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AMAP Business Development Services (BDS)

Mid-Term Learning Assessment of Urban Agriculture Program for HIV-Affected Women in Ethiopia

FINAL REPORT

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LIST OF ACRONYMS AND ABBREVIATIONS

ABC	Abstain, Be faithful & Condomise
ABRD	Agribusiness and Rural Development
AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
BIO ECONOMY	Bio Economy Association
BMODFSTC	Bahir Dar Medehenelem Orphans and Destitute Family Support Training Center
BOLSA	Bureau of Labor and Social Affairs
COP	Chief of Party
DAI	Development Alternatives, Incorporated
DFID	Department for International Development
DOH	Dawn of Hope
EDA	Emmanuel Development Association
ETB	Ethiopian Birr (currency)
FHI	Family Health International
GOE	Government of Ethiopia
HAPSCO	HIV/AIDS Prevention Care & Support Organization
HIV	Human Immunodeficiency Virus
HBC	Home-based Care
HNG	Household Nutrition Garden
IP	Implementing Partner
ISAPSO	Integrated Service for AIDS Prevention and Support Organization
MEKDIM	Mekdim Ethiopia Bahir Dar Branch
M&EA	Monitoring and Evaluation Adviser
NGO	Non-governmental organization
OVC	Orphans and Vulnerable Children
PEPFAR	President's Emergency Plan for AIDS Relief
PICDO	Progressive Integrated Community Development Organization
PLWHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother-to-Child Transmission
SADC	Southern African Development Community
SMME	Small, Medium and Micro Enterprises
TP	Technical Partner(s)
UAPHAW	Urban Agriculture Program for HIV/AIDS-Affected women
USAID	United States Agency for International Development
WESMCO	Welfare for the Street Mothers and Children Organization

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EXECUTIVE SUMMARY

Ethiopia has 1,4 million people infected with HIV, and with a 4.4 percent HIV-prevalence rate, is among the five countries with highest prevalence rates in the world. According to Ministry of Health statistics[1] in Ethiopia, of the 1,4 million HIV/AIDS cases, women account for 784,000 (56 percent), children 96,000 and men more than 500,000. In the urban centers, the prevalence rate is as high as 12.6 percent and in the rural areas the prevalence rate is 2.6 percent. The same report indicates that women are particularly vulnerable to HIV/AIDS due to 'social and cultural institutions' that accept sexual violence, which leads to an increase in infection rates among females. Women between the ages of 15 and 24 are the group most affected by HIV/AIDS.

Gender inequalities are a major constraint when combating HIV/AIDS. Women seldom have enough social, cultural or economic power to refuse sex, choose a sexual partner or negotiate condom use.

Low-income women in urban areas are particularly vulnerable to HIV infection, given the limited choices they face to survive. Many women have confirmed that lack of economic opportunity is their most pressing concern. Considering the very high unemployment rate in Ethiopia, women have limited options when trying to secure jobs or generate resources to feed and support members of their households that are dependent on them. As a consequence, many women are forced to undertake commercial sex work for economic survival, while at the same time trying to avoid such high-risk professions.

A survey report[2] revealed that the most common reasons women give for becoming sex workers are financial problems (36 percent) and divorce or separation (18.2 percent). More than 28 percent of commercial sex workers were supporting other people.

The Urban Agriculture Program for HIV/AIDS-Affected Women (UAPHAW) is designed to support these low-income women and their households. The program focuses on introducing low cost, low labor-intensive urban gardening systems to low-income urban women affected by HIV/AIDS. Beneficiaries of the program have to register as participants of the program through NGOs collaborating with the project as Implementing Partner (IP) participants. The home nutrition garden (HNG) program objectives are to improve the nutritional status of the household and increase household income. The program is expected to reach 4,500 households in the urban areas of Addis Ababa and Bahir Dar by the end of December 2005.

The program has introduced two distinct technologies: the first technology is the drip-kit micro-irrigation systems of two sizes, suitable for irrigating 30m² and 100m² plots of land. Most of the gardens using this type of technology have been established on land

[1] Ministry of Health. AIDS in Ethiopia Fifth Report, June 2004
[2] Ethiopia Behavioral Surveillance Survey Report, 2002

allocated by the municipalities or sub-cities. However, there are households with enough land around their compounds (especially in Bahir Dar), that have established 30m² drip-kit gardens. The second HNG technology is known as 'grow bags'[3], which are suitable for plots of land smaller than 30m², usually operated at household level. A household garden is composed of 10 to 12 grow bags, but some households have more than that, depending on available space around the homestead. The mix of the different technology options used to support HNGs depends on land availability and specific characteristics of the households. The drip-kit irrigation systems have been shown to use about half the water and labor required for conventional gardening. In this system, water from a specific container is filtered and pulled down by the force of gravity and drips are taken to the plants. The gardens are either 30m² or 100m² and are expected to:

- Generate food for household consumption to improve the nutritional status of the people;
- Improve income levels of participating households through selling the surplus garden produce; and improve the skills and alternative livelihood of the beneficiaries.

METHODOLOGY

The Mid-Term Learning Assessment (MTLA) was based on primary research in the field, complemented by secondary information obtained from regular monitoring processes built into program activities. Progress monitoring and reporting was based on bi-weekly and quarterly reports, written by extension officers and supervisory trainers (STs) and compiled by Chief of Party in Addis Ababa. This MTLA, which took place from 20 September to 7 October 2005, covered the the project review period of July 2004 to September 2005.

