

# Feed the Future Innovation Lab for Small-Scale Irrigation: Ethiopia

Proceedings documentation

Addis Ababa, 18-19 June 2014



*"The Feed the Future Innovation Lab for Small-Scale Irrigation works to enhance food security and reduce poverty by developing and introducing gender-sensitive, small-scale irrigation systems into food and agriculture production on small farms."*



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## Executive Summary

The two-day annual stakeholders' meeting of the Feed the Future Innovation Lab on Small Scale Irrigation (FtF ILSSI) had over 45 participants representing both new and continuing stakeholders from government, the national research system, private sector and international centers. A highlight of the meeting was an opening presentation by H.E. Ato Sileshi Getahun, State Minister for Natural Resources, Ministry of Agriculture. The first half day of the meeting was a summary of progress and future plans for FtF ILSSI. The ensuing one and a half days were devoted to interactive sessions to gain stakeholder inputs on progress and plans. The planned irrigation interventions resulting from the PMC meetings were presented and generally endorsed. Stakeholders encouraged broad representation in the research of farming systems across Ethiopia. They noted the importance of both related industries providing inputs for the total production system and plans for marketing as part of a total value chain analysis. There was active support for the training programs with strong stakeholder interest in local and farm level training as well as the more general training for researchers involved in the projects. Training includes a combination of didactic training, experiential learning for Ethiopian graduate students participating in the research and farm-level technical training and demonstration. There was strong interest in ensuring gender issues were addressed in the application of new small scale irrigation technology and on the effects of innovations on family nutrition. The importance of involvement of young professionals in training and participation in the program was stressed. Stakeholders appreciated the opportunity for highly interactive engagement and that the implementation plans for the FtF ILSSI interventions were highly consistent with their previous recommendations.

## Background

FtF ILSSI is a five year, \$12.5 million USAID cooperative agreement involving assessment of recent innovations in small scale irrigation innovations to select candidate technologies for further evaluation in field studies in Ethiopia, Ghana, and Tanzania. Opportunities and constraints to successful adoption of these innovations are being defined and training for their application at regional and local levels is being undertaken. A demand driven process involving active and ongoing stakeholder engagement is being used to select the small scale irrigation technologies to be studied. Texas A&M University System's Borlaug Institute for International Agriculture is the lead institution along with the CGIAR's International Water Management Institute (IWMI), International Livestock Research Institute (ILRI) and International Policy Research Institute and North Carolina A&T State University. The agreement was primarily launched in January 2014. Year one of FtF ILSSI is directed mainly to planning the program with initial emphasis on Ethiopia as the focal country.

## Objectives

FtF ILSSI is a research project, which is demand driven in its objectives and approaches. Therefore, a principal goal of the annual stakeholder consultation was to provide a general awareness of the scope and expected outcomes and to obtain feedback from the project's External Advisory Committee (EAC) and the Ethiopian stakeholders. More specific objectives include:

1. Stimulate discussion about FTF ILSSI at the policy level
2. Share operational plans, including first year activities to-date and plans for the remainder of year one and year two

## Participants

Participants of the annual stakeholder consultation came from research and academia, non-governmental development organizations, relevant ministries of the Government of Ethiopia and the private sector. A list of registered participants is available in Annex 1 of this report.

## Consultation Proceedings

### Opening

The consultation was officially opened with a presentation by the Honourable Minister H.E. Ato Sileshi Getahun, State Minister for Natural Resources, Ministry of Agriculture. Media coverage of the speech can be found in Annex 2.

### Day 1

#### Overview presentations

Neville Clarke of Texas A & M University and lead of the ILSSI project provided a general description of the project and the five year vision. The presentation included the USAID approved five year project plan including broad objectives and outcomes and FtF ILSSI relationship to the USAID Feed the Future goals.

Simon Langan, Alan Duncan, Nicole Lefore prepared a presentation on the stakeholder engagement process of the project, summarizing the demand driven approach used in planning and identification of interventions and locations for field studies. This also included a review of the Ethiopian stakeholder workshop held January 20, 2014 and the recommendations made by stakeholders that provided a guide to the project in setting priorities and development of work plans.

Neville Clarke provided a summary of progress in the first year, which was directed to planning the activities of the Laboratory for its remaining four years. That was followed by a presentation on the project's plans for the second year by Nicole Lefore.

The consultation then moved to participatory sessions to ensure robust discussion and integration of stakeholder needs and opportunities into the project plans.

#### Group discussions

**Assignment:** Work in small groups and then report back to plenary on the following:

Q1: What else would you like to know about ILSSI?

Q2: What are potential (related) on-going initiatives and projects?

#### **More information:**

1. What is the definition of SSI/small scale? What scale of operation? What criteria?
2. Sustainability of interventions of ILSSI – what mechanisms on the ground for sustainability?
3. What is meant by 'Lab' in ILSSI?
4. How will this be integrated with other projects, e.g. IFAD-PASIDP and other projects working on SSI?
5. Where are the locations/sites for the project in Ethiopia?
6. Who will lead the project at national and regional level – which government institution is it linked to/led by?

7. How will the project support VC actors?
8. What is the limit of the project?
9. Who are the major stakeholders included?
10. What was the site selection criteria? Are they AGP woredas?
11. What are the similarities between ILSSI and LIVES – overlaps and differences?
12. What are the end-products of the project that will benefit farmers? Are these academic or is there something to bring to farmers?
13. Will project work with farmers who already have SSI tech or not?
14. Research methodology –will you be able to capture VC and who are the actors in the value chain? What method will be used to engage actors?
15. Micro dam revitalization – they are underperforming and how could we get more efficiency?
16. How can we understand the complexities of the sector and the reality on the ground? Not so easy to achieve the vision on the ground against the ideal plans.
17. Capacity building – what can we provide to new water centre at Addis Ababa University?
18. Risk perception by farmers – are farmers running to get or are they waiting to see how it works for others? How is this issue related to our roll out?

