



Institute for Sustainable Development

ISD Annual Activity Report For 2011

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ISD ANNUAL ACTIVITY REPORT FOR 2011

EXECUTIVE SUMMARY

In December 2011, ISD received the Gothenburg Award for Sustainable Development for the outstanding achievement it gained in building up a sustainable food supply for Ethiopia's smallholder farmers through the rehabilitation the environment and agricultural production in Tigray and other degraded areas of the country. This award was shared with a renowned personality, the former Secretary of the United Nations, Kofi Anan, for exemplary work in sustainable food security of smallholder farming communities, and particularly women, in Africa.

2011 was a year when the importance of ecologically based practices was given much emphasis because of the increasing awareness of the challenges from Climate Change and the need to train farmers and their local agricultural professionals, as well as youth, students and teachers in technologies that can improve the abilities of local communities to mitigate and adapt to these challenges.

The Ecological Agriculture Development Team continued in improving the range of means for smallholder farmers to make and use quality compost through introducing vermi(earthworm)-composting and experience sharing visits among farmers making and using quality compost from bioslurry in the National Biogas Program of Ethiopia (NBPE). The System of Crop Intensification (SCI), called "Planting with Space" was scaled out to more farmers in Tigray and South Wollo of Amhara. This has now become a standard practice for farmers growing finger millet in the Axum area of Tigray with yields continuing to improve. Farmers in the same area also took up row planting for tef. With financial support from the Environmental Protection Authority (EPA), SCI was also introduced to the drought challenged areas of Afar, Amhara, Gambella and Somali. Improved bee-keeping was given a special focus for landless youth, women and monasteries to improve local conservation of rehabilitated hillsides and provide a good source of income for these otherwise disadvantaged groups. Promoting agroforestry for agrobiological and income diversification of farmers continued in all the areas where ISD works. And a special grant from the EPA enabled ISD to continue working with the farmers in 2 kebeles near Arba Minch to raise indigenous tree seedlings and start reforesting the denuded hillsides above the town. Many of these activities were supported by the production of manuals in English and Amharic, and a set of photographs for promoting bee forage were also produced for use by development agents managing farmer training centers.

The Youth Groups Capacity Development Team continued to work with self-organized out of school youth associations in 5 towns and Addis Ababa. Alongside training in technical skills they were also trained in business and financial management. Several of the associations proved themselves capable of taking micro-grants (non refundable) in order to start their businesses such as poultry, ornamental plants, highland fruits and managing a tea room to promote local environmental protection and a clean surrounding.

The work with school environment clubs continued from the end of 2010 in helping 5 schools in Addis Ababa establish organic vegetable gardens and tree nurseries. A major aim of this project was to help the schools generate income to support orphans and vulnerable children (OVCs) meet their educational and personal needs, such as sanitation materials for girls. The other aim was to provide vegetables at a reasonable price for the school community and promote the importance of urban agriculture for better nutrition and incomes.

During the year, ISD was able to finalize and obtain funding for new projects. These included support to revive ISD's program promoting cultural biodiversity with 24 schools throughout the country and run 2 training workshops with students and teachers on technologies to mitigate and adapt to climate change. ISD was also selected to host a research project supporting the work of the Inter-governmental Panel on Climate Change to study the impacts of climate change on urban and peri-urban agriculture in Addis Ababa.

ISD also became a partner in the EU-funded Project coordinated by icipe (International Centre for Insect Physiology and Ecology) called ADOPT for the adaptation and extension of the 'push-pull' technology for controlling stem borer insects and striga weed in maize and sorghum.

Administratively, ISD completed its 5-year Strategic Plan and had it approved by its Board, and conducted a training in Project Cycle Management for its staff members and 3 youth group partners.

1. BACKGROUND

Ethiopia is one of the poorest countries in the world with over 80% living in rural areas and dependent on agriculture, mostly as producers but also in marketing and processing, for their livelihoods. The population is also very young. The 2007 Population Census found that 66% were younger than 25 years, and if those aged 25-29 are also included, this gives 74% of the population. Despite the economic growth of the country, generally estimated at around 11%, the capacity of the economy to absorb youth and young educated adults into gainful employment is still low. There are also significant numbers of disadvantaged members of society such as elderly and childless couples, women-headed households, disabled, landless and those challenged by HIV and AIDS that need special attention.

Land degradation is the most serious problem throughout Ethiopia, but particularly in the drier northern and eastern areas of the highlands where the topography consists of steep hillsides and deep valleys, especially along both sides of the Rift Valley. Without effective land rehabilitation, it is not possible for the ecosystem services to provide the fertile soil, adequate clean water, clean air and diverse natural resources that rural and urban communities need for their health and development.

Ethiopia is also experiencing the negative impacts of climate change. The most serious of these impacts were and continue to be in the increasing unreliability of the small rains (belg), the delay in the onset and early stopping of the main rains throughout the country, and the poor distribution of rainfall within the main rainy season with dry gaps alternating with very heavy showers and increasing incidences of hail storms.

In September 2010, Ethiopia launched its new five-year "Growth and Transformation Plan" (GTP). Pillar 2 emphasizes the basic role of improved agricultural productivity for economic development, and Pillar 7 gives special importance to empowering and improving the capacity of women and youth.

SITUATION OF FARMING COMMUNITIES AND THE YOUTH

The majority of Ethiopia's over 13 million farming households are small holders with an average cultivated area per household of 0.96 ha. Most families have to produce all their food using only rainfall, and generally their productivity is low with average yields of basic cereals between 1 and 2 t/ha. Hence food insecurity, lack of access to basic inputs and infrastructure as well as limited access to social welfare services still continue to negatively impact on the lives of the Ethiopian people despite recent economic growth.