An integrated approach was applied to the study and to ensure participatory evaluation at all stages of the program, both quantitative and qualitative tools were used. The study evaluated the impact of UAPHAW for HIV/AIDS-infected and affected households by interviewing representatives of all the program stakeholders, including the ECI*Africa*/DAI-Ethiopia project implementation team, IPs, which are NGOs, extension officers from IPs and HNG beneficiaries using drip-kit irrigation systems and grow bags. Interviews were conducted based on the main indicators of the program, which all the IPs and their extension officers in both Addis Ababa and Bahir Dar were very familiar with.

[3] Grow bag: a container made of gunny bag filled with fertile soil in which vegetables can be planted. Depending on the type of vegetable, a grow bag can hold one plant (e.g. cabbage) or more (e.g. carrots).

PROGRAM RESULTS

The main program results are the following:

To date 3,349 beneficiary households have been duly registered, includes 122 beneficiaries who have registered and have already started gardening, but have not harvested anything, mainly under MEKDIM in Bahir Dar, who received grants late. The ECI*Africa*/DAI team in Addis Ababa is still trying to identify IPs among the existing ones, who are willing and able to recruit more beneficiaries to increase the number of beneficiaries to the target of 4,500 beneficiary households and a corresponding number of gardens to be achieved by end of December 2005.

Overall, the number of people benefiting from HNGs is as high as 26,265. This includes 17,111 within the households and 9,154 outside the households. All the extension officers regularly records of beneficiaries inside and outside the households.

Also included are boys and girls who are orphans, either fending for themselves or being take care of by their grandparents. There are a total of 5,355 Orphans and Vulnerable Children (OVCs) – 2,661 boys and 2,694 girls – among whom 343 are heads of households (130 boys and 213 girls). However, 69.9 percent of the beneficiary households are headed by women.

A total of 1,760 drip kits have been installed at beneficiaries' gardens: 738 drip kits are for the 100m² gardens, while 1,022 drip kits are for the 30m² plots. The remaining 1,589 gardens have been established on plots smaller than 30m² using grow bags. On average, 73,7 percent of gardens are managed by women, all of whom indicated that they make decisions about spending the income from the gardens. This is not surprising since the amounts in question are very small.

The program has been a learning curve for everybody involved with the project, from the Chief of Party (COP) to the beneficiaries. Technical training covered the agronomy of vegetable crops, installation of the drip-kit irrigation systems, principles and practices of drip-kit irrigation, basic book-keeping and nutritional aspects of vegetables. To date 2,196 households have been trained in some or all of these aspects. A total of 282 contact gardeners were trained out of the beneficiary group; 144 people have been trained in palliative care; and 303 in the care of OVCs.

Vegetables (including potatoes) totaling 134,400kg have been produced from HNGs; 74.25 percent of total produce was consumed by the beneficiaries but a mere 19.28 percent was sold to generate household income; 4.91 percent was either traded or given away and 1.61 percent was spoiled, but used for making compost. The frequency of vegetable consumption has increased to about three times a week from either zero or occasionally. Over a five months period an average income of ETB24.94 per month was realized from sale of HNG produce.

Since the household income obtained is very low, it is spent on basic expenditure including food and school fees. Some beneficiaries are reinvesting into the gardens, which is a positive move towards sustainability. Expenditure towards medical services came in fourth, indicating a low priority.

CONCLUSION

The overall objective of UAPHAW – to introduce low-cost, low labor-intensive urban gardening systems to support women with low income and their households – is being met. HNGs are producing food for household consumption to improve the nutritional status of the beneficiary households. In some instances, the HNGS are producing a surplus that generates income for the household.

DRIP-KIT IRRIGATION AND TRAINING CONTRIBUTING TO THE ACHIEVEMENT OF PROJECT GOALS AND OBJECTIVES

A total of 1,760 drip kits have been distributed and installed, 738 kits on 100m² plots and 1,022 kits on 30m². Even though the kits were distributed and installed late, they are already contributing significantly to the gardening activity.

Grow bags
Grow bags are very suitable in areas where beneficiaries have only been able to access plots of land less than 30m² around their households. They have already become very popular among beneficiaries, and community members in the neighborhoods of HNG beneficiaries are already emulating the technique by using whatever containers they can obtain. On average 12-15 grow bags make a garden. A total of 1,589 grow bags have been distributed and used for gardening purposes.

Training
The home nutrition activity has provided new knowledge not only to HNG beneficiaries but to all stakeholders across the board, from the project implementation team to IPs, government officials and other development partners. Urban agriculture is new to Ethiopia and most people still find it fascinating and useful to the urban poor. Urban agriculture as practiced under HNG activity is praised for providing vegetables, improving nutritional security and improving quality of life, and for cleaning and improving the environment.

Training in the agronomic aspects of gardening has broadened the horizon of the extension officers and the beneficiaries, by using low-cost fertilization and crop-protection methods to produce organic vegetables in a cost-effective manner and averting competition with other vegetables grown with inorganic fertilizers and chemicals. Nutrition training has made an impact on the beneficiaries' food consumption pattern, as they understand the nutritive value of eating vegetables.

PROGRESS TOWARDS ACHIEVEMENT OF PROJECT GOAL AND OBJECTIVES

Project participation and garden establishment
The results from the Mid-Term Assessment exercise show that there is high participation in the nutrition garden project by households in all the areas. On average, 73.7 percent of the gardens are managed by women.

A total of 3,349 gardens have been established to date, 96.4 percent of which have been harvested at least once. Thus the activity of establishing HNGs has been highly successful.