### **Related projects:**

1. Irrigation and Energy would like to be involved, but depends on scale of interventions
2. IFAD as partners (PASIDP) (multiple mentions)
3. Africa RISING (multiple mentions)
4. FAO SSI
5. AGP
6. SLM
7. iDE
8. ATA focuses on training and capacity building, but don't provide pump or fertilizer; link to other project that does provide materials. ATA works in 21 AGP woredas. Have done a baseline study already and we have one site in common already.
9. Pastoral Community Development Project (World Bank)
10. SI Labs project (USAID)
11. EADD (E Africa Dairy Development) Project in TZ

### **Comments:**

- Need more material on the project to understand it better
- Gender imbalance – low representation of women
- Farmers might not benefit from SSI in AGP areas
- Irrigation (SSI) technologies require high energy (labor?) and SSI might not be good for small farmers
- Beyond Ethiopia – TZ and GH be aware of new irrigation policies and important to feed into those policies. SRI big in TZ and ILSSI should look into this.
- Irrigated fodder is new concept; new potential. Consider as not just feed but source of income.

### **Replies**

1. Aware of under-representation on women, waiting for some instruction USAID (positive discrimination allowed); learn from other projects on how to get women more engaged (including female headed HH)
2. Allan Jones will put a draft before group on SSI definition
3. Will link with ATA on SSI
4. Sustainability of interventions – key part of our assessment – when are interventions adoptable and then sustainable – how paid for and implemented – being addressed within the program
5. IFAD – we will engage with IFAD
6. Share site selection criteria; have not finalized all sites yet but will share later on those we are fairly confident on
7. On leadership, IWMI and ILRI lead overall in this section, with TAMU overall project lead; at site level, look for national representatives. E.g. BDU will lead in Robit.
8. Support to VC – link to LIVES which is looking at various points on VC; interventions are not just biophysical
9. Name was given to us by USAID – Innovation Lab series and this is one on small scale irrigation
10. Core partners (TAMU, NCAT, IWMI, ILRI, IFPRI + national partners in each country)
11. There is only so much we can do with our resources so we need to link across to LIVES. They are working in mostly non-AGP sites so will work across with them.
12. Benefits to farmers – that is what we are all after. Looking at out-scaling interventions
13. Labor intensiveness varies by pumps – look at energy sources and trade-offs
14. Will improve our communications and try to find ways to get to you off-line (e.g. hardcopies of briefs)
15. Farmers will include those who are already exposed and those who have never tried irrigation technologies
16. Methods to engage. Central to IWMI, ILRI and IFPRI. Engage in planning design, cap dev, and in modelling. So engagement across all elements using variety of methods.
17. Micro-dam revitalization – don't have an answer. Not covering at moment and won't be covered in the first year. If it is increasing issue over years 2-5, look at an intervention on sand dams and MUS.
18. Taking time to plan in recognition of complexities.
19. Engaging with farmers. Could share newsletters with farmers in Amharic and possibly other languages, but have not got to that stage of planning yet.
20. Cap dev links – more than happy to develop links with institutions.
21. Cross country learning – important point. What can we learn from other countries working in?
22. Are thinking not just of water but of NRM.
23. Will provide a report on this meeting to everyone with contact details to continue networking.

### Bus stop on proposed interventions in Ethiopia

**Objective:** Get feedback and input from participants on proposed field level interventions in Ethiopia

## ***A. Piloting water lifting irrigation technologies and institutional arrangements***

Discussion led by Gebrehaweria Gebregziabher (IWMI) and Nicole Lefore (IWMI)

### **1. Where does this technology (lifting technologies) already exist?**

- Motor pumps are found in most regions; level of pump use varies with capacity (household level for smaller pumps to communal level for larger). More common on rivers (Tigray, Amhara, Oromia, SNNPR).
- Rope and washer pumps common in Rift Valley.
- Wind pumps in Rift Valley; water supply (domestic use)
- Solar in Amhara (domestic use)
- Treadle pumps were promoted with water harvesting structures across multiple regions
- Well with bucket and pulley is most common throughout country
- Testing wind and solar in Ziway.

### **2. How can we accelerate this option – constraints to rapid adoption?**

#### a) Constraints

- Maintenance
- Spare parts
- Skill levels in repair and use
- Costs high (fuel price, initial investment cost)
- Low quality and numerous variations/no standards
- Some require high labor (treadle, rope and washer)
- Some do not cover a large enough area (treadle pump)

#### b) Acceleration

- i) Capacity development program along the supply chain.
  - led by (MoA/BoA, Mo Youth and Sport); some NGOs do this (e.g. iDE)
  - training of trainers at Bahir Dar University and they are going to lower levels
  - MoA/BoA employ experts for this (backstopping?)
  - pump repair training, start up capital and tools
  - some woredas in Tigray; expanding to Amhara and other regions
  - government is importing pumps under the program
  - iDE also does training and support on irrigation value chain
  - Need to train many youth because they move once they have skills and incomes rise
- ii) Credit and purchase arrangements to make it more accessible.
  - Cooperatives are linked with micro-finance institutions (Decci) to purchase pumps
  - Tigray has pump rental arrangements; rent to neighbors when they are finished with pumping on own plots
  - Rift Valley find groups that buy diesel pumps to use in common and also rent out; in high value vegetable growing areas.

### **3. Who would be good partners?**

- ATA: Study on pumps (based on survey) on type, availability etc. Found availability is low. ATA has proposed the first affordable pump standard that will be in force as of July 2014. Still looking at tax issues and that is not finalized. Now preparing an evaluation of the first 8 months of project on capacity development
- iDE has lessons on past projects. Rope and washer for poorest of poor (no land, no capital); more willing to invest labor required and manage lower investment cost. Limited depth: does not work if water below 12m. Similar lessons for treadle, which has even more limited depth at 5m. Lessons on giving credit for treadle that was then used for other pumps.