The Ministry of Agriculture is now promoting and the Central Statistics Agency recording the use of natural fertilizer that includes making and using compost in all crop producing areas of the country. This shows that there is a very large opportunity for these farmers to adopt improved technologies for using natural fertilizer, including the use of bioslurry from biogas digester plants, as well as other adaptive agronomic practices to raise and maintain the productivity of their land. This is now generally referred to as eco-intensification.

Both urban and rural communities view unemployed youth as irresponsible and connected with anti-social and destructive behaviour: environmental exploitation, particularly cutting trees and making charcoal, unplanned mining of industrial materials for the construction industry, theft, violence, drug addiction, etc. There is the National Youth Policy accompanied by social and economic packages aimed at helping the youth to become active actors in the development process. This has paved the way for the establishment and growth of youth forums, associations and organizations targeting the youth. The government is also requesting the cooperation of non-governmental organizations (NGOs) and community-based organizations (CBOs) to fill the gap between the need and existing situation for the youth.

During 2011, the work of ISD was carried out by 2 teams: Ecological Agriculture Development Team, and Youth Groups Capacity Development Team.

2. ISD'S VISION, MISSION AND OBJECTIVES

The vision of ISD is to "Contribute towards an Ethiopia that is free from hunger and poverty by combining the best in modern and traditional knowledge."

ISD's mission is ***to promote sustainable ecological and social development through working with people and organizations at the grassroots level.***

The main objectives of ISD's work are to:

- Design, promote and implement sustainable development strategies to address the environmental, social and economic challenges of the beneficiary groups, particularly smallholder farmers, youth, and women,
- Facilitate conditions for the beneficiary groups to realize their goals in their self-initiated development efforts,
- Facilitate conditions for the beneficiary groups' to get better access to services,
- Facilitate a conducive environment for skills development through training and engagement of the beneficiary groups in self supporting endeavours, including institutional learning.

3. INTERVENTION AREAS/REGIONS

ISD works with smallholder farmers, their local agricultural professionals (development agents and experts) as well administrators in selected kebeles in the following regions. It also supports environmental clubs in schools and self-organized out-of-school youth groups.

- 12 woredas in Central East, Central West, Eastern and Southern Zones of Tigray Region, plus 2 secondary schools
- 8 woredas in South Gondar, West Gojam, Oromiya Special, South Wollo, and Wag Himra Special Zones of Amhara Region, plus 4 schools and 3 out-of-school youth groups
- 6 woredas in East Arsi, and East Shewa Zones of Oromiya Region, plus 4 schools and 4 out-of-school youth groups
- 3 woredas in Arba Minch Zuriya, Guragi and Sidama Zones of Southern Nations, Nationalities and Peoples Region, plus 6 schools and 3 out-of-school youth groups
- 2 woredas in Afar Region, plus 1 preparatory school
- 3 woredas in Gambella Region, plus 1 secondary and preparatory school
- 2 woredas in Somali Region, plus 1 secondary and preparatory school
- 10 schools, 1 each in Dire Dawa and Harar, as well as 8 in Addis Ababa

4. LONG-TERM AND SHORT-TERM POLICIES AND STRATEGIES

4.1 SUMMARY OF PLANNED ACTIVITIES AND ACHIEVEMENTS

4.1.1 ECOLOGICAL AGRICULTURAL DEVELOPMENT

A. NATURAL RESOURCE CONSERVATION: A field visit and planning meeting was undertaken around the catchment area of Lake Haik, South Wollo, with a purpose of developing a plan to implement integrated watershed management in the Gilgel Gibe I and Tekeze catchments, as well as farming communities from Tolecho Mountain in Welmera Woreda.

The total numbers of participants were 77 (67 males and 10 females). The participants were from federal environmental protection authority and different regional and wereda offices from Amhara, Oromiya and Tigray Regions.

B. AGROFORESTRY: Ethiopian agricultural system is a mixed agriculture of livestock and crop production practices. Today farmers are intercropping crops, vegetables, etc with trees in their farm land. This practice not only increase yields but also gives more animal feed, firewood, shade, construction material, farming tools and improve soil and water conservation.

The major activities under agro-forestry are:

- Promoting *Boswellia papyrifera*–itan zaf–for agroforestry has been piloted in three communities (Miwtsa'e Werqi, Dabano and Chila) with in two selected weredas (Tahtai Maichew and Kolla Tembien). The main reason for selecting these weredas was that they used to grow *Boswellia* before. A training for 14 (6

farmers, 3 DAs, 3 tabia chairman and 2 wereda experts) participants was given on the management aspect of it which later on followed by an experience sharing visit by 27 participants comprised from farmers, DAs, experts and army members from Chila. The existing situation is:

In all the selected sites the farmers have planted *Boswellia* by cuttings and most of them are surviving. In order to increase the survival rate the participants during the experience sharing visit suggested that in the future planting they have to use thicker cuttings, because all the survived plants are the thicker ones. The main challenge for survival is found to be the problem of termite. All the trees dried and died are eaten at their root by termites.

- Promoting bee forage, agro-forestry in Tehule Dere area and agro-forestry in Degu'a Tembien: the team bought 3343 seedlings of orange, avocado and coffee as well as 8.8 kg of seed of vegetables like onion, swischard, onion and pepper and distributed for farmers. This along with promoting agroforestry will ensure their economical viability through time. In Degu'a Tembien the vegetables seeds are distributed for 25 female household heads and 50 male household heads—total for 75 model farmers.

C. SOIL FERTILITY ENHANCEMENT: Soil fertility problem is very fundamental in the Ethiopian agriculture. Therefore, ISD has given many TOTs (training of trainers) for farmers, DAs & experts throughout its project areas on compost and vermi(earthworm)-compost preparation and use. All trainings include practical and theoretical aspects. With the support of BoARD of the Tigray Region training in compost was given for all the 37 weredas of the Region. The objective of the training was to build the capacity of experts and raise their awareness at woreda level on making and using quality and quantity of compost.

