechnology and precision agriculture, can revolutionize vegetable production by increasing yields, improving nutritional quality, and reducing environmental impacts. Ensuring equitable access to and benefits from these innovations is crucial to strengthen future food systems, particularly in Africa, Asia, and Latin America. Investing in research and development, utilizing new technologies, and promoting the adoption of innovative practices can enhance climate resilience and sustainability in vegetable systems.



The time is now

Vegetables remain under-prioritized in seed systems, policies, and health strategies—especially compared to staple crops, which benefit from around US\$700 billion in annual subsidies. Yet small policy shifts could redirect both supply and demand toward healthier diets. Despite dietary guidelines urging that half our plates be filled with fruits and vegetables, only 9–15% of agricultural R&D funding supports horticultural crops. This imbalance demands urgent correction. With greater investment and global focus, WorldVeg is ready—and committed—to leading the shift toward more nutritious, vegetable-rich food systems.

The power of vegetables

Vegetables are a powerful and underutilized resource for improving health, supporting livelihoods, and enhancing resilience in food systems worldwide.

Vegetables play a vital role in advancing the 2030 Agenda for Sustainable Development. They contribute directly to 9 of the 17 Sustainable Development Goals (SDGs).

- > **Nutrition** – Vegetables are rich in essential vitamins, minerals, dietary fiber, proteins, and phytonutrients. However, global vegetable production remains insufficient to meet the nutritional needs of populations. A quarter to a third of the burden of disease is due to low consumption of fruits, vegetables and pulses. Increasing vegetable availability, access and consumption can play a critical role in improving public health and addressing malnutrition.
- > **Livelihoods** – Vegetable production and trade offer significant opportunities for employment and income generation. Per square meter, vegetables can provide 5 to 7 times more net income than staple crops like rice, maize, or wheat. Their high productivity in small areas makes them particularly appealing to youth, women, and marginalized groups with limited access to land. The growth of vegetable value chains provides economic opportunities for farmers, vendors, and others involved in the sector.
- > **Resilience** – Vegetables can enhance resilience to climate and economic shocks. Producing them for household consumption and local sale helps families withstand and recover from crises. A key strategy for farmers is to grow a diverse range of vegetables, reducing risk—especially when their produce is connected to reliable markets.



Vegetables are not just a part of the plate; they are powerful drivers of change toward more nutritious, resilient, and sustainable food systems. To unlock their full potential, vegetables must be prioritized and integrated into food, health, climate, and development agendas.



Spotlight: Opportunity vegetable crops

As the world confronts climate change and persistent nutrition challenges, there is growing consensus that food systems must diversify. One key pathway is through promoting opportunity vegetable crops—traditional, underutilized vegetables that are often more nutritious and climate-resilient than commonly grown varieties. These crops—such as amaranth, spider plant, jute mallow, and African eggplant—thrive in harsh conditions and are deeply rooted in local food cultures. Despite their resilience and nutritional value, they remain largely ignored in research, policy, and investment. Tapping into their potential can improve nutrition, support livelihoods, and make food systems more adaptable to future shocks.

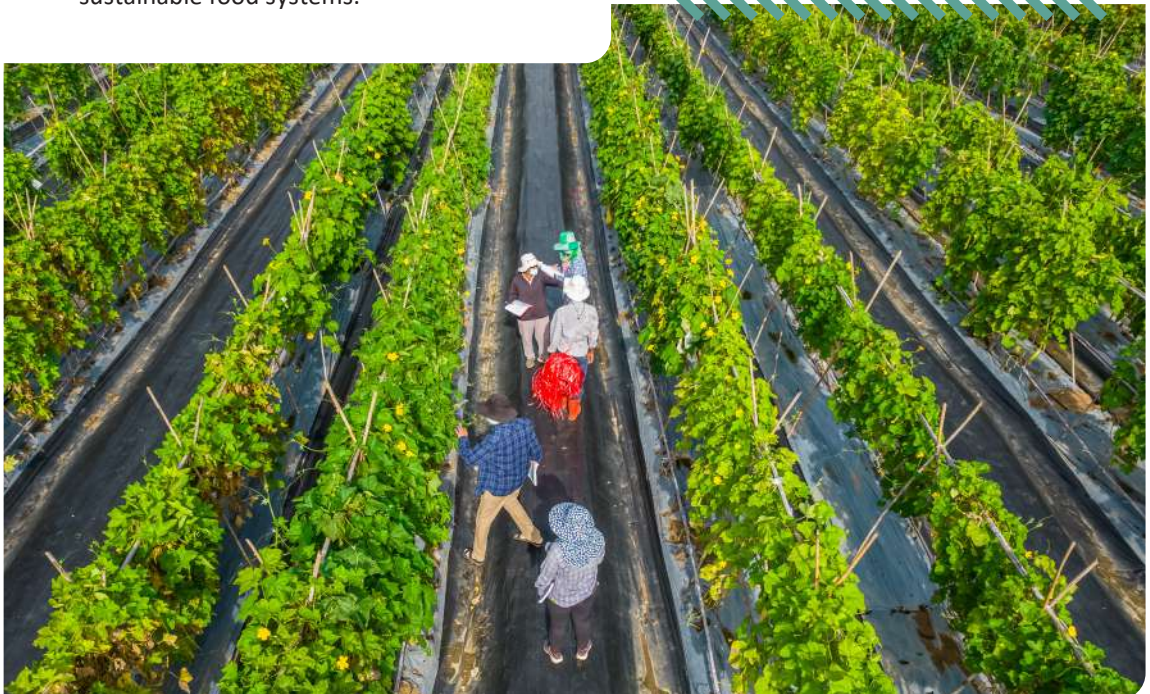
The strategy

- > **Vision:** A world where a diversity of vegetables is consumed by all.
- > **Mission:** To deliver science and innovation for enhanced vegetable production and consumption in a rapidly changing world.