## **Ghana and Tanzania notes**

- ASDP-TZ (supported by World Bank): project design included training and spare parts supply development; not known if this has been implemented
- Ghana solar pump (photovoltaic) trials: not cost effective and water quantity not enough

## ***B. Integrating Fodder***

Discussion led by Alan Duncan (ILRI)

### **1. What are the existing initiatives?**

- ICIPE – Push-Pull Technology on irrigated plots
- Irrigated forages at FTC of Yaya gullele in North Oromiya
- Irrigated Alfalfa on the private land in Tigray – LIVES woreda
- Lesson from Nile Delta irrigated Alfalfa/Clover production
- Well water for irrigating Sesbania at Robit
- Sesbania irrigated at Antsokia valley – historic
- New commercial initiative in Awash – GIZ
- Genesis Farms –private farm in Debre Zeit irrigates Alfalfa, Napier
- Eden Field irrigated forage (12-13 different species) seed production a Meki, Awash Melka, Ataye
- Irrigated Desho grass in Wolaita, Durame – SNNPR
- Alfalfa fodder –corn silage
- Elfora Alfalfa production at Hawassa - Gebru to follow up
- Supplemental Irrigated Cactus in Tigray
- Vetch/Maize irrigated crop for dairy in Tigray (Samre Seharti village)

### **2. Constraints and Opportunities**

- Incompatibility of irrigation technologies (placement within the farm)– vegetables vs. fodder
- Scarcity of land – competition between fodder and vegetables
- Lack of research on economics of irrigated forages
- Seed supply - quality and distribution
- Too much free hand out of seeds by NGOs
- Affordability of technologies – works while inputs are provided for free but not after – credit arrangements or rentals, quick returns and cost of seeds are to be considered
- Social impacts -example for women: Implication of defaulting on loans, opportunity for women with proper training
- Need for SACCO's – explore options
- Water availability
- Out markets for dairy and beef
- Market uncertainty for forage seeds
- Lack of awareness
- Community empowerment for common property resource initiatives
- Depletion of common water resources
- Servicing/maintenance of pumps
- Matching pumps to resources

### **3. Partners**

- IDE



- PCDP
- MoA

*C. Demonstrate in-situ rainwater harvesting, and soil fertility management technologies (e.g. application of CA principles) – through roof water harvesting and kitchen gardens with different application methods (including institutional arrangements)*

Discussion led by Claudia Ringler (IFPRI)

1. Not clear if in-situ RWH + CA and roof top RWH should be one single intervention, thus the first bus stop focused on RWH with kitchen gardens and the second on RWH + CA
2. **EXISTING—Rooftop RWH+ kitchen garden**
  - Rooftop RWH exists in pastoral areas, where it sometimes rains only 3-4 days and not for a very long time; they then store the water underground in cement tanks; Rooftop RWH sounds of interest for urban agriculture; should we used with fruit trees, not just veggies (the pic only showed veggies)
3. **PARTNERS—Rooftop RWH+ kitchen garden**
  - ATA, IFAD, MOA [not clear if IFAD will work on SSI much longer, and ATA is actually not interested in trying out rooftop RWH in their 20 woredas]
  - The Kenyan example was discussed where rooftop RWH + underground tanks are/have been used for SSI [P.R.]; Kenya is also known for having very large plastic storage tanks for rooftop RW [but they are not used for SSI]
4. **CONSTRAINTS—Rooftop RWH+ kitchen garden**
  - Not everyone has corrugated sheet roof (41%)
  - Storage tends to be very expensive
  - Rooftop too small for water to last through dry season (thus maybe drip, but then maybe rodents)
  - KG are low priority compared to drinking and other HH uses, but then filtering is needed [EHNRI will let us know about current rates of water treatment in rural ETH]
  - Other diseases [malaria, water quality issues..]
  - Market prices might drop
5. **In-situ RWH + CA**
  - Exists “everywhere”, highly profitable, but only in the rainy season –how to extend to the dry season?
  - Not efficient? Not desired?
  - Competes for biomass with livestock
  - Weed control
6. **Other points raised**
  - Fish ponds in farmers fields to grow azola
  - Drip was tried in Tigray but not taken up despite microfinance, people were not interested
  - Instead of rooftop RWH, kitchen gardens should be connected with shallow wells (this is what ATA is doing, but the comment came from someone else
  - AT&T university affirmed that the full intervention as specified on slide 1 was doable in one go

*D. Shallow groundwater recharge through increasing infiltration to deeper soils*

Discussion led by Simon Langan (IWMI)

From an initial hypothesis that greater infiltration of water into soil and recharge to shallow groundwater during the rainy season would improve soil moisture and provide a source irrigation and other uses. This shallow groundwater would accumulate within local hollows in the topography. A point of entry to test this and enhance this process is to break up the sub-surface hard pan in soils through the use of manual or mechanical disruption or biological through use of deep rooted trees.

### **Build on existing initiatives**

- A number of related and existing or past techniques or projects should be considered. The main ones which were mentioned were:
  - Fruit trees in Tigray
  - “Tenkarakind” (ploughing technique)
  - Cactus/ Sun project (Tefaye of EIWR used to be part of)
  - Asia/India experience (Amare/ Philip)

### **Alternatives/ additions**

- In addition to proposed interventions would it be possible to undertake a short review of alternative interventions, such as:
  - Use of Exclosures
  - Percolation pits
  - Deep trenching
  - Lining of trenches for more immediate storage and use of water.