Earthworms were introduced into Tahtai Maichew wereda and this method of composting is spreading in Tahtai Maichew. It has been used by 2 Farmers' Training Centers (FTCs) and 3 farmers from its original place called Mai Siye Nursery. The worms were also introduced to Tehuledere wereda in Amhara Region. The worms are well handled but there is a problem with handling of compostable materials.

D. BIO-SLURRY: A one-day orientation training was carried out in Lume woreda of Oromiya region for a total of 34 participants (10 farmers; 9 DAs—development agents; 3 supervisors; 8 wereda agriculture extension experts and 4 ISD staff). The purpose of the training was to provide orientation for farmers, development agents, supervisors and wereda agriculture extension workers on establishment of demonstration plots, on how to record the yield data obtained as a result of using bioslurry compost. From gender point of view, the participants were 30 males and 3 females.

Another training and orientation visit was conducted in Lume and Hitossa woredas in October for higher officials from Ministry of Agriculture, Tigray, Amhara and, SNNP Regional Bureaus of Agriculture, as well as Oromiya and Tigray Biogas Program Coordination Units and Ministry of Water and Energy/NBPE to make them aware of the programme and discuss on the need for good collaboration among the different offices, particularly energy and agriculture.

A two days consultative meeting was also held in Axum Hotel, Addis Ababa, on bioslurry management and utilization. A total of 22 participants were drawn from Ministry of Agriculture (MoA), Ministry of Finance and Economic Development (MoFED), Ministry of Water and Energy (MoWE), Federal Environmental Protection authority (FEPA), Oromiya Region Bureau of Agriculture, Amhara, Oromia, Tigray and SNNP Region biogas program coordination units participated in the training.

Results obtained from the trainings:

- MoA is convinced to include bioslurry in formal government extension system
- Most of the farmers who participated in the training have established bioslurry demonstration plots that help to compare bioslurry plots with demo plots treated with chemical fertilizer and controls.
- The data generated from such demo plots have been collected, partially analyzed and it will be shared with relevant partners.

Development of Extension and Promotional Materials: Bioslurry use and handling is new for the farmers as well as agriculture extension workers who provide technical backup for farmers at various levels. There was no slurry extension materials produced in local language in the country. On the other hand, there was much demand for instruction materials on how to use slurry from farmers as well as local agriculture experts in every awareness

raising and training programs. In line with this, ISD produced a draft manual and was presented to farmers and experts to be enriched. The extension book entitled "Bioslurry: an Immense potential to restore the fertility of the soil" was finalized to be printed in 2012.

ISD also developed information booklet that provides information for farmers on bioslurry handling and use of bioslurry in a dramatic way. The dialogue held between farmers was supported by illustrations showing people involved in compost making process and produced in 5000 copies.

Challenges Encountered

- Delay in releasing the required budget from SNV side to carry out the agreed and planned activities on time.
- Staff turnover in NBPE which resulted in a delay in getting activities agreed and funded.

E. SUPPORTING INNOVATOR FARMERS is implemented in collaboration with PROLINNOVA-Ethiopia and other partners in Tigray. This is mainly done to support innovator farmers to perform joint experimentation and to handle data or information well and to undergo expansion or scaling up strategies of improved agricultural technologies with their neighboring farmers. Outstanding innovator farmers also provide advisory and technical services to other ISD partner groups.

In 2011, a Regional Reflection Workshop on Local Innovation Support Fund (LISF) was held in Axum Town with a purpose of assessing the level of Institutionalization of Local Innovation Support Fund (LISF) in Tahtai Maichew and La'elai Maichew weredas. Farmers gave poster presentations showing the whole process of innovation, which shows an independent farmer led documentation.

F. PUSH-PULL TECHNOLOGY under the ICIPE-lead ADOPT Project: This is a technology applied to protect crops like sorghum and maize from the parasitic weed, striga, and the stem borer moth. The technology uses planting of desmodium intercropped with maize and sorghum to suppress striga and drive away egg-laying stem-borer moths. Napier grass (*Pennisetum purpureum*) or Sudan grass (*Sorghum sudanensis*) is planted around the farm to attract and trap the stem borers. The stem borer egg-laying moths are repelled 'pushed-out' by the smell from *Desmodium* while being more attracted to the surrounding grasses than maize or sorghum and they lay their eggs on the grass. But the Napier grass does not allow stem-borer larvae to mature. When the eggs hatch and the small larvae bore into the Napier grass stems, the plant produces a sticky substance that traps them and they die. Allelo-chemicals (germination stimulant and post germination radical inhibition) is responsible for the elimination of striga seeds observed in maize-*Desmodium* intercropping.

The experiment on Push-Pull Technology is done in Axum (two FTCs - Mai Siye and Dura) and in Haike (two FTCs- Kebeles 012 and 013 and with one female farmer called Ayal Abera).

In Axum area:

- Dura FTC - the first crop was maize with *Desmodium* and the second is planted with chick-pea and then intercropped with maize.
- Mai Siye FTC - the first crop was sorghum with *Desmodium* and the second is planted with chick-pea and then intercropped with maize.
- The farmer' plot was planted with sorghum and *Desmodium*.

In Haike all the plots were planted with maize intercropped with *Desmodium*. The *Desmodium* had a poor germination rate of around 60%. The female farmer, Ayal Abera, soaked the seed in boiled water for 24 hours before planting and achieved a germination rate of over 90%. The following table gives the results, which also shows the strong impact of the use of compost and *Desmodium* on the yield of the maize, 91 q/ha equivalent.