Vegetable production and consumption
There is a marked increase in vegetable production and consumption among the HNG beneficiaries. Production has increased tremendously in the project areas from no production at all. A total of 74.25 percent of all produced HNG crops is reported to have been consumed by the beneficiary households.

HOUSEHOLD INCOME FROM HNGs AND ITS USE

The objective of increasing household income from HNGs has been only marginally realized, with only 19.3 percent of HNG produce being sold. The average household income of ETB24.94 per month (considering lean months as well) is not enough to cover the average expenditure on food estimated at ETB50.00 per month. The three main uses of the income from HNG are (i) food purchases, (ii) reinvesting in the garden and (iii) school fees, reported by 35.1 percent, 28.1 percent and 12.9 percent of beneficiaries, respectively.

IMPLEMENTING AREAS AND IP SITE DISTRIBUTION

The distribution of IPs to the implementing areas can be improved. A number of sub-cities are serviced by two IPs; for example Arada, Akaki Kaliti, and Yekka, while other areas that would like to be included in the project have no IP to service them. In future, such instances may cause overlaps and duplication of effort which could cause confusion. However, so far each IP is dealing with its own registered beneficiaries and there is exchange of information between extension officers The IPs are planning to investigate these issues.

ADEQUACY AND EFFICIENCY OF IMPLEMENTATION, AND DELIVERY OF OUTPUTS

The expected outputs of the project were rather ambitious given the shortcomings in implementation arrangements, especially due to:

Delays in the delivery of grants, which led to late delivery of drip kits and other inputs. It was discovered during the course of project implementation that the AMAP IQC-base contracts do not provide authorization for USAID contractors to execute grants under the AMAP IQC. This negatively impacted on all task orders issued by USAID Missions under the IQC, which include grants components such as UAPHAW. It took a long time to resolve the matter and it was after five months that the head of contracting authority in Washington DC authorized the contracting officer to add the 'grants under contracts' language to the AMAP IQC. The process of sorting these issues delayed the issuance of further grants under UAPHAW.

Given the geographic extent of the program, the ECI*Africa*/DAI implementation team encountered logistical difficulties. The project areas are far apart. With only one motorcycle and one vehicle for the COP and three STs in Addis Ababa transport is hardly adequate. At the field level, the extension officers also encounter transport problems for supervisory and monitoring visits to the beneficiaries; the grants to the IPs do not cover this cost item. In future ECI*Africa*/DAI should come up with a cost-effective way of address this problem.

The large number of beneficiaries (400) per extension officer makes intensive training and regular monitoring difficult.

RECOMMENDATIONS

Micro Irrigation Systems

The drip-kit irrigation systems are quite appropriate for use by home nutrition gardeners in the urban setting. However, to be able to expand its use (commercialization), it is necessary to identify a local manufacturer of the drip kits and containers to reduce delivery time and to make the kits affordable by poor urban and rural dwellers who may like to adopt this technology. The private sector should be contacted and encouraged to manufacture and supply drip kits.

The use of grow bags at household level and at institutions like schools and clinics should continue to be promoted. Grow bags are an appropriate intervention for growing vegetables for home consumption in very limited space typically found in big cities like Addis Ababa.

Government Support

The government has been very supportive of the UAPHAW program and, through municipalities and sub-cities, has allocated land for HNGs. For the program to move to the next level, beneficiary households that have higher potential for market-oriented gardening and would thus be able to produce more surplus for the market, should be assisted to either secure more arable land or look into intensive methods of vegetable production. The IPs are already discussing possibilities of launching a campaign to the

government for UAPHAW to get allocation of the areas in the cities and sub-cities that are already earmarked as 'green areas' which are supposed to be planted with trees and flowers. A submission should be made to the city managers suggesting that green areas should be turned to garden areas for the poor.

Database Development

A proper and detailed database should be set up on all issues regarding the project, especially on soil types and fertility in the different areas of the project, the amount of water available in the project areas and for how long the resource can be expected to be available for gardening, and institutional learning that is taking place about HIV/AIDS among the different NGOs.

Contingency Plan for Beneficiary Recruitment

To ensure sustainability and continuity of the project, it is necessary to choose households which have people who can play the role of 'care givers' to the people living with HIV/AIDS, including children, who have so far proved to be able to manage HNG. Care givers should be able to take over the gardening work if the registered beneficiaries pass on or if they are too weak to continue working. It is important to adhere to the beneficiary selection criteria, particularly the 'ability-based' criterion that requires the household to have able bodied people to work in the garden.

Operational and Market Issues

Access to market has not been a problem yet, but it would be necessary to plan ahead and undertake a market linkages study to look into possible market outlets for anticipated produce. To combat the problem of transportation, it might be necessary for beneficiaries to mobilize and form associations or unions to create economies of scale. Since the markets for any particular type of vegetable are not large, it is also necessary to develop a diversification plan and a phasing plan to avoid flooding the market with one type of vegetable in a given time period.

Transport arrangements for UAPHAW STs and HNG extension officers could be improved to enable them to render services to the large number of beneficiaries as the project expands. A creative and cost-effective solution should be worked out between the UAPHAW project and the IPs.

The ECI*Africa*/DAI implementation team, lead by the COP, should spearhead a dialogue with senior representatives from all the NGOs and extension officers involved in implementing the HNG. The object should be to discuss how best to deal with the distribution of IPs in the implementing areas in order to maximize on IP utilization.

