



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



Improving crop yields and profitability through irrigation, Ghana
Photo: Nana Kofi Acquah/IWMI

PRIVATE SECTOR ENGAGEMENT

Feed the Future Innovation Lab for Small Scale Irrigation (ILSSI)

Key Messages

- » Private sector actors, including smallholder farmers, can benefit from strengthened markets for irrigation equipment and irrigated produce
- » Appropriate, affordable finance solutions are key to enabling smallholder farmers to profitably irrigate
- » Supporting water and natural resource sustainability is in the interests of the private sector
- » Multi-stakeholder dialogue helps create links between actors, as well as fostering innovation and knowledge exchange on how best to expand profitable, farmer-led, small scale irrigation (SSI)
- » Irrigated value chains hold many opportunities for innovative entrepreneurship
- » Private sector actors can be central to boosting inclusive and more equitable access to irrigation

Private sector engagement in irrigated agriculture can help to drive economic growth and poverty reduction. Farmers, entrepreneurs and businesses are already leading the way in increasing access to small scale irrigation. From companies to small scale farmers, the private sector is co-creating, co-funding and co-managing irrigation related business. To ensure everyone achieves good returns while working within environmental boundaries, [Feed the Future Innovation Lab for Small-Scale Irrigation \(ILSSI\)](#) is supporting research organizations and for-profit companies to jointly share information, innovate technologies, and develop inclusive, market-based approaches.

ILSSI is a research-for-development program that aims to support expanded farmer-led irrigation in sub-Saharan Africa and South East Asia. ILSSI is partnering with a range of private sector actors with the overall objective of stimulating the development of robust, irrigated agriculture market systems. Since 2013, ILSSI has sought to provide evidence to support the sustainable scaling of SSI technologies. ILSSI is a part of the [U.S. Government's Feed the Future Initiative](#) and links with other relevant networks globally.



Private sector actors, including smallholder farmers, can benefit from strengthened markets for irrigation equipment and irrigated produce

Market-led agricultural growth can be accelerated through SSI investments. Research shows that SSI can be profitable for farmers and private sector companies in well-functioning markets. Climate variability, such as longer dry spells are pushing more producers to supplemental irrigation, while demand for vegetables and fruit are pulling farmers into dry season irrigated horticulture. As smallholder farmers focus more on commercializing their activities, opportunities for mutual benefit are emerging. [Farmer-led irrigation](#) enables greater stability and quality of produce supply, which can benefit farmers, produce buyers and consumers.

Numerous entry points exist for business as irrigated value chains develop. ILSSI partners throughout the irrigated value chain with equipment suppliers, farmers, value chain cooperatives and SMEs to test and refine business models. Private entities implement market-based activities, while researchers analyze gaps and the impacts of market activity. Research shows high potential for business development in irrigated fodder, vegetable and [vegetable seed production](#). Evidence is being used to design interventions that will help to ensure benefits are spread across actors as the markets develop.

Fodder market and feed value chain studies in [Ethiopia](#) and Tanzania show considerable demand for forages as a cash-crop. Trading irrigated forage can be profitable for smallholder farmers. It can also help reduce environmental pressures from unrestricted grazing. Income is generated through forage sales on emerging fodder markets. Some fodder producers also gain income from increasing the milk and meat productivity of their own livestock.

Access to nutritious fodder as a supplemental feed, enabled through irrigation, also helps to ensure healthy draught animals in the dry season. Increased incomes, through sales in the irrigated fodder value chain, can in turn result in greater household [dietary diversity](#) and [improved nutrition](#), while also supporting enhanced livestock and human nutrition in the wider community.