Yield data under push-pull technology in Haike area

Expt. sites	Crop type	Planting	Seeding rate	Input	Plot size	Yield equivalent
Ayal Abera (Farmer)	Maize	Row (75x25)	25kg/ha	Compost	400m ²	91q/ha
Kebele 013 FTC	maize	Row (75x25)	25kg/ha	Fertilizer (DAP & Urea)	150m ²	60q/ha
Kebele 012 FTC	maize	Row (75x25)	25kg/ha	Fertilizer (Urea)	1500m ²	32q/ha

All demonstration plots were visited by farmers, DAs, administration and experts from five woredas (Tehuledere, Ambasel, Kallu, Werebabo and Dessie Zuriya). W/ro Ayal's trial demonstrated a better yield of crop and it was free from stem-borer and striga. Most of the visitors decided to implement this technology in the coming next cropping season.

G. CCCARE Project—ADAPTING TO THE EFFECT OF CLIMATE CHANGE: This project focuses on bee-keeping activities and growing multipurpose trees and shrubs. It helps to combine conservation with sustainable use of rehabilitated hills sides so that can be taken as agro-forestry by farmers and also provide job for landless or unemployed youth. With this project the capacity of the local Farmers' Training Centers (FTCs) to provide services to their farmers is also improved. For economic sustainability, farmers and youth were supported to form cooperatives and develop value-added market chain for their honey and bees wax. About 44 unemployed youth and farmers have been trained and benefited from the bee management, bee hive making, queen rearing, etc.

Many farmers have grown fruits and multipurpose trees inside and around their farms. This also is helping farmers in adapting Climate Change impacts.

H. AWARENESS RAISING ACTIVITIES: An experience sharing meeting was held in Axum focusing on environmental conservation among school communities, religious institutions and army members. The purpose of the meeting was to share good practices of the church, mosques, elementary school clubs and the army community as well as to create links for future endeavors.

The participants recommended the following at the end of the meeting.

- The army to collaborate with other partners on natural resource conservation.
- To discuss the natural conservation issue in all churches and mosques at all levels.
- The Army suggested to apply such kind of activity in all of their sections to become model for others. They also promised to support any institution if they are requested and they also need professional support for selection of proper tree varieties and planting techniques.
- The school environmental clubs are expected to scale-out their achievements in to outside communities. The representative from Regional Bureau of Education (BOE) showed interest to work together in the future in an organized way.
- The experts from different organizations are proposed to connect all these organizations. Therefore, they proposed to establish a consultative committee to follow up and enhance the environmental activities in the Central Zone of Tigray.

I. PILOTING A SYSTEM OF CROP INTENSIFICATION. The System of Rice/ Crop Intensification (SRI/SCI) involves growing seedlings of crops on beds and then planting the seedlings in rows with space between the plants in the row as well as between rows. This is a deliberate practice to reduce the risk of crop failure due to unreliable rainfall. The first successful woman, W/ro Yehanusu Atsbeha, tried this technique in 2005 on finger millet and got a yield of 7.6 ton per hectare equivalent.

This project was re-introduced to try the technique on the long-growing season crop (sorghum, finger-millet, etc). This is because the crops were replaced by the short-growing season crops due to the erratic rainfall.

By 2011 this crop management technique was being practiced in Tigray, Amhara, Afar, Gambella and Somali Regions. Trainings on compost, bio-fertilizer and methods of crop intensification were given to agricultural experts and farmers of the four regions. The trials in all four regions were visited to see the crop result and experience sharing visits among farmers were also done. Seeds and agricultural tools also were distributed to all participating regions.

J. RESEARCH ISD also supports applied research in the field. Seven areas of study were being undertaken in 2011.

- A research on vegetable market chain in Tatai Maichew wereda.
- A research on SCI in the dry land areas of Sekota area on pearl millet and sorghum. But it failed because of the experimental area was not fenced and animals got in and ate the plants.
- Two master thesis researches on bioslurry compost application were undertaken in Tigray and Dehub regions by students.
- Three master thesis researches are undertaking on Push-Pull Technology around Axum i.e. Tahtai Maichew and La'elai Maichew Districts by students.

K. ARBA MINCH REHABILITATION PROJECT

The project we started to implement in Arba Minch zuria wereda focuses on environmental rehabilitation to combat climate change in 2 kebeles in the Sile River catchment south of Arba Minch. Unless these problems are tackled urgently, Arba Minch Zuria, which used to be food secure with abundant good water and good fish populations, is likely to become a food deficit area with increasing incidences of ethnic and intergenerational conflict and destruction of the remaining natural ecosystems.

The Sile River and its tributaries pass through the kebeles of Genta Bonke and Genta Meyche to the Sile State Farm and then to Lake Chamo. Regulating the flow and having equitable access to the water of the Sile River is one of the major issues of the people of the two kebeles.

The problems in the 2 kebeles are of poor natural resource management resulting in a deteriorating environment. ISD funded by the Federal EPA started the project by signing a work agreement with the woreda Finance and Economy office and Wereda Agriculture office. After signing of the agreement we selected 50 farmers from the two kebeles and discussed on the problem of the area, the activities of the project and how the farmers will fully participate in the project.

After the discussion the first activity we implement in both kebeles was establishing two tree nurseries one in each kebele and planted mostly indigenous trees. We fenced the nurseries, equipped them with water storage tanks and planted 30kg of seed in both nurseries. The amount of seedlings raised were **20,690** and out of which **9,400** were planted by the beneficiary farmers on degraded areas, **1,223** were given to farmers to plant in their homesteads and **561** were given to institutions to plant in their compounds. As of December 31, 2012, **9,506** seedlings were still in the nurseries.

4.1.2. YOUTH GROUP CAPACITY DEVELOPMENT TEAM

This team focused on self-organized out of school youth and environment education clubs in schools.

A. OUT-OF-SCHOOL YOUTH

A1 TRAININGS: 9 types of trainings were given to 349 youth (218 male and 131 female). The trainings aim to build the capacity of the youth in different dimensions so that they can protect the environment and generate income to sustain themselves. The different trainings developed youth's knowledge and confidence, helped as forums to discuss on their uncertainties and used as opportunities to see their limitations and strengths. The knowledge gained from these trainings also helped some of the youth association members, eg. from Beza for women Community Based Development Association (Dessie), Youth Development Association, Nib Environment Development Association, Tenakebena and Ginfile Association (Addis Ababa) to become trainers for their peers. It also increases their income.