1. INTRODUCTION

The HIV/AIDS pandemic has resulted in the emergence of a new category of poor people: 'the AIDS poor'. This includes households with chronically ill young adults, households headed by single parents, the elderly or children, and households fostering OVCs. Of the people living with HIV/AIDS (PLWHA) in sub-Saharan Africa, 60 percent are women. Biological and social factors make females more vulnerable to HIV. Furthermore, women bear the brunt of the social and economic costs of the epidemic. The HIV/AIDS-related death of productive members of households increases household dependency ratios, reduces household productivity and caring capacity, and also impairs the inter-generational transfer of local knowledge, practices, and skills.

Ethiopia has 1,4 million people infected with HIV, and with a 4.4 percent HIV-prevalence rate, is among the five countries with highest prevalence rates in the world. According to Ministry of Health statistics[4] in Ethiopia, of the 1,4 million HIV/AIDS cases, women account for 784,000 (56 percent), children 96,000 and men more than 500,000. In the urban centers, the prevalence rate is as high as 12.6 percent and in the rural areas the prevalence rate is 2.6 percent. The report further indicates that women are particularly vulnerable to HIV/AIDS due to 'social and cultural institutions' accepting sexual violence, which leads to an increase in infection rates among females.

Women aged 15-24 are said to be most infected, with a prevalence rate of 12.1 percent. Statistics released by the Ethiopian government at the beginning of 2005 showed that the HIV-prevalence rate in urban areas has reached a plateau. About 900,000 people have died from AIDS-related illnesses since 1986; according to the government prediction that figure will double by 2008, if current trends continue. Life expectancy has been cut by five years to 46 because of HIV/AIDS. The report also said 30,000 Ethiopians infected or affected by HIV/AIDS are receiving care and treatment. Only 9,500 Ethiopians are receiving life-prolonging antiretroviral drugs – 5 percent of those who need them. In Ethiopia, records show that there are 379, 341 orphans resulting direct from AIDS-related mortality, 269,235 people receiving care and support, and the literacy rate is at 32.8 percent.

There is therefore a pressing need to focus on efforts that will not only improve the nutrition and generate income for women affected/infected by HIV/AIDS, but also increase the number of women and OVCs to gain access to HIV/AIDS support services in areas of prevention, care and treatment.

1.1. PROGRAM CONTEXT AND STRATEGY

Women with low incomes in urban areas are particularly vulnerable to HIV infection, given the limited choices they face to survive. These women have confirmed that lack of economic opportunity is their most pressing concern. Considering the very high

[4] Ministry of Health. AIDS in Ethiopia Fifth Report. June 2004

unemployment rate in Ethiopia, women have limited options when trying to secure jobs or generate resources to feed and support their households. Many women are forced to undertake commercial sex work for reasons of economic survival, and at the same time trying to avoid such high-risk professions. A survey report[5] revealed that the most common reasons women give for becoming sex workers are financial problems (36 percent) and divorce or separation (18.2 percent); over 28 percent of commercial sex workers were supporting other people.

UAPHAW is designed to address the concerns discussed above. The program has introduced low cost, low labor-intensive gardening systems to low-income women in the urban areas of Addis Ababa, Oromia region and Bahir Dar in the Amhara region. Most women participants are either affected by HIV/AIDS or they are at risk of contracting HIV/AIDS. Other program participants include OVCs, elderly people who are taking care of orphans and/or AIDS-sick persons, women participating in high-risk activities, such as commercial sex, and a few male victims are also involved. The selection criteria also require beneficiaries to have a piece of land for gardening.

Combined with appropriate training in gardening technologies and techniques, organization, and market linkages, these urban gardening systems were expected to:

- Generate food for household consumption, to improve the nutritional status of the people;
- Improve income levels of participating households through selling the surplus garden produce; and
- Improve the skills and alternative livelihood of the participants.

1.2. DRIP-KIT IRRIGATION SYSTEMS

The HNG irrigation systems involve 30m² and 100m² drip-kit irrigation systems complemented by micro-HNG systems known as “grow bags”. The mix of the different technology options used to support gardens depends on land availability, and specific characteristics of the households. The drip-kit irrigation systems have been shown to use about half the water and about half the labor of conventional gardening requirements. Due to the extreme poverty of most of the beneficiaries and the very small plots of land, especially in urban Addis Ababa, the program initially concentrated on the goal of increasing the quantity and quality of food produced and consumed by the participating households. However, where surplus produce is available, a second, but most important, goal of increasing household income through sales of surplus produce has been promoted. The program is targeting 4,500 low-income earning women, destitute women and their families, households with OVCs, and those who are HIV-positive and/or at risk of contracting the disease, in the urban and peri-urban areas of Addis Ababa and Bahir Dar. The desired outcome is for all the beneficiaries of the program to achieve better nutrition and generate income from the HNG to support their household.

[5] Ethiopia Behavioral Surveillance Survey Report, 2002

2. THE UAPHAW PROCESS AND SERVICES OFFERED

The process of registering beneficiaries is conducted through IPs, which are mainly local NGOs. Training is an important component of the program at all levels. The COP and STs received training from technical partners (TPs) and short-term consultants. The STs in turn trained the NGO extension officers, who train contact gardeners and the beneficiaries. The main HNG system training modules consists of basic agronomy gardening skill; the drip-kit irrigation system installation, use and maintenance; low-cost fertilization using compost and animal manure where available, low-cost plant protection using traditional means (such as ash and herbs) and nutrition. In addition to formal and informal theoretical training, demonstration sites are used for practical learning. Also group gardening and experience sharing visits by contact gardeners are useful.

