

## Enhancing gender and youth inclusion in Ghana's irrigated vegetable value chain

### The context

Despite their importance for agriculture, women and youth in Ghana face a myriad of challenges that limit their inclusion. These include poor access to land, credit, improved seeds and technologies, extension services and agricultural information. Addressing these challenges is key not only for developing agriculture in Ghana but for women and youth development as well. The irrigated vegetable value chain (IVVC) is crucial in this regard, both in terms of on- and off-farm employment opportunities and the contribution of vegetables to dietary diversity, nutrition and health. Irrigation of vegetable crops in the dry season (November–March) not only ensures the nutritional well-being of farming families but also offers a source of income for women and youth for four to five months of the year. As such, the valuable role of women and youth in agriculture, and specifically in the IVVC, requires policies and interventions that include them.

### Key messages

- Strategies targeting vegetable production are currently minimal, limiting the development of the vegetable sector.
- Several opportunities exist for gender and youth inclusion in the IVVC. These include existing policies and interventions, and emerging flexible irrigation solutions for smallholders.
- Making the IVVC more inclusive and equitable involves, among others, redefining the role of vegetables within the government's agricultural development strategy, enhancing sustainable and inclusive interventions to support women and youth, and facilitating multi-stakeholder dialogues, interactive learning and collaboration.

### Key issues

Policymakers and project implementers in Ghana recognize the need for gender and youth inclusion to harness opportunities in the agricultural value chain. However, this does not extend to the IVVC for several reasons. Vegetable production is seen as a secondary source of income for farmers and an alternative livelihood activity for vulnerable populations. Government interventions, therefore, focus more on growing cash crops, cereals, tubers and legumes, mainly in the rainy season. In addition, irrigated agriculture, including irrigated vegetable production, is mainly carried out in the dry season when government support is limited. Some nongovernmental organizations (NGOs) have collaborated with the Ministry of Food and Agriculture (MoFA) to support irrigated vegetable production in the dry season. Many of these interventions target women and youth, helping to boost vegetable production and local distribution, and create market links including connections to export markets. However, challenges remain. Project sustainability is limited, collaboration between interventions is low, and institutional arrangements for implementing policies and interventions are inadequate.



A farmer inspecting her sprinkler in Ghana (photo: Hamish John Appleby/IWMI).

## Analyzing the enabling environment for inclusion

To provide a better understanding of the context in which women and youth are included in or excluded from the IVVC, the International Water Management Institute (IWMI) carried out a comprehensive analysis of the policy framework and interventions (Ofosu and Minh Forthcoming). This work was carried out under the Africa Research in Sustainable Intensification for the Next Generation ([Africa RISING](#)) and Innovation Lab for Small-Scale Irrigation ([ILSSI](#)) projects, and the CGIAR Research Program on Water, Land and Ecosystems ([WLE](#)), which ended in December 2021. A previously developed enabling environment analysis tool adapted to the IVVC (Minh et al. 2021) (Figure 1) was used in this study.

The policy framework encompasses relevant policies and regulations that establish the basis for gender and youth inclusion in agricultural value chains, and the behaviors and power relationships of actors in the chain that affect this inclusion. Meanwhile, interventions encompass programs and projects as well as services and support provided by the government, private sector and other practitioners that aid gender and youth inclusion in these agricultural value chains.

In total, 36 policies and 32 interventions were analyzed and categorized into clusters based on thematic areas. Cluster and cross-cluster analyses were then conducted to identify the aspects that help or hinder gender and youth inclusion in the IVVC. Finally, the results from the policy and intervention analysis were synthesized as a basis for making recommendations. This synthesis analysis focused on the actor and stakeholder landscape, highlighting the barriers to and opportunities for an inclusive IVVC created by the policies