The trainings were on:

- Highland fruit production
- Marketing management
- Leadership and fund raising
- Business skills
- Small scale poultry production
- Financial Management

- Practical story writing (to tell their own stories/experiences)
- Organic Vegetable production and Compost making and use, and;
- Gender awareness and girl's/women's confidence building

Other activities included:

A2. SPONSORING GIRLS / YOUNG WOMEN IN DIFFERENT SKILL TRAINING In 2011 the out of School youth programme sponsored 18 girls to be trained in different professions so that once they finish their education they can start jobs according to their profession. The girls were given the training according to their interest. The professions chosen by the girls were Videography, Management, Food preparation, Graphic designing, Hair styling, Kindergarten teaching and basic computer skills.

A3. NON RETURNABLE MICRO GRANTS – these are to cover start up costs for income generating activities based on the technical trainings. In 2011 twelve youth groups were provided micro-grants for different activities. The micro-grant support allows the associations to start working in urban agriculture like organic vegetable growing, apiculture and small scale poultry production. Because of these micro-grants, some Associations are diversifying their activities.

A4. PROVIDING EQUIPMENT AND FURNITURE FOR TEA ROOMS Four youth associations were provided with furniture and equipment to start a tea room business. This support allows the youth groups to generate income while they are protecting the environment. The groups are involved in protecting and rehabilitating degraded hill areas, planting trees and so on.

A5. OFFICE / STORE INFRASTRUCTURE to give a base from which a youth group can start and run their activities. ISD supported 5 youth associations and 2 elementary schools by constructing small offices, store rooms, green houses or toilets. Offices and store rooms are built after the youth groups get a legal space from their respective kebeles. Providing an office is a big help for the youth to get a permanent address and working place as well as constructing store enables them to store their equipments and produce.

A6. PROVIDING BOOKS In year 2011, 271 books of 26 different types were distributed for four youth group associations in Leku and two associations in Chefei Donsa. These small woreda towns do not have any public libraries. The books were in entrepreneurship, marketing, leadership, water hygiene; story books and books helping basic writing and reading skills. The books will help to further strength the capacity of association members which received trainings in the past as well to develop their reading skill. The books also help non members from their community to come and enjoy reading and acquire knowledge.

A7. PROVIDING CAMERA AND VOICE TAPE RECORDER 16 youth groups were each provided with a camera and a voice tape recorder to help them document their activities so that they will be able to promote themselves and write their stories in the future.

A8. ESTABLISHMENT OF STAKEHOLDER GROUPS Local stakeholder groups are needed to build relationships among the youth and the local government offices so the youth can become better integrated into their local communities and obtain advice and support when needed. In 2011, major stakeholders from local government offices were identified and groups established in Chefe Donsa, Leku, Arba Minch and Dessei. The stakeholders identified came from Trade and Industry office, Small Micro-finance office, Women office, Children and Youth office, Wereda Agriculture office, Beautification, sanitation and Park office, Education Office, Town Administration or Municipality, Wereda Health office, respective kebele offices, Culture and Tourism office, Water office, Information office, Labour and Social Affairs office and Justice office. The aim for establishing this group is to link the youth activities with the offices to make it sustainable and for easy facilitation of services for the youth.

A9. EXPERIENCE SHARING The youth program facilitated an experience sharing with one farmer from Wukro Maray near Axum coming to Leku, Sefere Selam Association. He is an innovative farmer and has a good experience on draining marshy lands. He shared this experience for 33 members of the association for three days. He identified the source of the problem and has shown the solution to the association members in a participatory way.

A10 MAJOR ACHIEVEMENTS

The major achievements from ISD's work to support the development of out-of-school self organized groups are as follows:

1. The result of our capacity building training is shown in that two of our partner youth associations (one from Arba Minch and one from Dessie) have got project agreements for support from EU and USAID respectively. The later one is now registered as Local based organization. Both Associations now have 11 employed members running their projects.
2. The strong commitment of the association members in their respected activities inspires local administrative bodies to give access to land to associations, for example, the cases of Telm Welea, Beza Eganew Mayet (Dessie), the Disabled and Abnet Tabot Maderia (Chefe Donsa);
3. The different types of vegetables, eggs, oyster mushroom and honey produced gave an opportunity for members to improve their diets, brought in income and the local people have a chance to get fresh produce nearby at a reasonable price;
4. The first production of the highland fruits (apples, pears and plums) were stimulating moments for members to taste their own produce;
5. One group, Lege Mojo, started providing training and grafted highland fruit seedlings for the farmers in Chefe Donsa;
6. Employment of members in their association (eg. Eganew Mayet and Beza Association members);
7. Documentation and recording was remarkably done in some associations like Beza;
8. Use of financial recording book, expense and receiving vouchers are now established in most Association system;
9. Sponsoring girls for skills training brought employment opportunity; and
10. Beza women of Dessei managed to get support from the USA on a program called Because Every Mother Matters. It started in summer 2011 with 20 mothers on income generating activities.

A11 CHALLENGES ENCOUNTERED

- Shortage of egg laying chicken of true type and well managed ones as well as low quality of chicken feed which negatively affects the production of eggs;
- Water shortage during the dry season of the year and the quality of water used for irrigation particularly in Addis Ababa and Dessei;
- Absence of integrity of executive members of some associations.
- Associations undertaking activities without having permission from the proper local administrative body resulted in loss of money and time.

A12 CONCLUSION

The different activities of the program have made a positive contribution in building the capacity of youth in terms of knowledge, skill and income. This encourages us in ISD to continue our work with such self-organized youth associations so that they can become economically independent from the program, but also contribute to building the capacity of other similar groups in their local areas.