On the financial side, the selected IPs are considered as sub-grantees and after satisfying financial management requirements, a grant is provided to them to cover the cost of drip-kits and grow bags, as well as the cost of running the HNG program with the beneficiaries. The following IPs are already fully operational:

Table 1:Implementing Partners and areas of operation

NAME OF IP	OPERATIONAL AREAS	NO. REGISTERED BENEFICIARIES
ISAPSO	AA*-Gulele (GL) & Arada (AR)	410
WESMCO (1&2◘)	AA-Arada	418 (+400)
HAPCSO	AA-Kolfe Karanyo (KK), Akaki Kaliti (AK) and Yeka (YK)	453
BIO ECONOMY	Yeka	400
EDA	AA-Akaki Kaliti (AA-East)	410
DOH (1&2◘)	BD*- Kebele 08 & 15	400 (+400)
BMODFSTC	BD- Kebele 13	336
MEKDIM*	BD-Kebele 11	200
PICDO*	AA-Yeka	300

KEY

ISAPSO:	Integrated Service for AIDS Prevention and Support Organization
WESMCO:	Welfare for the Street Mothers and Children Organization
HAPSCO:	HIV/AIDS Prevention Care and Support Organization
ECONOMY:	Bio Economy Association
EDA:	Emmanuel Development Association
DOH:	Dawn of Hope
BMODFSTC:	Bahir Dar Medehenelem Orphans and Destitute Family Support Training Center
PICDO:	Progressive Integrated Community Development Organization

MEKDIM:	Mekdim Ethiopia Bahir Dar Branch
AA:	Addis Ababa
BD:	Bahir Dar

*Beneficiaries under PICDO and MEKDIM have just started

◘ The two IPs have just registered the second groups of beneficiaries who are getting their gardens ready, but have not started harvesting.

3. PURPOSE AND OBJECTIVES OF THE EVALUATION

The Mid-Term Assessment was conducted to assess progress, achievements, impact and visibility attained from the implementation to date, and how it has contributed to the achievement of project goals, objectives and results as stipulated in the project document.

3.1. THE SPECIFIC OBJECTIVES OF THE REVIEW

The specific objectives of the review are:

- To assess the extent to which project activities are contributing to the achievement of project goals and objectives;
- To assess progress that has been made towards the achievement of project goals and objectives;
- To assess the adequateness and efficiency of the implementation arrangements in the delivery of expected outputs;
- To document results, impact and visibility attained so far;
- To highlight experiences, successes, challenges, strengths, and weaknesses;
- To identify opportunities for improving project performance;
- To draw and document lessons learned and/or best practices and provide recommendations on how they can be applied in improving project performance;
- Determine the relevance of the program in relation to the existing needs of the stakeholders and environment; and
- Assess the long-term sustainability of the program interventions.

3.2. SPECIFIC TASKS

To accomplish the objectives specified, the following specific tasks were undertaken:

- A review of progress made in the implementation of project activities to date and an assessment of the development impact of the investment. A review of the existing documentation included a project document, a program implementation plan, baseline data report, project workplan and bi-weekly and quarterly progress reports.

- Interviews and discussions were conducted with all key stakeholders including project staff, donors, grantees, government officials and project beneficiaries to ensure that evaluation is carried in a participatory manner.
- Field visits were undertaken to relevant partner institutions and a representative sample of beneficiaries in Addis Ababa and Bahir Dar.
- The compilation of findings, analyzing data, the production of a draft set of recommendations and compilation of a preliminary report.
- The presentation of the preliminary findings to the donor, government officials, ECI*Africa*/DAI and other key partners to obtain their input.
- The production of a final report incorporating the comments on the preliminary report. The report should document lessons learned and provide recommendations to guide the implementation for the remaining period of the project.

3.3. DELIVERABLES

The mid-term evaluation report contains:

- An assessment of project performance and impacts of the project based on the performance monitoring plan;
- Main lessons learned during the implementation of project activities; and
- Recommendations for actions and interventions that should follow to improve project performance.

4. UAPHAW MONITORING AND EVALUATION SYSTEM AND PLAN

At the beginning of the project, a comprehensive, integrated and participatory monitoring and evaluation system and plan were designed to ensure proper collection of information throughout project implementation. The UAPHAW program monitoring system is organized in a way that data collection is conducted by different groups and information flow is in all directions during the implementation of the program, so enabling measurement of the program impact at the end of the day. Monitoring is done by IPs, the ECI*Africa*/DAI technical team, and Daystar Consult International, a research consultant firm contracted to undertake quarterly surveys of 10 percent of the project participants. The purpose of such an elaborate monitoring system is to ensure that the impact of HNGs using drip irrigation technology on HIV/AIDS-affected households in the area of nutrition and income generation is fully demonstrated and measured.

4.1. MONITORING BY IPS

Development agents assigned by the implementing partners are full-time employees responsible for monitoring and day-to-day follow up of the activities. They make frequent supervision of field activities and note the progress of the activities. For recording the required data, IPs fill in the quarterly monitoring formats and submit the

copy to ECI*Africa*/DAI STs on due dates. The STs and the development agents conduct monthly meetings to discuss the progress of the activities and propose solutions for problems encountered and draw monthly operational plans and submit a copy to the COP.