Our ambitions

- ▶ We strive to expand our role as a global hub for vegetable science and innovation in a rapidly urbanizing world facing climate change. We will realize together with our partners the nutritional, economic, and resilience potential of vegetables. This includes dedicated efforts to increase research collaboration across sectors and build research and development capacity in high need areas.
- ▶ We aim to become the leading organization supporting the transformation of urban food systems, ensuring they are productive, profitable, healthy, sustainable and inclusive.
- ▶ With enormous opportunities for vegetable science and innovation globally, we will continue to invest in Asia while expecting major growth in Africa, Latin America and the Caribbean, and the Pacific.
- ▶ We will act as a catalyst for food systems change, adding vegetables to public and private sector interventions and working in partnership towards a world where diverse, nutritious, and safe vegetables are central to healthier lives, more resilient livelihoods, and sustainable food systems.
- ▶ We will transition from project-based work to shaping and managing broader, multi-funder programs that address complex challenges and boost our impact. By securing local, national, and regional government we will ensure true ownership and long-term sustainability of these initiatives.
- ▶ To achieve these ambitions, we aim to double our annual budget to about US\$ 60 million by 2033. Moreover, through our work in partnership, we will contribute to a substantial shift in national and international R&D funding towards nutritious food, including vegetables.





Open Science approach

WorldVeg has adopted an Open Science approach that drives global collaboration, resource sharing, and advances innovation in vegetable research. This enhances the Center's visibility and influence within the scientific and development communities, while fostering a vibrant learning culture through collaborative, cross-disciplinary research around the world.

The approach pursues three major objectives:

- **Attract talent** – WorldVeg will increase opportunities for students, postdoctoral fellows, and visiting scientists from both the public and private sectors to contribute to its research agenda. A dedicated fund will support strategic research with partners and expand the hosting of graduate students and early-career researchers across its headquarters and regional centers.
- **Drive innovation** – WorldVeg will co-develop and implement forward-looking programs with partners to strengthen vegetable production and consumption in safe and sustainable ways. By leveraging resources, expertise, and data-driven science, the Center will accelerate the development and scaling of novel, adaptable solutions that deliver meaningful impact.
- **Share knowledge** – WorldVeg will strengthen regional research networks and convene partners through targeted events, dialogues, and collaborative platforms focused on strategic priorities in the vegetable sector. These efforts will promote open exchange, stimulate innovation, and support the broader uptake of research outcomes. By capturing lessons from both successes and challenges, WorldVeg will ensure its interventions and strategic decisions are consistently grounded in evidence.



Research programs

WorldVeg's mission to deliver science and innovation for enhanced vegetable production and consumption in a rapidly changing world is implemented through two closely coordinated research programs. One focuses on the biological sciences, while the other focuses on social sciences and nutrition.

Biological sciences program

This program takes an integrated approach to enhance the resilience, sustainability, and productivity of vegetable systems. It combines varietal development with research on agroecological practices and innovations in food safety and postharvest methods. The goal is to ensure that diverse, high-quality, and safe vegetables are produced sustainably while supporting livelihoods, especially under climate and resource constraints.

At the heart of the program are WorldVeg genebanks in Taiwan and Tanzania, which serve as critical resources for the conservation, characterization, and availability of vegetable biodiversity. Research focuses on optimizing the access and quality of these genetic materials. Breeding programs leverage this biodiversity and apply advanced tools such as genomics-assisted selection and phenotypic prediction to accelerate the breeding process. Target crops include a range of vegetables with high economic or nutritional value such as tomato, pepper (chili, sweet, habanero), cucurbits (bitter melon, tropical pumpkin, ridge gourd, sponge gourd), legumes (mung bean, urd bean, vegetable soybean), amaranth, African eggplant, and okra. This crop portfolio adapts to evolving stakeholder needs. Breeding consortiums (page 6) harness the strengths of the private sector to develop commercial varieties and deliver them to millions of vegetable farmers and gardeners worldwide.



The program provides a comprehensive examination of soil health, plant health, and their links to human health in close collaboration with the social sciences and nutrition program. Priorities include optimizing agroecological and regenerative farming practices, sustainable pest and disease management, and strengthening climate resilience as well as farmers' adaptive capacity. Improved irrigation and postharvest technologies are key focus areas, especially those that reduce food loss, ensure safety, and suit smallholder conditions.

Research also strengthens seed systems to expand access to high-quality, climate-resilient seeds, and promotes diversification of cereal-based systems with nutrient-rich vegetables and legumes. Through close collaboration with social sciences, the program integrates market intelligence, participatory approaches, and policy engagement to ensure that research outputs effectively meet the needs of farmers, consumers, and broader value chain actors, fostering sustainable and inclusive vegetable production systems.



Main scientific disciplines:	Plant breeding, genetics, data science, entomology, plant pathology, crop physiology, agroecology, agronomy, and postharvest science.
Key areas of research:	Vegetable breeding, biodiversity, plant health, soil health, seed health, postharvest research, and omics.
Main types of innovations:	Genomic and phenomic tools to capture key traits, specialized populations to support trait discovery and breeding, high-performance vegetable breeding lines, packages of sustainable production practices, decision support tools for vegetable farmers, post-harvest and processing technologies.

Examples of this program's work:

- Research to identify hotspots of genetic diversity that could harbor key traits for adapting vegetables to climate change.
- Interdisciplinary research combining biodiversity, genetics, phenomics, bioinformatics, plant breeding, pathology, and entomology to develop new vegetable breeding lines.
- Research that develops integrated farm management practices to enhance soil and plant health while improving the nutritional quality of vegetables.
- Research on adapting postharvest technologies to local conditions to minimize vegetable losses and enhance food safety.



Social sciences and nutrition program

This program complements the biological sciences program by focusing on the human dimensions of food systems. It examines the behavioral, social, and institutional drivers that influence vegetable production, marketing, and consumption.

Using a food systems approach, the program explores barriers to vegetable consumption, particularly among groups vulnerable to micronutrient deficiencies such as young children, pregnant and lactating women, low-income households, adolescents, and the elderly. It designs and tests innovative solutions to promote vegetable consumption and partners with stakeholders to scale successful initiatives.