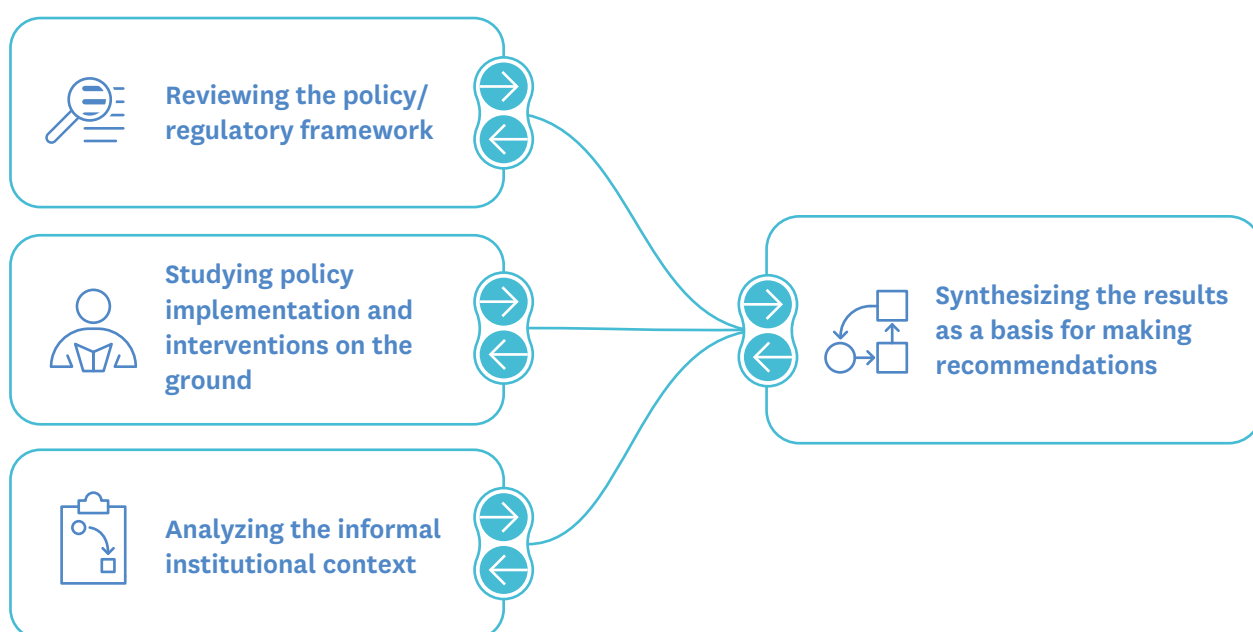
and interventions. The main barriers and opportunities are discussed below.

## Barriers to gender and youth inclusion

**Cash crops, grains, legumes and tubers, which are considered strategic food security crops, dominate agricultural policies.** As a result, strategies targeting vegetable production are minimal, limiting the development of the vegetable sector. This is evident in government input subsidy support programs, which are only provided during the rainy season, depriving dry-season irrigated vegetable farmers of much-needed financial support (Mendes et al. 2014; Dittoh 2020).

**Research and development of vegetable varieties by state institutions are low.** In line with the government's agricultural focus, research institutions favor the development of different varieties of grains, tubers and legumes. Vegetable seeds are often imported, bought from other farmers or used from previous harvests. Imported seeds might not be suitable for local cultivation, while the continuous use of farmer-retained seeds often leads to low yields and disease outbreaks. Farmers in Ghana are also unable to compete effectively with vegetables imported from Burkina Faso, where vegetables with a longer shelf life are cultivated.

**Fragmented responsibilities for women and youth development lead to duplication.** Women and youth development, including in agriculture, is the responsibility of multiple ministries and government institutions. Not only are the roles of each institution not clearly defined, but this fragmentation has led to the duplication of effort by institutions, which limits impact.



**Figure 1.** Analytical framework.  
Source: Minh et al. 2021.

**Delayed and insufficient funding for state institutions restricts their ability to carry out their functions.** This includes low capital investment, resulting in the use of outdated machinery and equipment.

**Poor regulation and monitoring of activities lead to low accountability and multiple NGOs.** Several NGOs operate in Ghana at the local, national and regional levels. However, their activities are poorly regulated, sometimes leading to duplication, inefficiencies, concentration in particular zones and regions, and poor management of project funds.