4.2. MONITORING IN THE FIELD BY SUPERVISORY TRAINERS

The STs in Addis Ababa and Bahir Dar areas are assigned to specific IPs operational sub-cities and are responsible for the follow-up on activities in their respective sub-cities. The STs are normally in the field for supervision three-four days a week. Bi-weekly and monthly activity monitoring reports are produced by STs. The information is carefully recorded and has been analyzed together with other information for impact assessment. Standard checklists are used in the monitoring process.

The COP undertakes regular supervisory activities at grass-root level in all the sub-cities and discusses with development agents (NGO) the progress of the project or lack thereof. He technically evaluates the performances of the vegetable gardens and advises STs and the development agents on ways of improving project implementation.

4.3. MONITORING AT UAPHAW PROGRAM OFFICE LEVEL

The UAPHAW staff conducts weekly, monthly and quarterly meetings to discuss the achievements and the problems encountered, based on their field visits.

Weekly meeting – the COP and STs meet at the end of the week to review plans and achievements for the week and discuss the plan for the week to follow.

Monthly meeting – the COP and STs meet at the end of the month and discuss the achievements of the month and unfinished work to be considered in the month to follow. Minutes of the meeting will be prepared for follow-ups.

Quarterly meeting – the annual plan is divided into four quarters. At the end of every quarter, a meeting is held on which all the staff discuss the plan, achievements and variances of the activities of each IP. If there is unfinished work, it will be included in the next quarter and expenditure for each activity for the quarter is also discussed based on the quarterly financial reports of the IPs.

Surveys – Quarterly surveys of the progress of the activities was supposed to be conducted by the research consultant during which 10 percent of the beneficiaries were to sampled and the same questionnaire that was used for the baseline survey was to to be used to generate data. The consultant who carried out the baseline survey of UAPHAW produced the report in June 2005. The baseline survey was conducted after the households received training, received drip irrigation kits, and they had signed the beneficiary registration forms, but this was before the first harvest. For the quarterly surveys, the same households were to be followed for the life of the project.

The intervals of the quarterly surveys were initially planned as follows:

May – 1st quarterly survey
August – 2nd quarterly survey
November – 3rd quarterly survey

However, due to delays, the research consultant has not produced any quarterly reports so far.

Recipients of HAPSCO's home-based care (HBC) program who are not beneficiaries of the HNG program were also surveyed during the baseline survey and during the evaluation, to serve as a control group. When drawing this sample, care was taken to keep as many factors the same between those households that receive the kit and those that don't. The control group is drawn from the same sub-city (Akaki-Kaliti) as the project participants in that area and they also have been participating in HAPCSO-HBC project for the same amount of time.

4.4. PEER GROUP MONITORING AND EVALUATION

The STs from ECI*Africa*/DAI and development agents from all IPs undertake regular visits to the project sites in a group and monitor the quality of project implementation and comparison is made among the activities of the different IPs. This type of peer-group activity monitoring is expected to bring positive and healthy competition among the IPs. The group produces a report. Clear and frank opinion is included in the report.

4.5. FIELD VISIT BY IP STAFF

Improved sharing of ideas by the IPs will enhance the project performance. The COP has initiated intra- and inter-sub-city field visits by IP officials and will be organizing a tour of HNG activities with the IPs immediately after the next quarterly review meeting. Already experience sharing visits among the beneficiaries in the presence of IP senior staff is already taking place. These different information sharing activities will lead to better understanding and ownership of the program.

It is also important to include government in the dialogue. Discussions with city and sub-city administrative structures have been held to advocate the contributions of urban agriculture in the livelihoods of urban households. Such discussions are meant to promote further reinforce government support towards the initiative UAPHAW.

4.6. MONITORING BY GOVERNMENT

Local government structures have been encouraged to undertake monitoring of the progress of activity implementation in their respective areas. Many, including high level officials such as mayors, the sub-city Manager and other government ministry officials have attended all the 'Vegetable Days'.

4.7. MONITORING BY DONORS AND OTHER PARTNERS

The donor (USAID), FAO and other federal agencies have made visits to the project sites and made observations on the progress of the activities and interacted with the beneficiaries and IPs at different times. They have been encouraged to attend Vegetable Days and USAID's CTO makes regular one to one meetings with the COP to discuss project progress.

4.8. FINANCIAL MONITORING

The COP, the assistant program administrator and the accountant make periodic visits to the IPs' offices to monitor expenditure vis-à-vis physical activities and to check whether USAID-Ethiopia financial procedures are adopted and followed.

5. MID-TERM LEARNING ASSESSMENT

The internal impact evaluation conducted by ECI*Africa*/DAI's monitoring and evaluation advisor (M&EA) is based on primary research in the field, complemented by secondary information obtained from the regular monitoring and evaluation process built into the program activities as described in the previous section.

The M&EA worked hand in hand with UAPHAW technical staff in Addis Ababa and in Bahir Dar (including the COP and STs). In addition to these teams, each IP assigned an extension officer and a project coordinator to facilitate the evaluation process in their respective areas by organizing the beneficiaries and facilitate the interviews with the beneficiaries. In this regard, the IP extension officers acted as the field supervisors. They were very helpful in organizing focus group discussions at group HNG sites as well as at individual HNGs. They made the beneficiaries to feel at home with the monitoring group and sometimes helped with interpretation. The M&EA worked together with the COP and STs to ensure data quality control.