The program works closely with the biological sciences program to accelerate the adoption of improved technologies, including better seeds and enhanced soil and plant health solutions. It identifies and addresses bottlenecks at the farm, market, and policy levels, for example, challenges in adopting biopesticides. It also aims to optimize scaling strategies, conducting real-world experiments to evaluate the cost-effectiveness of different approaches, such as distributing seed samples of improved vegetable varieties to farmers.





Policy analysis is another key focus, covering issues related to vegetable seeds, biopesticides, retail markets, and food vendors. The program seeks to foster an enabling institutional environment that supports increased production and consumption of safe vegetables.

Finally, the program conducts impact evaluations and systematic reviews of policy and technological interventions in the vegetable sector to build a strong evidence base on what works and what doesn't, ultimately promoting greater vegetable production and consumption.

Main scientific disciplines:

Agricultural economics, public health and nutrition, and rural sociology.

Key areas of research:

Farm management, food systems research (including consumer behavior, food environments, and food policy), gender research, agricultural marketing and value chains, and impact evaluation.

Main types of innovations:





Public-private partnerships, scaling strategies, innovative business models such as vegetable business networks (VBNs), social and behavioral change initiatives, interventions aimed at vegetable demand creation, and supportive policy measures.

Examples of this program's work:




- Research to identify the drivers of low fruit and vegetable consumption and uncover entry points for effective interventions.
- Impact evaluations to quantify and qualify how improved vegetable varieties or agronomic practices influence people's diets, livelihoods and the environment.
- A cross-country study analyzing national seed laws, regulations, and policies to understand their impact on the development of the vegetable seed sector.
- A school-based experiment testing behavioral nudges designed to increase children's vegetable intake.



Breeding priorities

Objective		Develop high-yielding, abiotic stress resilient, and disease-resistant varieties tailored to diverse agroecological conditions, enhancing productivity, nutrition, and market value of the crop	
Breeding Program	Crop	Target Regions	Important traits
Tomato 	Fresh market tomato	Asia, Africa, Latin America	<ul style="list-style-type: none">Climate resilience: Tolerance to heat, drought, and extreme weather conditionsDisease and pest resistance: Resistance to key pathogens such as Tomato yellow leaf curl virus, Fusarium wilt, Bacterial wilt, Late blight, and emerging pathogens (Begomovirus, Tomato brown rugose fruit virus), as well as insect pestsShelf lifeTaste and colorRoot system performance - unlocking future breeding potential for resilience to climate change adaptation
	Dual purpose: Processing and fresh market tomato		
	Cherry tomato and other special products		
Pepper 	Chili	Asia, Africa, Latin America	<ul style="list-style-type: none">Resistance to Begomovirus (ChiLCV, PepYLCV, etc.), Potyvirus (ChiVMV, PVMV, etc.), Cucumber mosaic virus, and Tobamovirus; chili anthracnose, phytophthora blight, powdery mildew, and fusarium wilt; bacterial wilt and bacterial spot, thrips and broad mitesAbiotic stress tolerance: high and low temperature, drought, floodingProduction traits: tall, vigorous, erect plant stature, high and stable yield, high number of fruits per plant, and matching diverse market segmentsMale sterility systems for hybrid productionQuality traits- chili: High capsaicinoid and carotenoid contents, color retention; Sweet pepper: high vitamin C content and long shelf life; Habanero: high capsaicinoids, consumer-accepted aroma, and long shelf life
	Sweet pepper		
	Habanero	Africa, Latin America	
Cucurbits 	Tropical pumpkin	Asia, Africa, Latin America	<ul style="list-style-type: none">Disease resistance: Begomo- and Potyviruses, powdery and downy mildewGynoecey, seedlessDwarf typeHigh nutritional value - pumpkin: Pro-vitamin AMarketability: Size, color, taste
	Bitter gourd	Asia	
	Sponge gourd		
	Ridge gourd		
Legumes 	Mungbean	Asia, Africa	<ul style="list-style-type: none">Synchronous, early (55-60 days) and mid-maturing (65-70 days)Resistance: Yellow mosaic disease, Anthracnose, Cercospora leaf spot, dry root rot, Fusarium wilt, powdery mildew, Bruchids, cowpea aphids, pod borer, stem fly and thrips; Striga resistance (Africa)Tolerance to abiotic stresses: Drought, heat, salinity and waterloggingImproved nutritional quality: High protein and quality, high ironMungbean: resistance to Bean common mosaic virus, Bud necrosis disease, Halo blight, and Tan spot, better sprouting qualityUrdbean: Urdbean leaf crinkle virus, better batter properties
	Urdbean		
	Vegetable soybean		<ul style="list-style-type: none">Resistance to Yellow mosaic disease, rust, anthracnose, frog eye leaf spot, dry root rot, powdery mildew, stem fly, thrips, bean beetle, pod borer, soybean aphids, jassids and nematodesTolerance to abiotic stresses: Drought, heat, salinity, and waterloggingImproved quality: basmati flavorHigh seed viability