Communities are motivated by the associations' activities and approach them to get seedlings and advice on how to work on their own back yard.

Some of the youth associations have a good vision and a strategy to achieve their visions, but others still lack this motivation and planning. Such motivation and planning is needed to make their groups sustainable, particularly in most of the executive leaders. On the other hand there are associations who are committed for their cause and able to attract other donor support.

Some associations have achieved good and are able enough to stand by their own. Therefore they will graduate from being ISD's beneficiary in 2012. The situations of some youth associations also be examined thoroughly to decide whether they will continue to be with us or not.

B. ENVIRONMENT CLUBS IN SCHOOLS

This work focuses on building the capacity of the students and their teachers to establish and manage school gardens and trees nurseries to show the importance of producing vegetables and getting an income that can be used to support disadvantaged students, particularly orphans and vulnerable children (OVCS) challenged by dire

poverty, HIV and AIDs. Hence, ISD works with government and public schools in collaboration with the schools' administrations and local parent-teacher associations.

In 2011, the main activities focused on 5 schools in Addis Ababa to establish good urban agriculture practices.

B1 ESTABLISHING THE WORKING ENVIRONMENT FOR THE PROJECT

Sensitization workshops were conducted with school communities on the link between promoting urban agriculture to help improve the health of those challenged by HIV/AIDS and a dirty environment. 69 school representatives from the five schools participated in the workshop. The workshop discussed on urban agriculture and its contribution to food security and environmental sanitation. The participants acknowledged the positive contribution of urban agriculture towards addressing the nutritional problem of OVCs. Some of the schools have already started school feeding by volunteer students' and teachers' monthly contribution. However, it was not enough compared to number of OVCs in the schools. Therefore they accept the project as complementary to their ongoing initiatives.

MOU (Memorandum of understanding) was signed between the project and targeted schools at the end of the workshop. The MOU formed the base for a common understanding of the project content and sharing of responsibility.

At the end of the workshop each school also established a working committee to organize and supervise every activity of the project at school level. The project appreciated the working committee's contribution in sustaining the project initiatives.

B2 TRAINING SESSIONS Before starting the operation, the project improved the capacity of school communities with knowledge on vegetable production and poultry management through trainings which comprised practical and theoretical aspects. The participants were school directors, club leaders, teachers, students and school guards. The school guards were important because they are present when other members of the school community are absent. Many guards also carry out urban agriculture on small plots using their traditional knowledge. These training sessions helped also to build the social, technical and business skills for improved club management, gardening and fund raising / business management.

A three days practical and theoretical training was given to 148 members of the targeted five school communities on organic vegetable gardening and compost making. This included the following topics: site selection, nursery establishment, pest and disease control and compost making. After the training, these school communities had acquired enough knowledge on organic vegetable production and had started changing their knowledge in to practice in their school compounds. Each school developed an action plan at the end of the training.

Training was given to 60 school community members for two days on growing medicinal plants, managing drip irrigation and other water saving techniques and on tree nursery management. The number of trainees by school is given in the following table.

Distribution of trainees by schools

No	Name of schools	Training on medicinal plants, drip irrigation and tree nursery			Training on vegetable production		
		Male	Female	Total	Male	Female	Total
1	Yemane Birhan school	4	6	10	15	15	30
2	Asko school	2	-	2	22	8	30
3	Kedamawi Minilik school	14	11	25	16	15	31
4	Hawariaw Petros school	2	-	2	14	16	30
5	Miss Ford school	18	3	21	17	10	27
	Total	40	20	60	84	64	148

B3 PILOTING POULTRY PRODUCTION FOR STUDENTS AND TEACHERS Even though the project planned to start poultry production at three schools, due to inflation of costs and the limited budget, it was decided to undertake the activity only at one school (Yemane Birhan School). The school was selected because it has enough space for the enterprise compared to the others. 13 members of the school community (8 males and 5

females) were trained on poultry production and management. These included: School Director, Club leaders, Teachers, Students and guards. The school chooses to manage their chickens in cages rather than free range on the floor because of problems with controlling diseases and external predators. Therefore, a poultry house was constructed for 60 egg laying chickens. The pullets were purchased and the school provided with 3 quintals of chicken feed and 2 poultry cages.

B4 PROVISION OF INPUTS The project had planned for the construction of roof water harvesting structures. However, because of the inconveniency of the physical structures of the targeted schools, shortage of budget and shortage of project duration it was decided to purchase and distribute water storing tanks. Therefore, five water tanks (with a capacity of 3,000 or 2,000 liters each) were purchased and delivered to targeted schools depending on the size of the plot they had identified. A total of 20 sets of drip irrigation materials were also purchased and distributed to targeted schools to promote efficient utilization of water along with 780 meters of water tubes.

All the five schools were provided with agricultural equipments as a start-up capital. This was a total of 35 digging hoes, 12 spades, 19 rakes, 30 watering cans, 10 boots, 10 overalls, 21 gloves, 5 meter tapes, 19 three finger hoes and 58 two finger hoes. These items were divided and distributed to each of the schools according to the size of their gardens and number of committed students and staff to initiate urban agriculture activities. By the end of 2011, all the schools were making effective use these tools for gardening activities in their school compound. The schools also were provided with seeds: 11 kg of swiss chard, 5 kg of head cabbage, 2 kg of tomato, 5 kg of lettuce, 8 kg of carrot, 2 kg of beetroot, 1 kg of egg plant, 3kg of leak and 2kg of chilli pepper. Again the seeds were divided and distributed among the five schools depending on the size of plot assigned for the vegetable gardening.

Schools prepared seed bed to raise seedlings for transplanting. Different school club members, especially from the HIV/AIDS Prevention, Environment, Gender & Charity clubs and school guards were active participants in the management of the gardens in the schools. By the end of 2011, all schools have harvested and increased their income by selling the produce.