### **Context**

- Participants made the comments that the work and interventions needs to be within the context
  - Land Use Planning
  - Cropping Type
  - MoA and wider drive towards use of mechanization in agriculture

### **Potential partners**

- ICRAF
- IFAD

### **Reflections on Day 1**

**Objective:** To synthesize key points discussed on Day 1 as a basis for Day 2 discussions.

- Interaction on progress on project. What happened in Eth, Gh and plans for TZ. Got ideas on technologies, where they exist, issues related to scaling up.
- Liked the bus stop approach, first time to experience and really liked that.
- Looked at what is happening in the different countries; obvious that Eth has gone quite far. Looking at site selection and why, links to other projects and USAID. Looking at FtF projects and collaboration. We can learn for the Ghana work.
- Remember the bus stop – trying to look at what else exists out there and how to form synergies; interesting. New to irrigation so learned about methods and everything.
- Direction became clearer. Able to identify sites and able to see distinct interventions (target of the bus stop).

- Felt very positive about what developed yesterday. Process generated a lot of interest and shared awareness of what opportunities were. Expected that all walked out realizing challenges with greater energy to meet that. Felt good about the process.
- Quite happy with what happened and what I heard, how stakeholder consultation and engagement was done. Had good insight from exercises. It is a good base and indicator that we can do something important.
- Heard international experiences about RWH and garden working, but Ethiopians did not think it would work.
- State Minister taking time to make a presentation, which coincided nicely with overall agenda of the project.
- Need to recognize that this is research and not development. Crucial role of the market, value chains, coops vs. water user associations, simple cost-benefit approach.
- Nobody rubbished what was proposed and just refinements, so that was encouraging. People were positive and very willing to engage. And endorsement from Minister of NRM was helpful. Can also begin to see the synergies between other projects and partners so not working by itself.
- From a livestock background and forages, SSI start-up cost are high so risk, early barriers to getting into it. This potentially excludes some of the intended beneficiaries, the poorer farmers.
- When I heard of fodder and irrigation for Ghana, thought it would be impossible. Did not make sense for Ghana, but with discussions with others now it makes a whole lot of sense. There is some kind of market for forages. If we push it, even though many people are not thinking of it, I am sure people will take it up strongly.
- Irrigated forage also had not been thought of in TZ. Could see that where there are markets. So we have started that innovative thinking.

## Day 2

### Bus stops

**Objective:** Obtain feedback around critical issues related to the potential interventions that the project partners should consider.

### Questions proposed for each group:

1. Gaps – are there key SSI interventions that we have missed? (Simon)
2. Gender dimensions – how does SSI and gender intersect –positively and negatively? (Nicole)
3. Nutrition/MUS e.g. drinking water – how can SSI interventions improve household nutrition – which are the most promising options (Claudia)
4. Environmental externalities – what are some of the potential negative impacts of our interventions e.g. landslides, soil erosion/sedimentation, dropping water table, salinity (Biniam)

### A. Key SSI interventions that the project may have missed

- Greater consideration of value chains to address issues of seeds, soil fertility, post-harvest management of both the water and the agricultural products, market and etc.
- Local institutions that can support and run the systems needs to be identified and supported

- Issues of scale in terms of connectivity between upstream and downstream community, watershed management, mechanisms for land and water related conflict resolution needs to be considered
- Communication is an important issue for success of the project. There is a need to create learning networks and platforms and establish appropriate communication mechanisms.
- The intervention can consider technologies such as mulching and conservation agriculture
- Capacitating farmers for value addition at farm gate
- Interventions should be from farmers' perspectives: our role is to provide alternatives and to capacitate farmers
- Institutional economics of scale for inputs and outputs should be considered where it is possible and this may involve organizing farmers in the form of producers cooperatives
- The idea of control village in the methodologies for experiment is criticized for the fact that we have no control over the control farmers. The best is to compare the impact before and after interventions.

### *B. Gender and SSI*

- **Disincentives to women:** possible increased labor and time, may not control income, do not own land, not involved in planning, technologies may not be good for women, women are often not allocated adequate water in schemes; need to consider the opportunity cost, particularly if irrigation is in dry season
- **Potential positive incentives:** credit schemes particularly designed to women, technology that reduces labor, packages that include other inputs (fertilizer), increased role along various value chain activities (increasing control over income from irrigated crops), positive discrimination for women in communal schemes. Incentives could include MUS (reducing water carrying).
- Incentives are more difficult with household level SSI where more difficult to intervene in household balance of power. **Intervention might explore** household approaches that facilitate planning of NRM and household finances.

### *C. Nutrition*

#### **Positive linkages**

- SSI increases food production, thus increases nutrition directly (4)
- SSI through sale of additional food produced allows households to buy more nutritious foods (4)
- SSI generally is used for more nutritious foods (veggies/horticultural products) (4) [-> important to check the micronutrient content of ETH veggies and fruits, Ethiopian Public Health institute has a list]; SSI also used for irrigating maize and pulses
- SSI allows to produce food in the lean or dry season, supporting nutrition (3); SSI allows stability of production across the year, supporting nutrition (2)
- SSI thus allows to fight direct (calories) and hidden (micronutrient malnutrition and environmental enteropathy) hungers
- SSI good to water livestock (2)
- SSI increases the likelihood of drinking water availability at the household and thus reduces time burden for women (but water needs to be filtered) (3)
- SSI increases the likelihood of water for other household uses (washing/bathing, etc.), that water can then be reused for kitchen gardens
- SSI increases the likelihood of improved sanitation and improved hygiene behavior (not known)
- SSI supports accelerated/more raising of small ruminants through irrigated feed, leading to more income from SSI and leading to more milk production and thus more nutrition (2)