18

Breeding Program	Crop	Target Regions	Important traits
Okra 	Okra	Asia, Africa	<ul style="list-style-type: none"> Improved pod quality: Low fruit fiber, delayed pod hardening, and mucilaginous content for Asia but more fruit mucilage for Africa Improved agronomic traits: High pod yield, earliness, long crop duration, photo-insensitive Resistance to viruses: Yellow vein mosaic virus and Enation leaf curl virus Tolerance to insects: jassids and pod borer Tolerance to abiotic stress: Drought and cold Improved suitability for drying Adaptation to intercropping in West Africa
Opportunity Vegetables  	Vegetable amaranth	Africa	<ul style="list-style-type: none"> Green stem and leaf color (in Uganda and Zambia also red types are acceptable) Early growth vigor for uprooting harvesting (mainly in urban and peri-urban areas) Amenable to multiple (3-5 times) harvest (mainly in home-garden production) High leaf yield Rejuvenation ability after multiple cuttings High branching ability for multiple cutting Drought tolerance High nutrient content Resistance to Cercospora leaf spot and Fusarium wilt
	Dual purpose/ Grain amaranth	East Africa	<ul style="list-style-type: none"> High seed yield Lodging tolerance Reduced branching and plant height Early flowering and maturity Creamy-white or yellow grain color Amenable to mechanical harvesting (simultaneous dry down at maturity, no seed shattering) High water-use efficiency Large grain size High protein and nutrient content Resistance to Cercospora leaf spot and Fusarium wilt Tolerance to stem weevil and spider mite
	African Eggplant – fruit type	East, West, and Central Africa	<p>East Africa:</p> <ul style="list-style-type: none"> <i>Solanum aethiopicum</i> (Gilo group) Tolerance to Bacterial/Fusarium wilt, spider mite and white fly Drought, heat, and waterlogging tolerance Semi-determinate for repeated harvest Oblong/oval fruit shape Yellowish white fruit color at commercial maturity Sweet (less bitter) to bitter taste 35-60 g fruit weigh Resistant to Bacterial/Fusarium wilt, spider mite, and white fly <p>West and Central Africa:</p> <ul style="list-style-type: none"> <i>S. aethiopicum</i> (Kumba group) Bacterial wilt and bacterial spot resistance Tolerance to heat and drought stress Improved yield and fruit quality Adaptation to intercropping
	African Eggplant – leaf type	West and East Africa	<ul style="list-style-type: none"> <i>S. aethiopicum</i> (Shum group) in Uganda <i>S. macrocarpon</i> in Benin Soft leaf, non-hairy leaves High leaf yield

Push–Pull–Policy framework

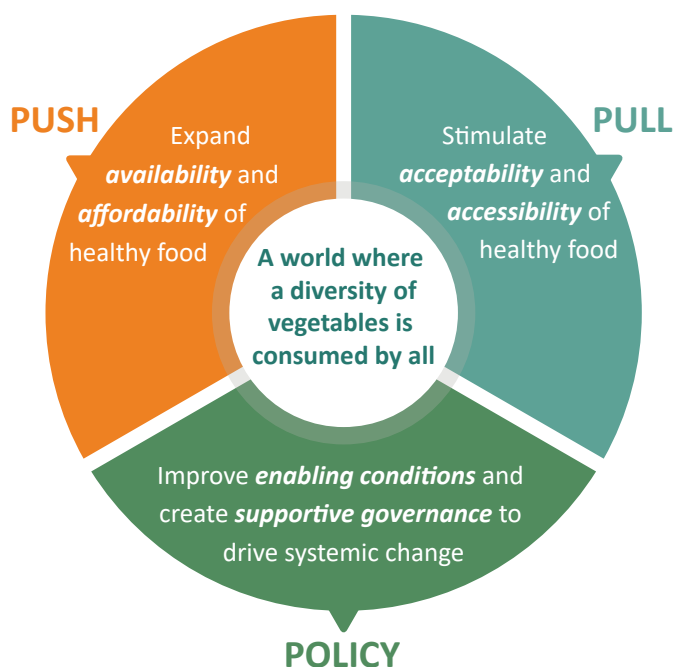
With expertise in biological and social sciences, WorldVeg develops holistic solutions that are both scientifically rigorous and contextually relevant. This integrated approach addresses constraints and opportunities on both the supply- and demand-sides, while also creating an institutional environment that facilitates meaningful change.

This approach is captured in our Push–Pull–Policy framework, which identifies opportunities and addresses barriers to increasing vegetable availability and consumption within food systems.

On the **supply side**, a ‘push’ is needed to help smallholder farmers increase and sustain their vegetable production. This involves accessing quality seeds, improving input use efficiency, enhancing sustainability, and reducing value chain losses. By increasing production and minimizing losses, we can boost market availability, making vegetables more affordable and accessible to consumers without compromising the livelihoods of producers.

On the **demand side**, a ‘pull’ is required to motivate people to consume more vegetables. This includes improving physical access to vegetables through better distribution and retail systems, as well as implementing behavioral interventions such as nutrition education and behavioral nudges to encourage healthier eating habits.

Finally, **policy and governance** are essential to create the institutional environment that supports and promotes these changes on both the supply and demand sides. Effective policies are needed to incentivize investment in the vegetable sector and to shape the broader food system. For example, developing supportive seed policies that are specific to vegetables can attract investment in local variety development and seed production. In addition, regulatory frameworks that support transparent and fair market practices can help strengthen vegetable value chains. Urban food policies can also promote healthy diets by encouraging the growth of urban agriculture and improving access to nutritious food for city dwellers.



By aligning efforts across the supply chain, consumer demand, and policy, WorldVeg's Push–Pull–Policy framework drives systemic change in vegetable production and consumption, ensuring more sustainable and nutritious food systems globally.

Action areas

WorldVeg's research programs are designed to produce impactful outputs that will directly contribute to six action areas. These areas aim to harness the nutritional, economic, and resilience benefits of vegetables, address the urgent need to boost vegetable consumption and production, particularly in rapidly growing urban areas and emergency contexts, as well as safeguard vegetable biodiversity for both current and future generations.

The six action areas and their strategic goals are:



Climate resilience:

Empower smallholder farmers and communities to adapt to climate change through resilient vegetable varieties, diversified cropping systems, and sustainable agroecological practices.



Healthy diets:

Achieve equitable and sustainable improvements in diet quality and nutrition through integrated actions across food systems, to enable and encourage greater vegetable consumption.



Vegetable biodiversity:

Rescue, conserve, and use vegetable biodiversity for improved nutrition, livelihoods, and climate resilience for current and future generations.



Economic empowerment:

Strengthen value chain integration and improve market access to create meaningful employment and income opportunities for women and youth along the vegetable value chain.