**Exotic vegetables dominate interventions in vegetable production.** Interventions in vegetable production focus on growing exotic and high-value vegetables for local markets and export. As such, women who often grow green leafy vegetables for home consumption and sale receive limited benefits. Vegetables that are commonly grown as a result of interventions include cabbage, cucumber, lettuce and peppers.

**Few interventions address social barriers restricting gender and youth inclusion in vegetable farming.** Interventions often target improved production among women and youth, including improved access to markets and services such as extension and finance. However, behavioral change projects fail to address social barriers such as low extension delivery caused by norms that restrict non-family male-female interactions and cultural barriers to women owning land. Women farmers often have poor access to credit because they simply do not have the necessary collateral. Cultural norms also prevent many married women from obtaining credit without the consent of their husbands (Anang and Asante 2020; Atuobi-Yeboah et al. 2020).

**Interventions are dominated by input subsidy programs that are not sustainable in the long term.** This could create dependency, leaving farmers unmotivated to save money to buy inputs in the future. Government initiatives such as the Fertilizer Subsidy Program and the Planting for Food and Jobs initiative encounter input supply challenges because the government is slow to pay suppliers.

## Opportunities for gender and youth inclusion

**Existing and extensive policies and laws on agriculture, irrigation, land and water resources.** These serve as a guide for policy implementers in terms of value chain development. Additionally, the National Employment Policy, volume 1 (GoG 2014), National Youth Policy of Ghana (GoG 2010) and National Gender Policy (GoG 2015a) provide guidelines to mainstream gender and youth.

**Policy focus on agricultural intensification through quality planting materials.** The government recognizes the need for good, affordable seeds and planting materials to intensify agriculture. The National Seed Policy (GoG 2013) and National Seed Plan (GoG 2015b) provide guidelines for the local development, importation and classification of seeds and



Vegetable interventions in Ghana mainly target high-value crops like cucumbers, while leafy greens receive limited support (photo: Nana Kofi Acquah).

planting materials. Specific institutions have also been tasked with regulating and enforcing standards for seeds and planting materials. This offers an opportunity to develop high-quality seeds and planting materials, including vegetable seeds.

**Policy focus on developing irrigation infrastructure.** The policy framework supports the use of innovative financing options, including public-private partnerships and private, government and donor funding, for developing irrigation infrastructure. This presents an opportunity for investment in the irrigation sector to improve access for both women and youth. For example, the government is rehabilitating the Kpong Irrigation Dam with support from private investors. The government is also building community dams under the One Village, One Dam initiative.

**Policy focus on women's participation in water management.** Women are recognized as key stakeholders in water management, especially in communities. This presents an opportunity to increase women's membership in water users' associations (WUAs) to improve their access to irrigation facilities and water for agricultural use.

**Established agricultural institutions.** Existing institutions such as MoFA, technical and mainstream universities, and the Crops Research Institute and the Soil Research Institute, both under the Council for Scientific and Industrial Research (CSIR) in Ghana, offer opportunities to find solutions to the challenges in irrigated vegetable production. This includes conducting research to identify high-yielding, climate-resilient and





Public-private partnerships and flexible financing options like pay-as-you-go make irrigation technologies more affordable for women and young farmers in Ghana (photo: Hamish John Appleby/IWMI).

pest-resistant crop varieties, as well as finding innovative ways to deliver extension services and strengthen market links to increase productivity of the vegetable sector.

**Interventions that target vegetable production and value chain development.** Several interventions, including [GhanaVeg](#) (2013–2017) and [HortiFresh](#) (2018–2021), have been established to develop vegetable production and the vegetable value chain, especially in northern Ghana. The aim is to minimize youth migration from north to south during the dry season and to develop the value chain for irrigated vegetables.

**Interventions to improve input supply.** The government has made efforts to increase the availability of seeds and fertilizers using interventions such as the Fertilizer Subsidy Program and the Planting for Food and Jobs initiative. Efforts include partnerships with private sector companies to produce certified seeds. These interventions offer opportunities to develop improved vegetable seeds and bring down their cost.