- SSI can support fish ponds (2)
- SSI can support flower production, which supports bee production
- Through all this SSI improves animal (draft animal) and human labor productivity (2)
- SSI improves quality of agricultural products
- SSI provides a stable water supply in the dry season for non ag uses

#### **Negative linkages**

- Malaria? (3)
- Schistosomiasis? (2)
- Contamination of drinking water through pesticides and fertilizers (2)
- Parched aquifers
- Unwanted species
- Wild animals show up
- Siltation
- Labor?
- Fish production in lakes will go down due to water quality problems (water hyacinth) and as water is pumped out (directly or indirectly), and lake levels drop
- Pests and diseases for animals and humans
- Can increase women's burden (e.g. bottle drip in some countries increased women's burden as they had to fetch the water from far)

#### **Other points on nutrition**

- To get nutrition benefits out of SSI it is important to couple the intervention with nutrition education
- Bias against kitchen garden (when water is available, it will first be used on cash crops—is this a gender bias issue?) (2)
- Pilot with different crops
- Roof catchment is too small

### ***D. Environmental Externalities***

**What are some of the potential negative impacts of our interventions e.g. landslides, soil erosion/sedimentation, dropping water table, salinity?**

- Positive impact from the project
  - Project (especially IDSS model) considers sedimentation, recharge etc.
  - Small scale focus, so less impact on negative impacts such as fertilizer/chemical pollution
  - ILSSI's focus on sustainable intensification via irrigation will help in taking out marginal lands that are susceptible to negative environmental externalities
  - By making rural areas productive, ILSSI's project goals will help reduce negative impact related to issues such as migration to urban areas
  - Labor intensive SSI can create jobs and enhance the economy which will directly and indirectly lead to positive environmental externalities
- Negative impacts and some proposed solutions:
  - What will be the impact of introduced irrigated fodder on indigenous fodder, fruits?
    - Solution: introduce multipurpose forage crop and fruit tree
  - If SSI is in marginal lands, there could be negative consequences
    - Solution: crop rotation, IPM, organic farming etc.
  - Impact of mechanization on irrigated lands?

- Salinity impacts:
  - Utilize non saline sources of water
  - Do not over flood, utilize methods such as drip irrigation (although drip irrigation will also have its own salinity issues.....so use alternate irrigation methods, such as rotating sprinkler with drip to flush the salt)
  - Add organic fertilizers
  - After the fact, utilize lime
- Eutrophication problem (some sites near lake Tana have these problems, which might be ILSSI sites)
- Malaria problems
- Conflict of irrigable land
- Sedimentation problems in small scale irrigation: such as the case in Alemayehu lake where khat production degraded the resource
- Soil erosion if not conserved well
- Gender, and nutrition relationship to environmental externalities
- Size of water collectors, such as ponds, vis a vis drowning and malaria
- Policy, governance and institutional aspects of environmental externalities (e.g. in Ethiopia, if < 50 ha, environmental assessment does not need to be “detailed”)
- Sustainability of measures taken to ensure positive environmental externalities taken by ILSSI
- How does the overall goal, to increase production/development from such very small farm sizes affect environmental externalities?
- Drainage and water table decline problems in small scale irrigation (e.g. Vietnam case were the water table declined due to coffee production via SSI)

## Fish Bowl

**Objective:** Solicit feedback from the External Advisory Committee and other stakeholders

### Subjects to cover:

1. Gaps in project
2. Gender issues
3. Nutrition issues
4. Environmental externalities
5. Advice to project

### Feedback:

#### Control community/village

- Worried because if collecting data in control households or communities over a number of years, what are you going to compensate them with? They don't get anything from participating.
- Potential spill over effects and how to control for those in surveys and assessments.
- Level of technical/financial investment is unclear; pilot project so need to know what it will offer them and what is expected of them.

- Difficult to separate research and development, even though this is research. We are not clear who the stakeholders are that will be involved. Who in the communities will be involved, their role, compensation and how to ensure it is equitable in/for the community.
- Sample size – users and non-users (of SSI). Need to understand willingness to invest and how to create opportunity to see that investment brings opportunity.
- Ag Water Solutions is base for the project, which had relationships with the farmers and stakeholders so not starting from nowhere; building on those relationships and research.

### Farmers

- Implicit assumption that we can go straight to drip but the decision has to be the farmers.
- In training, not seeing a focus on farmers. Did farmers have part in selecting technologies and have they shared their difficulties? If only a few farmers selected to be in pilot, still need to ensure they have input. Same for getting input from government, to build on government structures for exit strategy.

### Value Chain (VC) and markets

- Stakeholders along VC that need to be incorporated and incremental steps along the VC and more actors along VC more impact on livelihood. May have to identify main VC in process, and see who the main actors are. [soil health management under irrigation, seed supply, markets, collective bargaining to enable econ of scale in market]
- How to involve the private sector in the VC – partners with producers to share risk and benefit
- ATA - Identification of high value crops. Tried to develop a selection tool. Gave to woredas. Is there a mechanism for this project to consider HVC. Market access big problem – cannot provide farmers with dependable market. Need to work on cropping pattern.
- Understand credit schemes. Can have terrible consequences if someone does not pay.
- Training in credit risk assessment. Interest rates high for non-traditional crops because not understood. Training on pump VC. Lack of spare parts. ATA has study on pump supply chain and pump standards. Insurance as part of schemes in credit.

### Nutrition

- Nutritional aspect not well emphasised in documents.
- What measures to increase nutrition if focus on cash crops? If focus on household consumption, then issue of sustainability. SSI usually for sale and not to consume so need to add some education/advocacy to go beyond increasing income; cannot assume they will eat the crops to improve nutrition.
- Nutrition – beyond food security. Producing more vegetable good, but utilization is a challenge. Where there is surplus production, there is also malnutrition. They sell and don't eat. Increased production does not equal improved nutrition. Nutritional education in pilot areas so it improves health and nutrition of household. Look at extension program, which is supposed to teach nutrition issues at kebele level – good to work with extension on that.
- Trend at country level to move from food to nutrition security. What is happening is that if people produce animal products, they take it to market (e.g. sell milk and then buy grains). Irrigation might produce nutritious crops, but how can ensure that there is improved household consumption? Need to uncover why the household does not prioritize nutrition.
- Possible to consider nutritional water productivity.