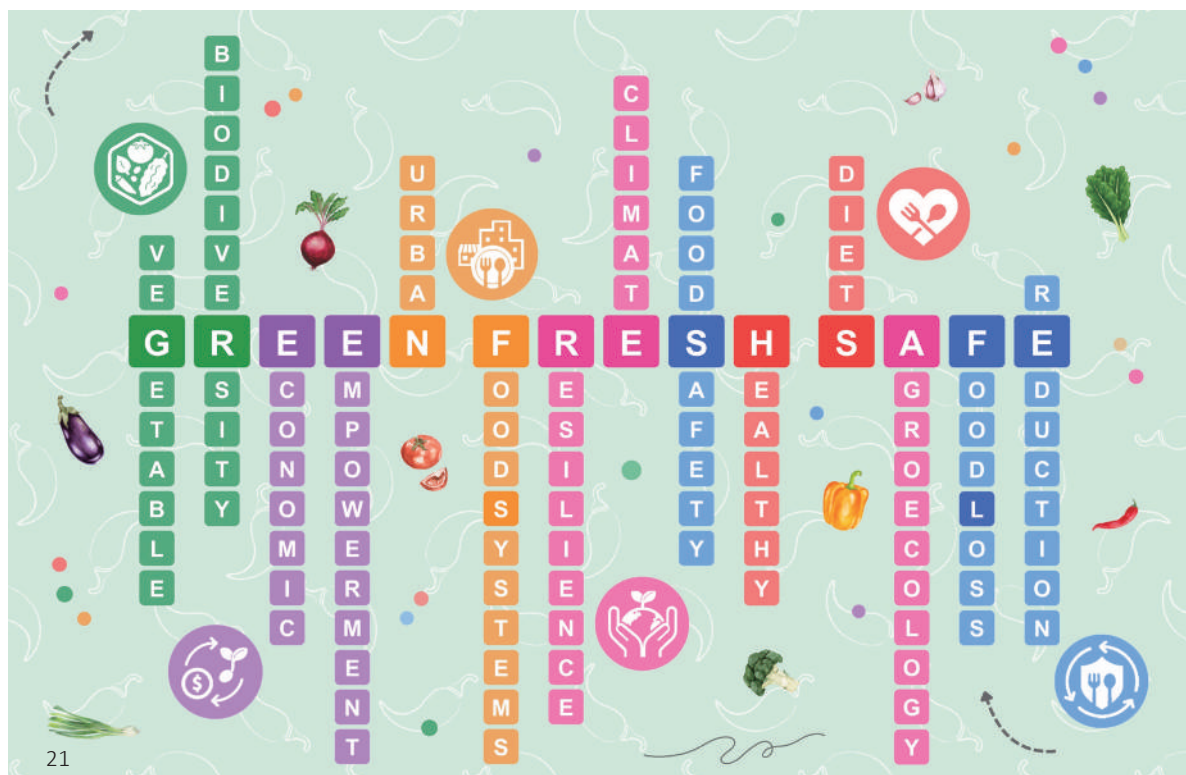
Urban food systems:

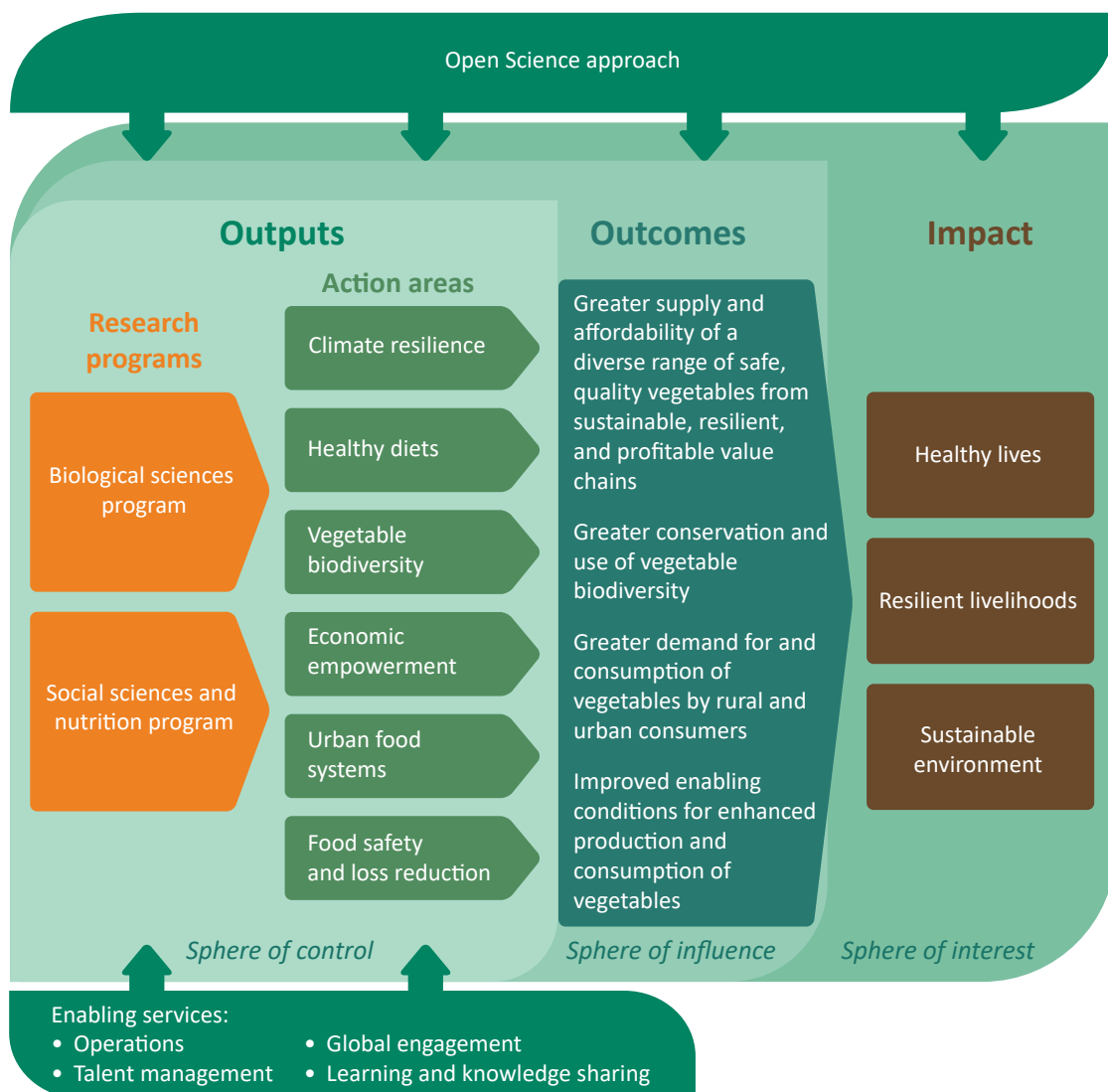
Advance safe and sustainable vegetable production and consumption in urban and peri-urban areas to improve diets, generate economic opportunities, and reduce environmental impact through shorter value chains.