**Emerging flexible irrigation solutions for smallholder farmers.** Irrigation equipment suppliers increasingly see the need to offer flexible solutions based on farmers' needs and

financial capacities. For instance, Pumptech, a distributor of solar-powered pumps in Ghana, partnered with IWMI to offer pumps to smallholder farmers on a pay-as-you-go or pay-as-you-own basis. Furthermore, support from development partners, such as Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) (Federal Ministry for Economic Cooperation and Development), Germany (BMZ), through the Green People's Energy for Africa project, provides women and youth with opportunities to acquire relevant irrigation technologies.

## The way forward

The findings of this study show that the government is making significant efforts to develop agriculture, including irrigated agriculture, by formulating policies that regulate activities along the value chain. However, these policies focus mainly on inputs, irrigation and production. Collection and trade, distribution and consumption, and development of the entire value chain have yet to receive equal attention. Moreover, very few policies directly target vegetable production and, as a result, it has not gained importance in policy as a standalone sector. This results in gaps in the IVVC, limiting benefits to beneficiaries, including

women and youth. Unaddressed social and cultural barriers further inhibit gender and youth inclusion in the IVVC. While institutional arrangements to support vegetable production do exist, the lack of harmonization and coordination between institutions responsible for agriculture, energy and water management results in piecemeal development of the IVVC. To make the IVVC more inclusive and equitable for women and youth, the following are necessary:

- Adopt integrated water resources management strategies.
- Redefine the role of vegetables within the government's agricultural development strategy.
- Enhance sustainable and inclusive interventions to support women and youth in the IVVC.
- Facilitate multi-stakeholder dialogues, interactive learning and collaboration.

### Adopt integrated water resources management strategies

Integrated water resources management (IWRM) is a process that promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment (GWP 2011). Some recommendations in this area include the following:

- **Promote horizontal and vertical integration of sectors and institutions responsible for water management and water use.** Policies and legislation should focus on integrating horizontal sectors that use water or affect available water resources. These sectors include agriculture, sanitation, environment, climate change, energy and industry. When accessing the water needed for agriculture, considering the needs of other sectors minimizes conflicts and ensures sustained use of the resource. Such conflicts often limit the ability of women and youth to engage in irrigated vegetable farming or related activities. In addition to horizontal integration, vertical integration is also required to coordinate efforts between local, national, regional and international water user groups and institutions.
- **Promote participatory decision-making in policy and interventions.** Policy formulation, policy review and interventions by the government and NGOs must engage all stakeholders in project design, implementation and evaluation. This fosters ownership, improves adoption and promotes the sustainability of interventions in vegetable production. It also minimizes interventions that do not meet the needs of beneficiaries or cannot be sustained in the long term.
- **Integrate social factors when implementing interventions.** Social and cultural norms differ between communities. Interventions must be adaptive in nature to improve success

rates. This includes taking into consideration male-female power relations, social norms on the use of water, cultural and religious beliefs, and social and cultural barriers to women and youth accessing productive assets.

- **Use full-cost pricing complemented by targeted subsidies.** Farmers should pay the full price for water accessed for agricultural purposes. Where necessary, subsidies can be applied to improve access for vulnerable populations, including women and youth. This ensures that managers of irrigation facilities have adequate funds to maintain them. Additionally, it encourages farmers to adopt more water-efficient application methods and to reduce wastage of water, especially flooding of fields.
- **Strengthen the role of women and youth in agricultural water management.** Women have traditionally been involved in managing water for domestic use at the community level. Because of male-female power relations, however, this does not extend significantly to the use of water for irrigation. Targeted efforts must be made to integrate women and youth into water management by placing them in managerial roles within WUAs. This helps to integrate their concerns into decision-making related to the use of water for irrigation.