5.1. METHODOLOGY AND APPROACH

An integrated approach, which combines a wide range of tools to produce the best quality evaluation, was applied to this evaluation. To ensure participatory evaluation at all stages of the program, both quantitative and qualitative tools were used. This section provides a description of the sampling for the survey, questionnaire usage data collection and data analysis. In conclusion, the main limitations and challenges encountered by the implementing teams, lessons learnt and suggestions for future sustainability were given.

The study evaluated the impact of UAPHAW by interviewing representatives of all the program stakeholders:

- The ECI*Africa*/DAI-Ethiopia project implementation team;
- IPs that are NGOs;
- Extension officers within the IP institutions; and
- Drip-kit irrigated-HNG beneficiaries.

Interviews were conducted based on the main indicators of the program, with which all the IPs and their extension officers in both Addis Ababa and Bahir Dar were familiar.

5.2. QUESTIONNAIRE DESIGN

The questionnaire used for the evaluation is the same as the HNG quarterly survey questionnaire, which was designed by the UAPHAW project team at the beginning of the program's implementation. The same questionnaire is used by the research consultant for quarterly assessment. Before using it for the initiating field work, the research consultant pre-tested the questionnaires in one area of Addis Ababa called Akaki-Kaliti.

5.3. STRUCTURED QUANTITATIVE SURVEY

All the IPs (five in Addis Ababa and two in Bahir Dar) that have registered beneficiaries who have harvested vegetables once or more times, were interviewed. In each case a senior member of the IP made a presentation summarizing the program objectives, major activities accomplished to date, program area(s), the number and characteristics of the beneficiaries registered, program implementation strategy, and what they perceive to be the main challenges and lessons learned from the HNG experience.

Two of the IPs (PICDO in Yekka, Addis Ababa and MEKDIM in Bahir Dar) were excluded from this formal quantitative survey because they started much later due to delays in obtaining their grants and their beneficiaries have yet to get their first vegetable harvest. They, however, provided invaluable information on the project progress and problems encountered so far.

The formation of focus groups from the beneficiary population was purely random where those who happened to be on the plots were sampled. However, for the beneficiaries operating at the household level, the evaluation team depended on the extension officer to sample the individual households to be visited and interviewed. Representative beneficiaries at different locations and under the umbrella of different IPs responded to questions during focus group discussions as indicated in Table 2.

Table 2: Interviewed Beneficiaries

Implementing Partner	Area (sub-city or kebele)	Representative Beneficiaries participating in discussion
ISAPSO	Arada	35 people (two focus groups of 25 old members and 20 new members out of about 50 beneficiaries present at the communal plot of garden)
WESMCO	Arada	40 people (two focus groups of 24 and 16 people in focus group out of 80 people who were present at the communal plot of garden)
HAPSCO		16 people: 10 women on communal plot plus 6 beneficiaries at household level
BIO-ECONOMY	Yekka	10 women managing shop and restaurant
EDA	Akaki Kaliti	Focus group of 15:10 women, 3 OVCs and 2 men (all operating at household level)
DOH		The whole group was having a celebration of the Ethiopian New Year. At DOH's premises, more than 300 were present but could not conduct formal interviews
MODFSTC	Yakatit 23 School Bahir Dar	8 OVCs in focus groups out of 18 club members; plus 6 beneficiaries at household level

5.4. QUALITATIVE OPEN -ENDED INTERVIEWS

The interviews with the beneficiaries were conducted using the same HNG quarterly survey questionnaire which the research consultant is using. However, the M&EA modified it to make most of the questions open-ended to promote participation by as many beneficiaries in a focus group as possible, to facilitate easy dialogue with individual beneficiaries, and to solicit comments and discussion. A focus group discussion is illustrated in Photograph 1. The information gathered varied depending on the interviewees and can be categorized as follows:

5.4.1. Discussion with ECI*Africa*/DAI program team

The COP and his team gave a comprehensive overview of the program in Addis Ababa and Bahir Dar covering:

- The timeline of activities, major undertakings and happenings by quarter;
- The purpose, objectives and targets of the program;
- Implementation approaches and methodologies;
- Program progress, achievements and indicative outcome and impacts;
- Problems, challenges and likely solutions; and
- Lessons learned.

5.4.2. Interviews/discussions with senior representatives of IPs

- Implementation approaches and methodologies;
- Program progress, achievements and indicative outcome and impacts;
- The new knowledge and experiences from the HNG drip-kit systems and benefits to the institution;
- Highlights of achievements; and
- Problems, challenges, weaknesses and lessons.

5.4.3. Interviews/discussions with extension officer/project coordinator of the IPs

Review of results based on performance indicators defined client at the beginning of the program, covering:

- General information about the beneficiaries and their characteristics;
- Type of beneficiaries;
- Training of beneficiaries;
- Production, utilization;
- Sale of vegetables and income from the HNGs;
- HIV/AIDS behavior change;
- Cost effectiveness of program;
- Highlights of achievements; and
- Problems, challenges, weaknesses and lessons.

5.4.4. Issues tackled during interviews with the beneficiaries

- Whether beneficiary has a garden and whether she/he is responsible for the garden;
- Whether she/he has been trained, and if so, in what;
- Who helps with garden work;
- If there are sales, where produce are sold, how much money is obtained from HNG;
- Problems encountered selling produce;
- Who takes decisions about the use of money from the HNG;
- The main uses of money from the HNG;
- Other benefits from the garden;
- Impact of HNGs on household diet and food consumption;
- Impact of drip kit irrigation system on gardening;
- Did beneficiary have a garden before the HNG program;
- What beneficiary has learnt about HIV/AIDS; and
- General comment

Photograph 1: Focus-group discussion with women in Akaki-Kaliti Sub-city in Addis Ababa

Photo UAPHAW, October 2005

5.5. DATA ANALYSIS

The STs assisted with the compilation of overall quarterly survey data into one data frames for both Addis Ababa and Bahir Dar using Microsoft Excel. Data from completed IP indicator questionnaires and from beneficiary focus groups and individuals were captured by the M&EA in SPSS worksheets, cleaned and analyzed using SPSS 10.0.