- Soil fertility management for vegetables. Nutrient intensive. Also soil hydrology. Can have worse outcomes if don't change practices under irrigation. Manure is very important.

### Institutional issues, socio-economic and cooperation issues

- Institutional policies and WUAs/cooperatives is important.
- Land consolidation across families to make investment costs more manageable.
- Collective vs individual. Advantages to looking at collective for incomes, reducing poverty, but also social element that can potentially be disturbed. Need to ensure the group linkages are protected so it does not disturb family structures.
- Collective action critical for irrigation, especially if using GW to avoid over abstraction. Need rules and schedules for abstraction to balance with needs. Ethiopia very interested in GW.
- By laws are useless if people don't understand them. ILO in TZ – tribunals trained in by laws.
- Governance of irrigation with respect to the various schemes. Need to incorporate these issues.
- What are the policy implications? Irrigation is ultimately influenced by the policies in the country. Will policy issues be addressed in the project?
- Market is important, but need institutional framework for marketing produce.

### Gender

- Women not interested in irrigation, because labor requirements. Need to delve more into the culture of each country to understand why men more interested (and why are there more men standing around me). Need to understand in order to balance your selection. Will there be selection bias to ensure women are in the pilots. If women earn more, then it is better for the home.
- Need mechanisms related to cultural issues. Why women not interested in irrigation?

### Impact, upscaling and out-scaling, outcomes (including capacity development)

- Worried because it is a small project with financial limits, but if we bring everything we think should be there then we lose the sense of what we are meant to achieve. We have to work within the framework and think about what is achievable and has enough funds.
- In R4D, trying to influence wider scene. Have not thought through outcome pathways. We need to begin to think about – how do we use the knowledge to bring about real change.
- Involving young professionals in project. Can bridge field and research.
- Support capacity building. Want to ensure the project will benefit farmers, including on things like crop selection.
- Speaks to out-scaling challenge. Some hazards ahead; extension services highly targeted on food security crops. This is an institutional and policy challenge. What extent are we talking about farmer to farmer extension? Very sustainable payment for extension service in Africa – e.g. Zambia.
- Once a year training may not be adequate. And focus is on professionals. Training on models but then training at site level with farmer based training.
- ToT in Ethiopia. Irrigation. Markets - cooperatives. Credit issue – scheme for loans. Need inputs. Target women.

### Models



- Take information out of field and put into models. Then don't have to take the time to go to many communities and can do impact assessment of the nutritional impact, labor requirements for family, impact on income. Policy maker will be interested in downstream effects – what it will do to increase or decrease erosion, silting.... Project is meant to benefit small holders, but also gives us bigger.... to learn from.
- “Junk in, junk out” Not clear on data quality. Need high quality data as input. Need quality control method. TAMU makes sure that IWMI provides good data; quality of data is checked.
- The project will not target a specific crop or tell farmer to grow a HVC. The model simulates what is already been grown on the farm, and then can advise on profitability.
- Reaching farmers through improving strategies of government giving them the models to make decisions.

### Environmental aspects

- How the project would try to mitigate some environmental costs.
- Interesting monitoring parameters. Understanding of efficiency – need to get over traditional views of water use efficiency. (IFPRI has done work on this.)
- The more people that stay in the rural areas, the less go to the cities, so reduces environmental costs of urbanization.
- Highlight on water depletion. Start providing technologies and other farmers adopt. Need to ensure that water is really available.

### Advice to project

**Objective:** To solicit advice from the EAC and stakeholders on strengthening the project

**Statement for discussion:** For this project to succeed.... (most important advice to project team)

### **EAC comments:**

Getachew: Nurturing the national partnership.

Saa: Constant stakeholder engagement and interaction.

Evelyn: Value chain approach.

Phil: Suite of monitoring parameters to track pilots; need to think through indicators.

### **Other stakeholder comments:**

- Gender and governance are key; won't succeed if not addressed.
- Get on ground, get hands dirty, make mistakes and learn from them – quickly.
- Ownership of community and local government.
- Strong institutional arrangements on ground up to national; strong and binding.
- Consider problems of end users; livestock and fodder crops integrated.
- Consider marketing aspect
- Remember that project is small and needs to stay focused and synergize with other irrigation projects.
- Exit strategy is needed for sustainability
- Low cost technology
- Participation of the community
- Scalability
- Need-based; local problems and local solutions

- Capacity of partners has to be built to make it sustainable
- Institutional learning approach; feedback to enable to adapt and learn from failures
- Means to put research findings on ground and M & E system
- Understand social context of beneficiaries
- Cost benefit analysis to ensure farmers will make money
- Involve young professional (women)
- Young women in kitchen gardens
- Need long term trajectory/view; have to involve next generation
- Learn from past and existing similar initiatives; don't repeat same thing
- We need to be committed and motivated on team
- Best varieties of food and fodder
- Empower local partners
- Select study areas on hydrology and market access
- Detailed information on cost sharing for farmers
- Remember this is 3 countries but need methods that can transfer across more countries
- Link irrigation with WASH
- We need clear impact pathways
- Maintain the level of engagement we have so far
- Knowledge from farm level to scale up for decision makers at different levels
- Hands on training

#### Last comments from EAC

- Phil: Synergy and not competition with other projects and programs
- Saa: Learning across 3 countries; learn from each other; actors from 3 countries should have opportunity to share
- Getachew: Sharing information to enable project to continue beyond 5 years, e.g. farmer to farmer extension, briefs in local languages targeting farmers
- Evelyn: Need listen to feedback as continue with planning
- And Simon as a project leader: Heard a lot of aspirations; we need to manage expectations.