Bustling fodder market enhanced through irrigation, Ethiopia
Photo: Aberra Adie/ILRI

Appropriate, affordable finance solutions are key to enabling smallholder farmers to profitably irrigate

Access to suitable financing is [a primary barrier preventing smallholder farmers](#) from investing in SSI, but credit dynamics are complex. ILSSI research shows there is a strong demand among farmers for irrigation technologies, motorized or solar pumps, and other agricultural water management tools. Although the potential [profitability of irrigation](#) is [clear](#), the costs of SSI may only be viable for smallholder farmers through improved finance tools. Supply-side factors, such as limited access to credit or high costs of borrowing, place constraints on farmers but [recent research in Tanzania and Ethiopia](#) shows that demand-side credit constraints, such as risk-aversion, financial illiteracy, and high transaction costs, are equally important to address.



Solar powered pump for home garden irrigation, Amhara region, Ethiopia
Photo: Mulugeta Ayene/WLE

ILSSI is working with irrigation equipment companies and other private entities to explore the potential of different finance approaches [within different business models](#). Examples already being piloted include asset-based finance, lease-to-own, and seasonal repayment plans. Simultaneously, information technology is reducing the costs and risks of offering finance to farmers in remote areas. Through these collaborations, ILSSI aims to better match finance products with the needs of different market segments of smallholder farmers, including women and youth. Fostering greater [awareness of the limitations of finance](#) in the agriculture sector can also help to shape the design of new, appropriate finance mechanisms to minimize default risks.

Supporting water and natural resource sustainability is in the interests of the private sector

Private companies have a stake in the sustainability of water, and other natural resources, as SSI is scaled. Water availability in the medium to long term will determine the business prospects for irrigation-related enterprises. Increased water scarcity could jeopardize markets for irrigation inputs as well as the supply of irrigated produce. Negative impacts of intensified production under irrigation may also reduce the quality of water and erode soil health. Yet private companies often lack the tools and resources to fully analyze when and how to best develop irrigated value chains in ways that remain within natural resource boundaries. Access to information on water resource availability, use and quality in a changing climate also continues to be challenging. ILSSI aims to better understand the information needs of private sector decision makers, while also providing research-based evidence to support

sustainability of irrigation-related investments. Partnerships between research, public and private sectors create opportunities to fill data gaps that will enable better resource management and governance. The International Water Management Institute has developed an [interactive, online tool](#) that supports users to identify suitable areas for solar-based irrigation depending on water sources and pump characteristics. The tool has been refined with data and other inputs from private companies. Solar pump supply companies have provided data from pumps in the field, enhancing accuracy. Numerous for-profit entities also shared their information needs on water resources. Overall, private sector contributions have helped to ensure the tool is relevant and useful to companies as they explore emerging markets for irrigation.



Fostering information exchange on farmer-led irrigation, ILSSI multi-stakeholder dialogue, Addis Ababa
Photo: Petra Schmitter/IWMI

Multi-stakeholder dialogue helps create links between actors, as well as fostering innovation and knowledge exchange on how best to expand profitable, farmer-led, small scale irrigation

Fostering information exchange is central to market and food system innovation. ILSSI convenes [multi-stakeholder dialogues](#) on farmer-led irrigation in [Ethiopia](#) and [Ghana](#) and is working to expand these sharing platforms in other countries across Africa. [Dialogues create spaces](#) that bring together representatives from the private sector, government agencies and Ministries, research organizations and universities, and agricultural value chains, to catalyze change around specific challenges. These platforms provide

an umbrella for coordination and adaptive learning across actors and sectors. They provide opportunities to share recommendations, best practices and institutional innovations on agricultural water management. This integrated, multifaceted engagement approach enables those involved to gauge scaling opportunities (and constraints), jointly examine potential solutions, and work together toward the shared [benefits of expanding farmer-led irrigation](#).