Food safety and loss reduction:

Ensure vegetable quality and safety across the value chain while minimizing postharvest losses.





These action areas reflect WorldVeg’s commitment to a holistic, systems-based approach to transforming vegetable systems—one that enhances nutrition, improves livelihoods, and builds resilience in the face of global challenges. Through research and innovation, WorldVeg will continue to drive progress in these areas to create sustainable, nutritious, and equitable food systems worldwide.

The **Push – Pull – Policy** framework will guide the application and scaling of WorldVeg’s research outputs across these action areas, ensuring that supply, demand, and policy issues are addressed simultaneously to achieve lasting positive outcomes. This integrated approach will lead to measurable impact on lives, livelihoods, and the environment.

Continuous improvement is integral to our implementation. Feedback loops between research programs and action areas foster adaptive learning and strategic refinement over time. Specific indicators will be developed within four-year operational plans to track progress and inform adjustments.

Collaboration is central to WorldVeg’s success. Our work is built on partnerships with diverse stakeholders and guided by the Open Science approach that ensures research insights are accessible, actionable, and widely shared. This collaborative foundation is supported by robust enabling services including operations, talent management, global engagement, and learning systems that ensure research can scale effectively and deliver lasting impact.

Action areas



Climate resilience

Problem statement

Climate change disproportionately affects smallholder farmers in low- and middle-income countries through more frequent droughts, floods, and storms. Over one-third of soils are degraded, biodiversity is declining, and by 2030, half of the global population will face water scarcity. Agricultural systems lack diversification, increasing vulnerability to shocks. Poor seed quality and weak seed systems often hinder access to climate-resilient, disease-resistant varieties. Agroecology offers a transformative path toward more resilient, inclusive, and sustainable food systems. Yet farmers, policymakers, and stakeholders still need guidance and technical support on context-specific practices, including quality seeds, inputs, tools, methods, and technologies.

Goal

Empower smallholder farmers and communities to adapt to climate change through resilient vegetable varieties, diversified cropping systems, and sustainable agroecological practices.

Sustainable Development Goals (SDGs) addressed



Priority actions

- Identify and promote agroecological practices, tools, and technologies for climate adaptation and emission reduction.
- Enhance soil health, raise carbon stock, and lower soil and nutrient loss in vegetable systems.
- Deploy climate-resilient, disease-resistant, high performing vegetable varieties for diverse conditions.
- Strengthen seed systems to ensure farmers have access to high-quality seeds.
- Diversify cereal-based monocultures with nutrient-rich vegetables and legumes.
- Maximize efficiency and reduce reliance on synthetic fertilizers and pesticides.
- Transform food and farm waste into circular fertilizers while creating jobs.
- Study links between soil health, nutritional quality of vegetables, and climate.
- Co-develop agroecological solutions with communities to support resilient livelihoods for women, youth, and marginalized groups.

Expected outcomes

- Enhanced climate resilience of smallholder vegetable farmers, including greater adaptive capacity to climate shocks and stresses.
- Improved seed quality and seed systems, expanding access to superior, climate-resilient varieties.
- Healthier soils with more carbon stock, enhanced soil life, and fewer chemical inputs.
- Enhanced ecosystem sustainability through diversification and better soil, water, and crop management.
- Higher profitability for farmers via sustainable, diversified production and reduced losses.



Healthy diets

Problem statement

Across the world, food systems are failing to support sustainable, healthy diets. Poor diets are linked to a complex picture of malnutrition, including acute and chronic undernutrition, obesity, and diet-related non-communicable diseases. Vegetables are rich in micronutrients, antioxidants, proteins, and fiber, with the potential to contribute substantially to healthy diets, yet average consumption remains far below recommended levels. Barriers to vegetable intake include availability, accessibility, affordability, and desirability. These challenges are worsened in emergency contexts, where food system disruptions threaten access to nutritious foods. Transforming food systems is urgently needed—including vegetable supply chains, food environments, consumer behavior, and emergency response strategies.

Goal

Achieve equitable and sustainable improvements in diet quality and nutrition through integrated actions across food systems, to enable and encourage greater vegetable consumption.

Sustainable Development Goals (SDGs) addressed

2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



5 GENDER EQUALITY



10 REDUCED INEQUALITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Priority actions

- Evaluate approaches to increase vegetable intake as part of a healthy diet at the household and individual level.
- Promote traditional and indigenous 'opportunity' vegetables to improve diets and the resilience of food systems.
- Apply a nutrition-sensitive lens to breeding, production and value chain activities.
- Test and scale models that strengthen market linkages and food environments for better access to safe, nutritious vegetables, including through school meal programs.
- Integrate vegetables into emergency response and recovery programs at local, national, and regional levels, ensuring sustained access to safe, nutritious vegetables during crises such as natural disasters, conflicts, and pandemics.
- Support policies and investments that enable vegetable-rich diets, including social programs.