## Evaluation

**Objective:** Get feedback on the quality of the stakeholder engagement and suggestions for future meetings to improve.

#### **Positives about this meeting:**

1. EAC, USAID, State Minister participation
2. Informative
3. Facilitation was good
4. Media attendance
5. Methods were good: fish bowl, bus stops
6. Interactive
7. Atmosphere positive
8. Logistics, food good
9. Presentations were brief
10. Lots of positive feedback for project

11. Networking opportunities
12. Exchanging experiences
13. Wide range of stakeholders

**What could be done better next time**

1. More representation from regions and/or communities
2. Farmer/community representatives; on the ground experiences shared
3. Communications/project materials provided to participants in advance
4. Invite more women and youth
5. Field visit on SSI

## Annex 1: Participants

No	Name	Institution	Title	E-mail
1	Aberra Adie	ILRI	CG Center	<a href="mailto:A.ADIE@CGIAR.ORG">A.ADIE@CGIAR.ORG</a>
2	Alan Duncan	ILRI	CG Center	<a href="mailto:a.duncan@cgiar.org">a.duncan@cgiar.org</a>
3	Amare Hailelassie	ILRI	CG Center	<a href="mailto:A.Hailelassie@cgiar.org">A.Hailelassie@cgiar.org</a>
4	Ato. Hailesellasie Worese	EMDIDI	Director General	<a href="mailto:haileweres2000@yahoo.com">haileweres2000@yahoo.com</a>
5	Ayele Sileshi	ATA HHI		<a href="mailto:hayelesileshi@gmail.com">hayelesileshi@gmail.com</a>
6	Barry Shapiro	ILRI	Senior Program Development Specialist	<a href="mailto:b.shapiro@cgiar.org">b.shapiro@cgiar.org</a>
7	Belachew Hurrissa	ELEMTU Intergrated Milk Industry	Board Chairman	<a href="mailto:belachew.elemtu@gmail.com">belachew.elemtu@gmail.com</a>
8	Biniam Iyob	USAID		<a href="mailto:biyob@usaid.gov">biyob@usaid.gov</a>
9	Charles Allan Jones	Texas AgriLife Research	Senior Research Scientist	<a href="mailto:cajones@tamu.edu">cajones@tamu.edu</a>
10	Dr. Asfaw Negassa		Consultant, ILRI	<a href="mailto:A.Negassa@cgiar.org">A.Negassa@cgiar.org</a>
11	Dr. Kindu Mekonen	ILRI	Africa Rising	<a href="mailto:k.mekonnen@cgiar.org">k.mekonnen@cgiar.org</a>
12	Dr. Peter Thorne	ILRI	Project Coordinator, Africa Rising	<a href="mailto:p.thorne@cgiar.org">p.thorne@cgiar.org</a>
13	Dr. Seifu Admassu	Bahir Dar University		<a href="mailto:seifuad@yahoo.co.uk">seifuad@yahoo.co.uk</a> <a href="mailto:satadm86@cornell.edu">satadm86@cornell.edu</a>
14	Dr. Solomon Desta	MARIL	Director	<a href="mailto:solomon.desta82@gmail.com">solomon.desta82@gmail.com</a>
15	Dr. Solomon Mengistu	EIAR, DZRC	Senior Researcher	<a href="mailto:solomonmgt1@yahoo.com">solomonmgt1@yahoo.com</a>
16	Ermias Alemu	Arba Minch University	Lecturer	<a href="mailto:ermialem@gmail.com">ermialem@gmail.com</a>

17	Eveega Namubiru	EAC		<a href="mailto:nelwanga@yahoo.com">nelwanga@yahoo.com</a>
18	Fethi Lebedi	AgWA - FAO	AgWA Coordinator	<a href="mailto:Fethi.Lebdi@fao.org">Fethi.Lebdi@fao.org</a>
19	Fethia Ahmed	FAO - Ethiopia	National Consultatnt	<a href="mailto:Ahmed, Fethia (FAOET) &lt;Fethia.Ahmed@fao.org&gt;">Ahmed, Fethia (FAOET) &lt;Fethia.Ahmed@fao.org&gt;</a>
20	Fikru Haile G/Tsadik	Tigray Bureau of Agriculture	Irrigation Expert	<a href="mailto:hailefikru@yahoo.com">hailefikru@yahoo.com</a>
21	Gebrehaweria Gebregziabher	IWMI	IWMI	<a href="mailto:G.Gebregziabher@cgiar.org">G.Gebregziabher@cgiar.org</a>
22	Gebru Bongor	Eden Fields	Technical & Marketing Manager	<a href="mailto:gebrubonger@yahoo.com">gebrubonger@yahoo.com</a>
23	Getachew Gebru	Ethiopian Society of Animal Production	President	<a href="mailto:ggebru09@gmail.com">ggebru09@gmail.com</a>
24	Getachew Legesse	Private Consultatnt	Value Chain Consultant	<a href="mailto:abayomiget@yahoo.com">abayomiget@yahoo.com</a>
25	H.E. Ato Sileshi Getahun	MoA	State Minister	<a href="mailto:getasil_69@yahoo.com">getasil_69@yahoo.com</a>
26	Jean-Claude Bizmana	Texas A&M University	Ass. Research Scientist	<a href="mailto:jbizimana@afpc.tamu.edu">jbizimana@afpc.tamu.edu</a>
27	Mannuel Reyes	NCADTSU		<a href="mailto:reyes@ag_ncat.edu">reyes@ag_ncat.edu</a>
28	Masresha Tessema	Ethiopian Health and Nutrition Research Institute	Directorate	<a href="mailto:masresha88@gmail.com">masresha88@gmail.com</a>
29	Mr. Hussien Kebede	MoA, NRMD	Senior Expert	<a href="mailto:Kebede_hussein@yahoo.com">Kebede_hussein@yahoo.com</a>
30	Mr. Kebede Ayele	iDE	Program Director	<a href="mailto:k_ayele@ide.org.et">k_ayele@ide.org.et</a> <a href="mailto:kayele@ideorg.org">kayele@ideorg.org</a>
31	Mr.Tadesse Assefa	ACDI/VOCA - OR, D/Zeit	Forage Technical Specialist	<a href="mailto:tadesseayane@yahoo.com">tadesseayane@yahoo.com</a>
32	Nicole Lefore	IWMI - South Africa	Research Manager	<a href="mailto:n.lefore@cgiar.org">n.lefore@cgiar.org</a>
33	Omondi Immaculate	ILRI	MLE Scientist	<a href="mailto:i.omondi@cgair.org">i.omondi@cgair.org</a>