Even though it was planned to distribute fruit tree and indigenous tree seedlings, the project decided to build the capacity of the schools to produce the seedlings in the school compound. It was learned that it contributes to its sustainability and become additional income source by selling the seedlings to the surrounding community. Therefore, 2 kg of *Grevillia*, 2kg of *Cordia africana*, 2kg of *Acacia abyssinica*, 2kg of *Olea africana*, 1kg of *Podocarpus* and 65.5 kg of Polyethylene tube was distributed among all five schools.

B3 MAJOR ACHIEVEMENTS

The following major outcomes / achievements were recorded from the one-year urban agriculture project.

1. All the five schools earned about ETB 3,000 from the sale of the first harvested vegetables, i.e. in one harvest season. Yemane Birehan School also collected about 6,710 eggs and earned more than ETB 11,000 from egg sale. Besides enhancing the incomes, the schools started to use the gardens as practical demonstration/teaching aid areas. The schools also started to disseminate this knowledge to the surrounding community members by providing seedlings.
2. The project improved the awareness of the target schools on importance of urban agriculture for improved nutrition and income as well as environmental sanitation.

B4 CHALLENGES ENCOUNTERED

- Short project duration Vis a Vis project objective and area coverage
- High cost of poultry feed
- Delay in fund release
- Shortage of land in some schools compared to number of OVCs in the schools
- Staff turnover in the environment clubs in the schools
- Cannibalism among and natural enemies of chickens
- Water bill cost and water shortage challenge

B5 CONCLUSION

The outcome of this project with the schools has shown us the positive impacts on the attitudes of the students and teachers. Hence, the schools have a high interest to continue their activities in urban agriculture. Therefore, additional support is needed to overcome the above mentioned challenges like water harvesting structures to insure sustainability, and also continued interaction with the school communities to help them establish self-sustaining management for income generation through urban agriculture.

Although the income from the pilot intervention in introducing poultry production into a school community was very encouraging, the activity also generated many challenges and concerns among the school and local authorities, such as the importance of student health. More experience is needed to identify the best ways of introducing poultry for egg production into schools as eggs can provide both a good income as well as a source of vital nutrition for otherwise very poor students.

5. ACTIVITIES UNPLANNED AT THE START OF 2011

All the following activities came about as a result of projects being approved and funded after the start of the year, i.e. after January 2011.

5.1 ENVIRONMENT CLUBS IN SCHOOLS (CULTURAL BIODIVERSITY)

During 2011, funds came through from three donors to support 2 once-off trainings and a review visit of the schools involved in the project. This was a revival of the Cultural Biodiversity (CB) Project discontinued in mid-2010 when funding finished followed by the death of the Project Officer at the end of the year. A new Project Officer was recruited in July 2011.

REVIEW VISITS TO THE SCHOOLS: All the 24 schools in the Project were visited with the objective of reviewing the present status of the school environmental clubs, to give orientation for newly assigned club coordinators about CB activities and discuss related issues with club members and the school administration as well as their annual plan for the 2011/12 school year. It was also used to check that the project was in line with ISD's overall strategic plan.

The visit involved a one day visit and meeting with the administration and staff in each of the 24 schools. The discussions were held with directors, v/directors, club coordinators & club members. Laska and Konso secondary & preparatory schools' nature clubs were newly included in the program so that a special orientation program was arranged for these schools. From their comments, the participants have shown high interest and motivation for the revival of the CB program.

The support for the CB Project comes from The Christiansen Fund based in the USA that has a special focus on the African Rift and Ethiopia. Most of the activities in the project will be carried out in 2012.

TRAININGS IN CLIMATE CHANGE ADAPTATION Two trainings of trainers (ToTs) were undertaken which focused on organic vegetable gardening, compost making and use, tree nursery management and mud brick technology as means to help local communities adapt to the challenges of climate change.

The first training was arranged at Hotie secondary & preparatory school (Dessie) where a total of 72 participants (12 Teachers and 60 students of which 24 were females) from six selected school environmental clubs took part. The training was organized from November 5-6/2011 in collaboration with Forum for Environment (FfE) under the title of '**The Role of School Environmental Clubs in Climate Change Adaptation**'.

The second training took place in Bole Secondary & Preparatory School, Addis Ababa. It was organized in collaboration with and support from the Heinrich Boell Foundation (HBF) under the title of '**Promoting Climate Resilient Agriculture in Ethiopia**'. There were 75 participants (25 teachers and 50 students of which 25 were female) selected from 25 schools.

MAJOR ACHIEVEMENTS

- After the visit to the respective schools in the CB program almost all the school environment clubs have started to communicate with ISD and restarted their work on culture and environment.

- New directors and club coordinators have shown commitment to work with the stakeholder groups to strengthen club activities after the follow-up visits.
- Some schools have started climate adaptation works in their respective school compounds.

CHALLENGES ENCOUNTERED The major challenge for the CB program is a question of sustainability. There are different factors contributing to this:

1. High turnover of the school authorities which creates a gap in providing necessary administrative support for the clubs.
2. Weak stakeholder groups partly due to high turnover of the government officials.
3. The schools' expectation of funding from ISD is high, i.e. they expect to get direct financial and material support to run club activities.
4. Lack of budget in the schools for clubs activities.

5.2 Climate Change Impact on Urban and Peri-Urban Agriculture of Addis Ababa

As Part of the United Nations Climate Change Negotiation Process, the Intergovernmental Panel on Climate Change (IPCC) needs data on the impact of Climate Change on Urban and Peri-Urban Agriculture. Globally 9 cities were selected, 3 of which are in East Africa, Addis Ababa, Dar es Salaam and Entebbe. For this Addis Ababa was selected as one of the Cities and the First workshop was made in Addis Ababa with ISD selected to be the host and organizer for the meeting. The meeting decided on the modalities and content of the assessment. The assessment is being done by selecting experts from Addis Ababa Agriculture office, Addis Ababa University and NGOs working on Climate Change. For this assessment samples of urban and peri-urban farmers producing vegetables, other crops and animals were selected. A total of 400 urban farmers are involved in this assessment and the result will be consolidated and published in 2012.