### Redefine the role of vegetables within the government's agricultural development strategy

Vegetable production is seen as a secondary source of income for farmers and as an alternative livelihood activity for vulnerable populations. In addition, although vegetables have been exported regionally and internationally for several years, they are still classified as nontraditional exports. Therefore, development of the vegetable sector lags behind cocoa, coffee, tubers, grains and legumes. We recommend the following:

- **Prioritize vegetable production as a standalone sector.** Vegetables for export and local consumption are increasing in importance because more consumers want to eat healthier meals. Offering the vegetable sector the same support as other crops in terms of inputs and extension services will help improve vegetable production and encourage women and youth to engage in on- or off-farm activities within the IVVC.
- **Set up research institutions for vegetables or vegetable research units within existing institutions.** Cocoa and oil palm have dedicated research institutions that help produce suitable varieties for local production. Vegetables do not receive the same level of attention. Identifying vegetable varieties suitable for local production would minimize losses and encourage more women and youth to actively engage in the IVVC.
- **Strengthen vegetable associations to influence the objectives of policies and interventions.** The [Vegetable Producers and Exporters Association of Ghana](#) has over 400 members who produce fresh vegetables for the national and international markets all year round. Government support in the form of training, creating market links and financial





Irrigated vegetables are an important source of nutrition and income for women and youth in Ghana (photo: Hamish John Appleby/IWMI).

assistance can help the association develop additional products for export, including green leafy vegetables, which are mainly produced by women. This also creates job opportunities for women and youth in the new value chains.

### Enhance sustainable and inclusive interventions to support women and youth in the IVVC

Government and development partners acknowledge the need to help women and youth find employment or improve agricultural outputs. However, some interventions are irrelevant to the context, duplicated, uncoordinated or short term in nature, limiting the impact on beneficiaries. Recommendations include the following:

- **Scale context-relevant innovation bundles targeting smallholder women farmers and youth.** Several interventions target the development of one aspect of agriculture, e.g., improving the availability of inputs or helping farmers to access extension and financial services. Research shows that bundling complementary and context-relevant innovations – such as solar-powered pumps and affordable financing – are more likely to address farmers' needs and, therefore, improve uptake and use (IWMI 2021).
- **Accelerate sustainable financing to encourage inclusive investment in the IVVC.** Youth and women's access to financing through informal channels such as village savings

and loans groups and microfinance institutions is often not sufficient to increase their production and acquire technologies. The government can strengthen the capacity of the Agricultural Development Bank of Ghana to extend credit to women and youth in the medium to long term. This will support their acquisition of improved technologies for both on- and off-farm activities, including the cultivation of high-value crops.

- **Facilitate private sector investment in and supply of irrigation equipment and services.** Streamlining tax exemptions and making it easier for irrigation equipment suppliers to access these exemptions would reduce the cost of irrigation equipment by up to 19.5%. Moreover, measures to control the influx of cheap and inferior irrigation equipment – and thereby control unfair competition – would encourage the private sector to invest in local manufacturing. Additionally, [data-driven tools](#) can be used to support the private sector in tailoring their business to women and youth. For instance, IWMI partnered with Pumptech to segment its market in northern Ghana. With a clearer understanding of its customer groups, Pumptech modified its business model to include a pay-as-you-go or pay-as-you-own financing option that makes it easier for smallholders, including women and youth, to overcome the high upfront costs of buying a solar pump.
- **Improve the impacts of NGO interventions by strengthening their support for IVVC development and establishing basket funds.** To achieve this, the government should finalize the Draft National Policy for Strategic Partnership with NGOs (GoG 2004) to better regulate the activities of NGOs and thereby improve efficiency and effectiveness. The government should also outline priority areas of the IVVC that require additional investment, such as collection and trade, processing, distribution and consumption. Basket funds, a mechanism for pooling funds from various sources, could then be established for NGOs interested in undertaking projects in those areas. Such joint planning and execution of value chain interventions maximizes impact, minimizes duplication and fosters sustainability.