34	Phil Riddell	External Advisory Committee		<a href="mailto:phil.riddell@lazc.org">phil.riddell@lazc.org</a> <a href="mailto:philriddel@hotmail.com">philriddel@hotmail.com</a>
35	Regassa Bekele	ACDI/VOCA	Senior National Forage Development Specialist	<a href="mailto:rbekele@acdivocaeth.org">rbekele@acdivocaeth.org</a>
36	Saa Dittoh	Univeristy for Dev. Studies, TAMALE	Proffessor	<a href="mailto:saaditt@gmail.com">saaditt@gmail.com</a>
37	Said Nahdy Silim	ICARDA	Coordinator - SSAP	<a href="mailto:s.silim@cgiar.org">s.silim@cgiar.org</a>
38	Simon Langan	IWMI	IWMI	<a href="mailto:S.Langan@cgiar.org">S.Langan@cgiar.org</a>
39	Sisay Teklu	MoWIE	Irrigatioin Project Coordinator	<a href="mailto:sisay_teklu@yahoo.com">sisay_teklu@yahoo.com</a>
40	Tesfay Alemseged	EIWR - AAU	Program Manager	<a href="mailto:tesfay@gmail.com">tesfay@gmail.com</a>
41	Tom Gerik	Texas A& M	Resdient Director	<a href="mailto:t.gerik@tamu.edu">t.gerik@tamu.edu</a>
42	Worku Bedeke	SARI	Researcher	<a href="mailto:bworku2002@gmail.com">bworku2002@gmail.com</a>
43	Yohannes Geleta	Oromia IDA	Process Owner for Irrigation Study & Design	<a href="mailto:yohketi@gmail.com">yohketi@gmail.com</a>
44	Yosef Assefa	MoA, NRMD	Senior Expert	<a href="mailto:yosef22@gmail.com">yosef22@gmail.com</a>

## Annex 2. Media coverage of event



# Ministry calls for integrated effort to boost irrigation farming

BY FANUEL LAKEW

ADDIS ABABA— Agriculture State Minister Sileshi Getahun said that the major challenge facing farmers utilizing irrigation is getting access to the market.

The State Minister was speaking at the first annual meeting of Feed the Future Innovation Lab for Small-Scale Irrigation (FIFILSSI) organized by the International Water Management Institute (IWMI) here yesterday.

State Minister Sileshi also said that farmers are not getting access to adequate and right market particularly in remote areas because over 90 per cent of the irrigation usually they used is during the dry season and they produce in mass so the supply would be high while the demand is low.

"Thus, we need to work more on market access and infrastructural development and transferring adequate knowledge to farmers with the help of researchers, experts, practitioners, the government and stakeholders," Sileshi said.

Noting that agriculture is mainly rain-fed and

serves as a supply for the development of other sectors as well as to the general economy, the State Minister said that producing using water resources from rain alone is not becoming promising.

However, he said there is the possibility of undertaking the development of agriculture with the help of rain-fed one as over 85 per cent of crop production in the world is based on this but not irrigation.

State Minister Sileshi pointed out that proper management of water in the soil, land and field and appropriate technologies need to be introduced and applied together with appropriate skill and input to the farmers which could increase productivity and production using irrigation.

However, current global condition shows that production with rain alone is not becoming dependable because of climate change thus one of the means to sustain and increase agricultural productivity and production is irrigation, he added.

Moreover, he underscored that, among the irrigation opportunities, small-scale irrigation is also found to be

the most to serve smallholder farmers as it is easy to develop, fit the farming system and requires low management cost.

He said that thus, small ponds developed at household level could serve the whole family in ensuring food security at the national as well as sub-regional levels.

According to IWMI press release, the objective of the meeting is to provide a general awareness of the scope and expected outcomes of the FIFILSSI and stimulate discussion of FIFILSSI at policy level. Furthermore, various papers, first year progress and plan for the second year was presented to be followed by thorough discussion.

The two-day meeting is being attended by over 80 participants including senior government officials, partners, donors, academic and research institutions representatives and other stakeholders to discuss and share views on small-scale irrigation and irrigated fodder production at policy level.

The Feed the Future Innovation Lab for Small-Scale Irrigation (FIFILSSI) is a five-year project involving Ethiopia, Tanzania and Ghana with the objective to conduct



(Photo: Teshay Nigawke)

State Minister Sileshi Getahun

field research, evaluate and assess the impact of small-scale irrigation technologies for smallholders farmers

It is USAID funded project led by Borlaug Institute for International Agriculture /Texas A & M university system in partnership with IWMI, International Livestock Research Institute (ILRI), International Food Policy Research Institute and North Carolina A & T University.