Expected outcomes

- Greater knowledge and awareness of the nutritional importance of vegetables among consumers, policy makers, and investment decision-makers.
- Increased quantity, frequency, and diversity of vegetables consumed in rural and urban settings, particularly by vulnerable groups.
- Improved availability, affordability, and accessibility of safe, quality vegetables through strengthened market linkages, food environments, and value chains.
- Enhanced integration of vegetables into emergency response and recovery efforts, ensuring continued access to nutritious foods during crises.



Vegetable biodiversity

Problem statement

Vegetable biodiversity, including intra- and interspecific diversity, wild relatives, and associated organisms, is rapidly declining under the pressures of land-use change, environmental degradation, and dietary homogenization. Much of this diversity remains poorly documented, insufficiently conserved, and underutilized. Biodiversity loss narrows the genetic resources available for research, breeding, and cultivation. It reduces the variety of vegetables entering markets, meals, and food cultures, undermining the much-needed transformation of our food systems to healthier and more sustainable outcomes.

Goal

Rescue, conserve, and use vegetable biodiversity for improved nutrition, livelihoods, and climate resilience for current and future generations.

Sustainable Development Goals (SDGs) addressed



Priority actions

- Collect, regenerate, and conserve local varieties and crop wild relatives of priority vegetable crops, ensuring their availability locally, nationally, and globally.
- Characterize and evaluate vegetable biodiversity to reveal genomic, phenotypic, and nutritional variation, enhancing its use in breeding, cultivation, and healthy diets.
- Document and promote traditional knowledge, food cultures, and culinary uses of diverse vegetables to support dietary diversity and cultural heritage.
- Develop and scale context-specific innovations to integrate diverse, climate-resilient, nutrient-rich vegetables into farming systems, value chains, and everyday diets.
- Advocate for the inclusion of vegetable biodiversity in policies at all levels, and foster collective action across communities, institutions, and sectors to conserve and use it.

Expected outcomes

- Vegetable biodiversity conserved and documented for long-term use.
- Vegetable biodiversity made available and accessible locally and globally.
- Use of vegetable biodiversity increased in breeding, research, seed systems, and farming systems.
- Diets improved through greater diversity and nutrition.
- Policies and partnerships strengthened to support conservation and use.
- Stakeholder collaboration enhanced across sectors and communities.



Economic empowerment

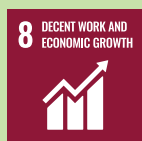
Problem statement

Women and youth in low- and middle-income countries are often at a disadvantage regarding access to business opportunities, stemming from systemic inequities in financial literacy, resource access, mobility constraints, and restrictive social norms. Many women and youth are under- or unemployed and may not consider agriculture as a viable economic opportunity for them. Value chains remain inefficient due to fragmentation, low social capital, and lack of trust among actors.

Goal

Strengthen value chain integration and improve market access to create meaningful employment and income opportunities for women and youth along the vegetable value chain.

Sustainable Development Goals (SDGs) addressed



Priority actions

- Develop approaches that promote the inclusion of women and youth in vegetable value chains, and the creation of employment and income opportunities.
- Facilitate inclusive vegetable business networks that connect women and young entrepreneurs with markets and key value chain actors.
- Strengthen communication and collaboration among value chain actors to build trust and support more inclusive systems.
- Build the capacity of women, youth, and vulnerable groups to access digital tools, training, and emerging market opportunities.
- Support entrepreneurship, innovation, and sustainable vegetable farming practices among groups facing structural barriers.

Expected outcomes

- Increased trust among value chain actors.
- Meaningful employment and increased profits for women and youth along the entire vegetable value chain from variety selection to vegetable processing and retail.
- Widespread adoption of vegetable varieties, sustainable vegetable production and postharvest methods.
- Strengthened vegetable business networks and public-private partnerships that foster inclusion.





Urban food systems

Problem statement

By 2050, more than half of the populations in low- and middle-income countries will reside in cities, many living in poverty and facing limited access to employment and affordable nutritious food. Vegetables play a critical role in improving diets in safe urban and peri-urban environments due to their suitability for small-scale production, repeated harvesting, high nutritional value, and efficient yields with minimal inputs.

Goal

Advance safe and sustainable vegetable production and consumption in urban and peri-urban areas to improve diets, generate economic opportunities, and reduce environmental impact through shorter value chains.

Sustainable Development Goals (SDGs) addressed



Priority actions

- Establish and empower stakeholder coalitions to drive urban food system innovations.
- Identify and address key constraints to safe urban and peri-urban vegetable production and consumption.
- Optimize urban food production systems by introducing climate-resilient varieties and safe production practices.
- Exploit the potential of urban household gardening to provide nutritional, social, economic, environmental and psychological benefits.
- Improve efficiency and safety in urban markets while strengthening linkages between vegetable producers and these markets.
- Explore and test food environment strategies to improve vegetable consumption.
- Generate evidence for the impact of vegetable interventions in urban contexts.

Expected outcomes

- Increased adoption of high performing vegetable varieties adapted to urban and peri-urban conditions.
- Increased safe vegetable production in urban and peri-urban contexts.
- Increased vegetable consumption and improved diet quality and safety of vulnerable urban populations.
- Increased income for smallholders through vegetable sales and related businesses.





Food safety and loss reduction

Problem statement

Vegetables are highly perishable and particularly vulnerable to food safety hazards and postharvest losses along value chains, posing serious threats to food security, nutrition, and economic development. These challenges stem from inadequate infrastructure and storage, limited access to improved handling technologies, and skill gaps among value chain actors. Climate change, pests, weak regulations, and low consumer awareness further increase risks—leading to significant losses, reduced market access, and health concerns, especially for vulnerable groups.

Goal

Ensure vegetable quality and safety across the value chain while minimizing postharvest losses.