5.3 IMPACT OF BIOSLURRY AND EXPERIENCE SHARING VISIT

The Development Cooperation of Netherlands (SNV) granted ISD ETB **254,364** out of which ETB **190,599** or **75%** was used for bioslurry training of farmers, development agents and agricultural supervisors as well as for networking of all bioslurry users in the country. The participants also made a north-south experience sharing visit to learn from one another.

5.4 EXPERIENCE SHARING VISIT ON WATER SHED MANAGEMENT

The Federal Environmental Protection Agency (EPA) granted ISD ETB **132,300** out of which ETB **122,512** or **92.6%** was used for an experience sharing visit of farmers and DAs from Gilgel Gibe region in Oromiya and Tekezie region of Amhara to visit the achievements in water shed protection of Tehuledere wereda in South Wollo of Amhara. The farmers and local agricultural experts have developed a system of mixed cropping (polyculture) combining annual and perennial crops such as banana and coffee in the narrow area of cultivated land around the shore of Haike. The edge of the lake is left uncultivated for sedges and reeds to grow. The aim is to prevent soil erosion and the washing of soil into the lake, as is seen in many other areas around water bodies, particularly reservoirs. The farmers were supposed to learn from Tehuledere and implement water shed protection activities in their water catchment area to save the dams from siltation by flood. A total of 77 farmers and DAs participated out of which 10 were females.

5.5 NBPE SECOND GRANT FOR PUBLICATIONS ON BIOSLURRY

The National Biogas Programme of Ethiopia (NBPE) gave ISD a second grant to train farmers and local DAs on recording, analyzing and reporting of bioslurry impact as seen in crop yields. The grant also supported the publication of extension and promotional materials. The training was given to 119 farmers and DAs out of which 12 were females. ISD published 5000 copies of bioslurry materials and 5000 copies of bioslurry promotional materials to be distributed for farmers.

6. INSTITUTIONAL ACHIEVEMENTS

THE GOTHENBURG AWARD FOR SUSTAINABLE DEVELOPMENT IN 2011: In the name of the 'Tigray Project', ISD received the 2011 Gothenburg Award for Sustainable Development which it shared with Kofi Anan, the former Secretary General of the United Nations and the current Chairman of AGRA (Alliance for a Green Revolution in Africa).

Our institute has worked systematically and persistently to develop sustainable farming built on local resources. We started to work in Tigray since 1996 in an area with impoverished soils, hit hard by erosion and droughts, to turn the tide. The project is aimed at supporting smallholder farmers, in particular women, who cultivate small plots of land. It has resulted in farming that generates better harvests and greater incomes while raising ground water levels, soil fertility and biodiversity.

The cooperation between the area's farmers and government experts is a good exchange of knowledge and experience which increases the knowledge and competence of everyone involved. The Tigray Project's success has earned it international attention, and experience gained from the project is now being spread throughout the crop growing areas of Ethiopia.

As stated in the letter to ISD: ISD's Tigray project is chosen because of its success in building up a viable farming community by taking advantage of biodiversity and local know-how which will greatly contribute to developing a sustainable and prosperous society in Africa. The cooperation ISD has established between local farmers and agriculture experts has benefited both and thus improved the lives of all those involved in the project. ISD has begun to spread vital information about the positive results achieved and methods used in this project to other regions in Ethiopia and Internationally.

For this reason the Gothenburg Award for Sustainable Development 2011 is awarded to ISD sharing with Kofi Anan for their work in the field of sustainable food supply. The prize of one million Swedish krona is shared equally by both awardees.

The Gothenburg Award Ceremony took place for the twelfth time and the prize is given to ISD and Kofi Anan at the ceremony held on December 14th 2011 in Gothenburg, Sweden.

OTHER INSTITUTIONAL ACHIEVEMENTS: In 2011, ISD completed its 5-year Strategic Plan covering 2011 to 2015. The Plan was finalized during a travel study visit involving all the 27 staff members of the Institute to its partner organizations and farmers in Tigray and South Wollo. The staff travelled by bus up through western Ethiopia, through Gondar to Axum, where a 2-day program of field visits and discussions were held. A similar 1-day field visit and discussion was held in South Gondar. The visit also enabled the staff members to see the diversity of scenery and agricultural systems as well as well known historical sites.

In March 2011, the ISD Management, Program and Key staff from Human Resources and Finance along with representatives from 3 of ISD's youth partners undertook a 5-day training in Project Cycle Management at a study center in Debre Zeit. This considerably helped all the staff to get a better understanding of the stages in a project cycle.

PUBLICATIONS: The following publications were produced during 2011 or finalized for publication in 2012.

- Evaluation on the Biomass Production and Fodder Quality of *Ficus thonningii* (Blume) and its effect on soil physic-chemical properties in Anferom District, Tigray, Ethiopia. MSc Thesis by Daniel Hagos. (only soft copy available as it was not printed by ISD)
- 'Planting with Space' by Hailu Araya & Sue Edwards, 16 page explanatory brochure 1000 copies printed
- "Sebln Mazamet", by Hailu Araya & Sue Edwards, translated by Hailu Araya & Tewolde Berhan Gebre Egziabher, 16 page brochure explanatory brochure in Amharic, 1000 copies printed
- ISD brochure updated and 1000 copies printed
- Natural Fertilizer: what it is & how to use it, by Sue Edwards and Hailu Araya, 1000 copies in English printed.
- 2 publications in Amharic for the promotion and use of bioslurry compost were also finalized for printing in 2012.
- A Manual on Bee Keeping in Tigrinya was also finalized for printing in 2012.