### Facilitate multi-stakeholder dialogues, interactive learning and collaboration

Several actors in the IVVC promote gender and youth inclusion with varying degrees of success. Regular meetings, interactions and collaborations give stakeholders the opportunity to learn from each other and work together to improve project impacts. We recommend the following:

- **Invest in data storage, management and monitoring systems for interventions.** Storage of project data is essential to support monitoring and evaluation, and to inform subsequent project design, implementation and evaluation. Information on government interventions is scattered and not readily available, compared to projects implemented by development partners. In addition to the collection and storage of (digital) data, the government should use websites

to share information on [interventions aimed at supporting agriculture, including the IVVC](#), to improve access to project information. Further, standard templates for project reporting should be promoted. These will make it easier to compare impacts across projects and identify gaps in gender inclusion.

between relevant NGOs to share best practices in the IVVC and increase benefits to women and youth.

- **Multi-stakeholder dialogues.** The challenges to developing the IVVC are multifaceted. IWMI organizes multi-stakeholder dialogues three or four times a year to discuss different aspects of these challenges (Minh et al. 2020). Focused on [farmer-led irrigation](#), the dialogues provide an interactive learning and collaboration space for key stakeholders and actors to share experiences, insights and solutions, including ways to make the IVVC more inclusive for women and youth.

## References

- Anang, B.T.; Asante, B.O. 2020. Farm household access to agricultural services in northern Ghana. *Heliyon* 6(11):e05517. <https://doi.org/10.1016/j.heliyon.2020.e05517>
- Atuobi-Yeboah, A.; Aberman, N.L.; Ringler, C. 2020. *Smallholder irrigation technology diffusion in Ghana: Insights from stakeholder mapping*. IFPRI Discussion Paper 1973. Washington, DC, USA: International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/p15738coll2.134151>
- Dittoh, S. 2020. *Assessment of farmer-led irrigation development in Ghana*. Washington, DC, USA: World Bank. <http://hdl.handle.net/10986/35796>
- GWP (Global Water Partnership). 2011. What is IWRM? Available at <https://www.gwp.org/en/GWP-CEE/about/why/what-is-iwrn/> (accessed on October 18, 2022).
- GoG (Government of Ghana). 2004. *Draft national policy for strategic partnership with NGOs*. National Consultative Group. Available at <https://www.icsw.org/images/docs/Regions/cwafrica/pub/GAPVOD.%20DRAFT%20NATIONAL%20POLICY%20Revised%2004.doc> (accessed on October 18, 2022).
- GoG. 2010. *National youth policy of Ghana*. Accra, Ghana: Ministry of Youth and Sports, Government of Ghana. Available at [https://www.youthpolicy.org/national/Ghana\\_2010\\_National\\_Youth\\_Policy.pdf](https://www.youthpolicy.org/national/Ghana_2010_National_Youth_Policy.pdf) (accessed on October 18, 2022).
- GoG. 2013. *National seed policy*. Available at <https://nastag.org/docx/resources/GHANA-SEED-POLICY.pdf> (accessed on October 18, 2022).
- GoG. 2014. *National employment policy, volume 1*. Accra, Ghana: Ministry of Employment and Labour Relations, Government of Ghana. Available at [https://www.ilo.org/wcmsp5/groups/public/---africa/---ro-abidjan/---ilo-abuja/documents/publication/wcms\\_373458.pdf](https://www.ilo.org/wcmsp5/groups/public/---africa/---ro-abidjan/---ilo-abuja/documents/publication/wcms_373458.pdf) (accessed on October 18, 2022).
- GoG. 2015a. *National gender policy*. Accra, Ghana: Ministry of Gender, Children and Social Protection, Republic of Ghana. Available at <https://www.mogcsp.gov.gh/mdocs-posts/national-gender-policy/> (accessed on October 18, 2022).
- GoG. 2015b. *National seed plan*. Available at <https://faolex.fao.org/docs/pdf/gha170416.pdf> (accessed on October 18, 2022).
- IWMI (International Water Management Institute). 2021. *Adaptive scaling to achieve system transformation in One CGIAR*. Colombo, Sri Lanka: International Water Management Institute (IWMI). 8p. <https://hdl.handle.net/10568/113924>
- Mendes, D.M.; Paglietti, L.; Jackson, D.; Altozano, A.G. 2014. *Ghana: Irrigation market brief*. FAO Investment Centre: Country Highlights. Rome, Italy: Food and Agricultural Organization (FAO); Washington, DC, USA: International Finance Corporation (IFC). Available at <https://www.fao.org/3/i4158e/i4158e.pdf> (accessed October 18, 2022).
- Minh, T.T.; Cofie, O.; Lefore, N.; Schmitter, P. 2020. Multi-stakeholder dialogue space on farmer-led irrigation development in Ghana: An instrument driving systemic change with private sector initiatives. *Knowledge Management for Development Journal* 15(2):98–118. (Special Issue: The Unusual Suspect? The Private Sector in Knowledge Partnerships for Agricultural and Rural Development). <https://www.km4djournal.org/index.php/km4dj/article/view/489>
- Minh, T.T.; Zwart, S.; Appoh, R.; Schmitter, P. 2021. *Analyzing the enabling environment to enhance the scaling of irrigation and water management technologies: A tool for implementers*. Colombo, Sri Lanka: International Water Management Institute (IWMI). 18p. (IWMI Working Paper 197). <https://doi.org/10.5337/2021.201>
- Ofori, A.; Minh, T.T. Forthcoming. *The policy and intervention environment for gender and youth inclusion in the irrigated vegetable value chain in Ghana*. Ibadan, Nigeria: International Institute of Tropical Agriculture (IITA).