Sustainable Development Goals (SDGs) addressed



Priority actions

- Develop, test, and scale innovations and business models to reduce postharvest losses and contamination across vegetable value chains.
- Promote vegetable varieties with improved post-harvest quality traits, improved shelf life and with host resistance to post-harvest pests and diseases.
- Address food safety risks specific to urban and peri-urban agriculture, including contaminated soil and water.
- Scale locally-adapted food safety innovations, such as improved hygiene, traceability, and labeling.
- Assess the costs and benefits of food safety and postharvest technologies.
- Generate and use scientific evidence to inform food safety and loss reduction policies.

Expected outcomes

- Enhanced food safety practices ensuring that nutritious, safe and quality vegetables reach markets, improving food security and public health.
- Increased adoption of innovative food safety and postharvest loss reduction technologies.
- Increased availability and use of evidence to inform food safety and postharvest policy processes.





Values and operating principles

The way we work is as important as what we do. These values and principles guide how WorldVeg pursues its mission and achieves impact.

> Values

What guides our work and culture

- **Dedication to innovation and knowledge** – We conduct world-class science with integrity, share results transparently, and foster collaboration.
- **Commitment to impact** – We strive to deliver meaningful, measurable, and lasting contributions to food systems and the Sustainable Development Goals.
- **Collaboration and partnerships** – We believe inclusive, trust-based partnerships are essential for advancing research for development.
- **Respect for people** – We honor and uphold diversity in gender, culture, ethnicity, religion, age, beliefs, and perspectives.
- **Respect for the environment** – We strive to minimize our environmental footprint by embracing sustainable practices.

> Operating principles

How we work - the 5 Cs

- **Connecting for impact** – We bring together people, institutions, and disciplines across the research-to-impact continuum to drive transformational change.
- **Concentrating efforts strategically** – We focus on regions and themes where targeted investments can deliver the greatest benefit for nutrition, resilience, and livelihoods.
- **Creating critical mass in research** – We build depth in key research areas through an Open Science approach, fostering strong networks and strategic partnerships.
- **Cultivating creativity and talent** – We nurture innovation by supporting young scientists, visiting researchers, and exploratory research that advances vegetable science.
- **Communicating with purpose** – We share knowledge and outcomes regularly and transparently, enabling learning, feedback, and informed decision-making.

Enabling services

WorldVeg's enabling services provide the foundation for delivering impactful research and innovation. They ensure operational excellence, attract and develop talent, engage global partners, and foster continuous learning.



> **Operations** – Efficient and standardized processes underpin our work, ensuring smooth delivery, risk management, and financial stability.

Key systems and practices:

- Standardized procedures across headquarters and regional centers to enable scalability.
- Integrated digital systems that reduce manual tasks and improve efficiency.
- Financial reserves to manage unforeseen challenges.
- Environmental risk assessments and integration of sustainability practices into operational planning.
- Business continuity and emergency response frameworks.
- Clear governance practices that ensure ethical use of resources and accountability.

> **Talent management** – Our people are central to success. We prioritize attracting, developing, and retaining diverse talent within a safe and inclusive environment.

Key systems and practices:

- Career development and a vibrant learning culture.
- Commitment to diversity, equity, and inclusion.
- Priority given to staff safety, security, and well-being.
- Implementation of safeguarding policies and ethical codes of conduct across all locations and activities.





> Global engagement – Strengthening partnerships, mobilizing resources, and communicating strategically are essential to expanding WorldVeg’s global impact.

Main strategies:

- Proactive donor engagement and private sector collaboration to diversify funding, support strategic growth, and advance broader multi-funder programs.
- Establishment of new partnerships and strategic expansion into regions such as Africa, Latin America, the Caribbean, and the Pacific to accelerate the transformation of food systems.
- Strategic communications that enhance visibility and position WorldVeg as a trusted leader in vegetable science and innovation.
- Commitment to equity in partnerships, including support for local leadership and South–South collaboration.

> Learning and knowledge sharing – We cultivate a culture of continuous learning and adaptive management that supports evidence-based decision making.

Essential tools and practices:

- Robust monitoring, evaluation and learning systems to systematically track progress, measure impact, and provide timely insights.
- Ongoing analysis of successes and challenges to gather lessons learned and refine strategy.
- Knowledge mobilization that fosters local ownership and drives uptake and impact of research.
- Digital platforms that enable data sharing and dynamic collaboration.
- Intellectual property practices promoting open access and innovation.
- Strong ethical standards to ensure integrity, accountability, and fairness in research and organizational learning.

The future



A future full of vegetables

Implementing this strategy will enable WorldVeg to significantly advance its mission. Over the next eight years, WorldVeg will establish itself as a global hub for vegetable science and innovation, addressing the challenges of rapid urbanization and climate change.

By embracing an Open Science approach, we will shift national and international research and development funding towards nutritious foods, including vegetables, and double the number of students and visiting scientists. The expanded focus on urban food systems and a strengthened presence in Africa, Latin America and the Caribbean, and the Pacific will be key priorities.



Through collaborative partnerships, we will catalyze transformative food systems change. Vegetables will be embedded in public and private sector programs, making farming and food systems more resilient, safe, and sustainable. WorldVeg will empower communities—especially women and youth—to thrive amid climate and geopolitical challenges by improving the accessibility, affordability, and utilization of safe, nutritious vegetables, even in times of crisis.

In these eight years, WorldVeg will lay the foundation for a more equitable and durable food system—one that places vegetables at the heart of nutrition, sustainability, and resilience for generations to come.



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蔬菜

The **World Vegetable Center (WorldVeg)** is an international non-profit institute for vegetable research and development. It delivers science and innovation to enhance vegetable production and consumption in a rapidly changing world.

WorldVeg is an established leader in nutrition, livelihoods, and resilience. As the custodian of global vegetable biodiversity and breeder of vegetable crops, WorldVeg operates at the forefront of food system transformation. Through partnerships, WorldVeg drives both the demand and supply of vegetables, while strengthening the conditions - policies, markets, and capacities - that enable systemic change. With headquarters in Taiwan, field operations are led through regional centers in Benin, India, Mali, Tanzania, and Thailand, alongside country offices across Africa, Asia and Latin America.

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