Irrigated value chains hold many opportunities for innovative entrepreneurship

Identifying, creating and supporting opportunities for entrepreneurial SSI-related service provision has the potential to improve access to technologies and to generate new income streams in irrigated agriculture. There are numerous opportunities for the private sector to foster [innovation and entrepreneurship](#). For example, many irrigating farmers across sub-Saharan Africa and Southeast Asia already rent pumps or pay pumping service providers. Business models where entrepreneurs offer irrigation services, such as ‘[uber for irrigation](#)’, could enable small scale farmers to secure the advantages of irrigation equipment while also generating income for irrigation service providers. Through research on business models with private companies, ILSSI aims to identify how companies can foster opportunities for rural youth through employment and entrepreneurial enterprise.



Diverse business models can support irrigation-pump service provision, Ghana
Photo: Joe Ronzio/IWMI

Private sector actors can be central to boosting inclusive and more equitable access to irrigation

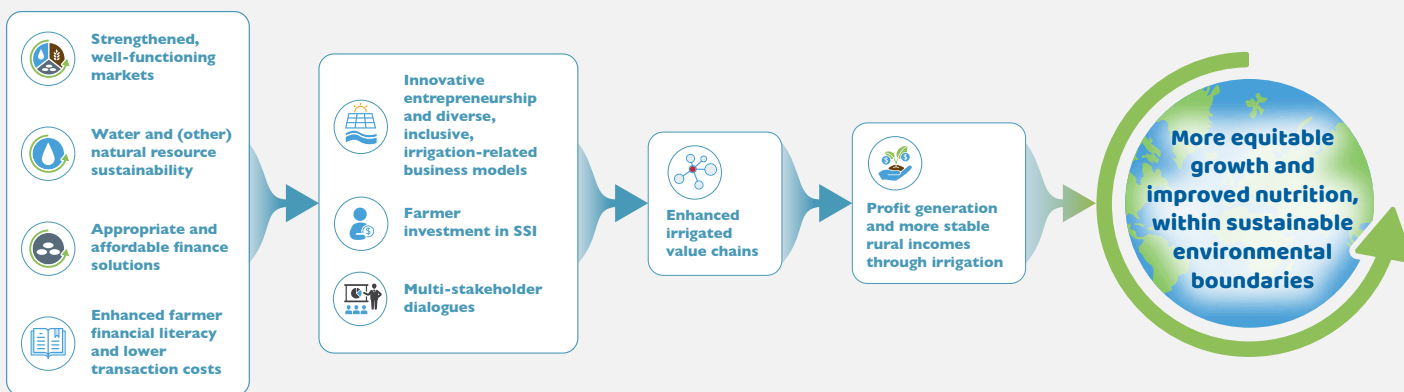


Manual pump supplying water for multiple uses, Ethiopia
Photo: Apollo Habtamu

Many smallholder farmers, particularly women, are excluded from effectively accessing SSI technologies, production, and markets. At the same time, product and service businesses are missing out on this significant customer segment. Private sector business models often exclude resource poor farmers, [especially women](#). Yet women play a key role in farming and agriculture-linked value chains in rural communities in many African and South East Asian countries.

[Women](#) and households could [greatly benefit](#) from improved access to irrigation through gains in income, nutrition and empowerment. However, many smallholder farmers, particularly women, [face specific barriers to access SSI technologies](#), decision-making, and markets. Applied research shows that private companies on their own often lack the information to customize their strategies to reach this distinct customer segment. A market system approach will [require targeted approaches and tools to reach resource poor farmers](#) and to achieve the potential of benefits of irrigation. At present, product and service businesses often lack inclusive business models that would enable more smallholder farmers, notably women, to invest in irrigation technologies.

ILSSI is collaborating with private sector actors and cooperatives to promote [better understanding of the constraints to inclusivity](#) and equity as SSI expands. In addition to gender responsive business models, ILSSI and private companies are jointly testing inclusive marketing and credit scoring approaches. [Guidance for inclusive irrigation interventions](#), developed by ILSSI partners, is helping companies and social enterprises reach women and other resource poor farmers in new SSI technology markets.



Links to these publications, and other resources, can be found here: <https://ilssi.tamu.edu/knowledge/economic-growth/>

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