A farmer watering his vegetables near Weija Lake, Ghana (photo: Hamish John Appleby/IWMI).

**For more information, or to request the full report on which this brief is based, contact:**

Thai Thi Minh ([t.minh@cgiar.org](mailto:t.minh@cgiar.org))

**IWMI West Africa Regional Office**

CSIR Campus, Agostinho Neto Road, Council Close, Airport Residential Area, Accra, Ghana

Mailing address: PMB CT 112 Cantonments, Accra, Ghana

## Citation

International Water Management Institute (IWMI). 2023. *Enhancing gender and youth inclusion in Ghana's irrigated vegetable value chain*. Adaptive Innovation Scaling - Pathways from Small-scale Irrigation to Sustainable Development. Colombo, Sri Lanka: International Water Management Institute (IWMI). 8p. (IWMI Water Issue Brief 26). doi: <https://doi.org/10.5337/2023.210>

/ gender / youth / inclusion / irrigated farming / vegetable growing / agricultural value chains / innovation scaling / small-scale irrigation / sustainable development / smallholders / farmer-led irrigation / women farmers / employment / multi-stakeholder processes / institutions / non-governmental organizations / governmental organizations / policies / regulations / strategies / intervention / learning / collaboration / integrated water resources management / water user associations / agricultural development / project design / financing / Ghana /

Copyright © 2023, by IWMI. All rights reserved. IWMI encourages the use of its material provided that the organization is acknowledged and kept informed in all such instances.

Please send inquiries and comments to [IWMI-Publications@cgiar.org](mailto:IWMI-Publications@cgiar.org)

For access to all IWMI publications, visit [www.iwmi.org/publications/](http://www.iwmi.org/publications/)

**IWMI**  
International Water  
Management Institute



IWMI is a CGIAR Research Center

The International Water Management Institute (IWMI) is an international, research-for-development organization that works with governments, civil society and the private sector to solve water problems in developing countries and scale up solutions. Through partnership, IWMI combines research on the sustainable use of water and land resources, knowledge services and products with capacity strengthening, dialogue and policy analysis to support implementation of water management solutions for agriculture, ecosystems, climate change and inclusive economic growth. Headquartered in Colombo, Sri Lanka, IWMI is a CGIAR Research Center with offices in 14 countries and a global network of scientists operating in more than 30 countries.

**International Water  
Management Institute (IWMI)**

### Headquarters

127 Sunil Mawatha, Pelawatte,  
Battaramulla, Sri Lanka

### Mailing address:

P. O. Box 2075, Colombo, Sri Lanka

Tel: +94 11 2880000

Fax: +94 11 2786854

Email: [iwmi@cgiar.org](mailto:iwmi@cgiar.org)

[www.iwmi.org](http://www.iwmi.org)