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


*Irrigated vegetable producers, Ghana*
*Photo: Team 1000/Timothy Adei*

## Feed the Future Innovation Laboratory for Small Scale Irrigation (ILSSI)

## Vision

**Increase profitable, sustainable and gender-sensitive irrigation to support inclusive agricultural growth, resilient food systems, and nutrition and health outcomes, particularly for vulnerable populations.**

## Challenge and focus

ILSSI's challenge is to identify how to expand the use of small scale irrigation (SSI) – such as improved adoption rates and inclusivity of adopters – in an economically and environmentally sustainable way. ILSSI research through 2023 will focus on generating evidence for effective scaling and increasing inclusive access, for women, youth and resource poor farmers, to sustainable small scale irrigation and its benefits. Evidence will also be generated on SSI in the context of improving social and ecological resilience.

## Planned activities

Future activities will integrate scaling partners with an emphasis on private sector actors. Through a global competitive process, ILSSI intends to identify private sector partners that are major actors in the irrigation technology supply chain, particularly those with an interest in developing markets in Ghana and Sub-Saharan Africa. The project will also ensure continuous engagement with other key actors.

## Indicative plans (2019-2020)

- Consult with USAID Mission, Feed the Future projects and national stakeholders
- Commercialization supply activities:
  - Initiate dialogue process with private sector actors (interviews, event)
  - 'Netmap' with private sector actors (e.g. technology manufacturers, importers, distributors; financial services) to identify general and spatial linkages, roles and gaps in the technology supply chain
- Socio-ecological resilience activities:
  - Spatial assessment on the suitability for different SSI technologies refined
  - Initiate systems level assessment of SSI scenarios on climate change and resilience
- Nutrition activities: outreach with stakeholders on irrigation – nutrition linkages
- Inclusivity, gender and resilience activities:
  - Adapt SSI gender toolkit for use by private sector and other projects
  - Implement experiential approaches to improved local resource management to increase resilience and inclusivity
  - Build on earlier USAID investment in community resilience and natural resource management in Ghana
- Commercialization and scaling activity:
  - Survey irrigating producers on demand and incentives for investing in SSI technology within the high-value horticulture value chain

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## Building on existing research toward scaling solutions

The proposed research will build directly on ILSSI results from the past five years, some highlights were mentioned in the The Global Food Security Strategy (GFSS) Ghana Country Plan.

*Irrigating maize by hand using a petrol pump, Ghana. Photo: Nana Kofi Acquah*

## Key messages from research (2013-2018)

### Ghana has high potential for expanding SSI

- Around 211,000 ha is economically and biophysically suitable for SSI in Ghana. Available water resources can meet irrigation water requirement in most (~68%) of the suitable land: Water quality is suitable for irrigation
- The former Northern Region (currently comprising of Northern, Savannah and North East Regions) has the highest potential
- Around 690,000 smallholder farmers can be reached
- Motorized pumps are profitable with high value vegetables. Solar pumps are a promising technology

### Benefits of SSI improve income, nutrition and livelihoods

- Net profit directly to farmers of USD 285,000,000 per year
- Business case analysis points to profitability
- Irrigation is positively associated with household dietary diversity (economic access to foods) driven by income increases and production changes. Increased consumption of meat and vegetables comes largely from producers' own farms

### Addressing constraints to outcomes and commercialization

- Irrigation in its current form is important but not sufficient to dramatically improve nutrition or livelihoods
- Irrigation expansion is severely restricted by labor intensive, traditional methods:
  - Buckets are the main method of obtaining, lifting and applying water - 86% of irrigators
  - Only 10% of irrigating households in surveyed area use a pump, of those, only 25% own it
  - Bucket irrigators can only irrigate small plots of land and grow crops that consume less water
  - Irrigation is nearly monocropped (onion), reducing potential benefits
- Majority of farmers involved in irrigated production lack access to any form of credit (formal and informal). Existing financial products are not suitable for irrigated production investment
- Women are notably disadvantaged in access to and benefits from SSI. Access will need to be more inclusive to achieve potential for area and numbers of farmers to benefit
- Technology supply market is underdeveloped, lacks support to develop in a suitable way to meet demand:
  - Few importers, manufacturers or distributors
  - Most equipment is not available outside of major markets
  - Services and products not bundled with credit options
  - Little after-sales service is available
  - Market is shifting towards cheap, low quality pumps, equipment and materials
  - Established companies struggle to compete with suppliers that do not pay tariffs/taxes and who offer sub-standard products

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