6. PROGRAM RESULTS

In this section, the main results of UAPHAW and the results of the discussions and interviews with UAPHAW stakeholders are summarized. The evaluation activity is focusing on assessing progress, achievements, impact and visibility attained from the implementation to date, and how they have contributed to the achievement of the project goal, objectives and results.

6.1. NUMBER OF BENEFICIARIES REGISTERED/NUMBER OF GARDENS ESTABLISHED TO DATE

Program beneficiaries are recruited, registered and supported by Ethiopian-based NGOs and associations referred to as IPs. The survey involved seven of the nine IPs: two in Bahir Dar and five in Addis Ababa. At the time of the mid-term evaluation in September 2005, six of the IPs have either met or exceeded the initial set targets of beneficiaries they were expected to register, as shown in Table 3. Dawn of Hope in Bahir Dar has doubled the number initially planned; WESMCO has also registered another 400 beneficiaries and it has already been allocated land for HNGs. However, two of the IPs, PICDO in Addis Ababa and MEKDIM in Bahir Dar, received grants late and therefore have just started establishing HNGs and are still registering beneficiaries.

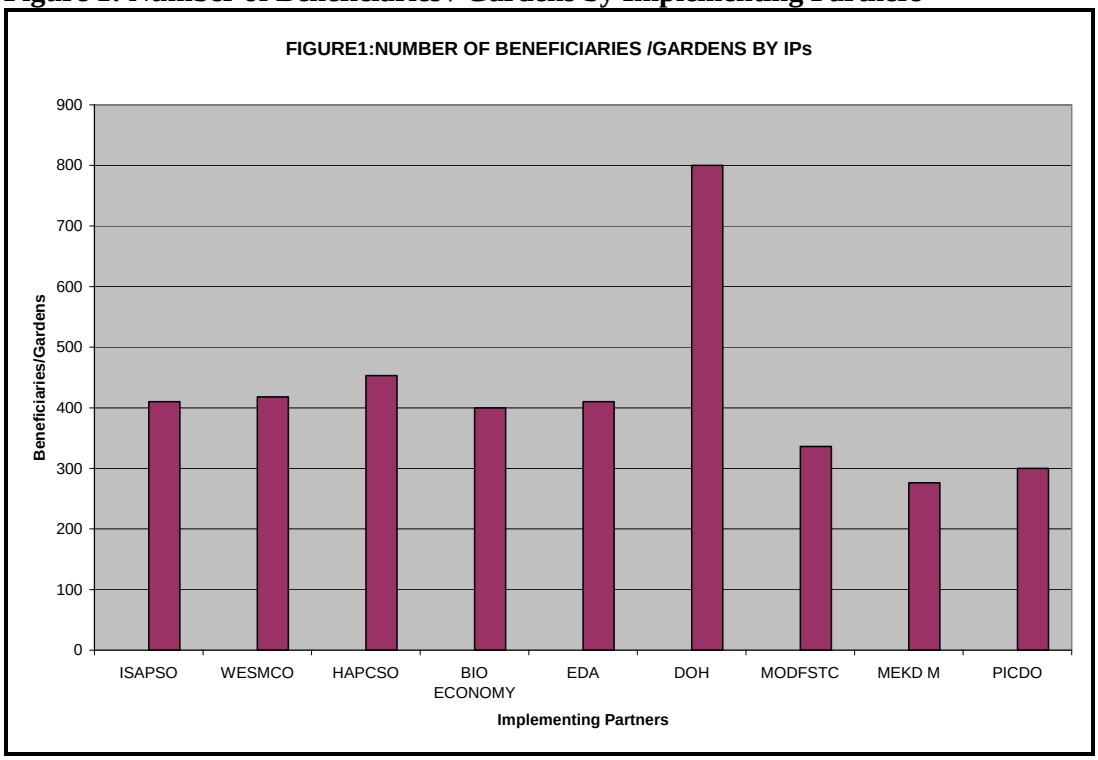
The overall target is 4,500 beneficiaries by the end of the program in December 2005, in Addis Ababa and in Amhara Region. To date, 3,227 beneficiary households have been dully registered and have established gardens. An additional 576 beneficiaries have been registered and are in the process of getting their gardens established.

Table 3: Registered Beneficiaries / Established gardens by Implementing Partners

IP	AREAS	TARGET BFR/HNG	REG.BFR/HNG	100 sq.m	% of gard.	30 sq.m	% of gard	G/B AGS	%of gard
ISAPSO	GL, AR	400	410	35	8.8	200	48.8	175	42.7
WESMCO	AR	400	418	80	19.1	156	37.3	182	43.5
HAPCSO	KK, AK,Y	400	453	60	13.2	126	27.8	267	58.9
BIO ECONOMY	YK	400	400	82	20.5	153	38.3	165	41.3
EDA	AK	400	410	84	20.5	150	36.6	176	42.9
DOH (BD)	KB 08,15	400	800	353	44.1	128	16	319	39.9

MODFSTC (BD)	KB 13	400	336	44	13.1	57	17	235	69.9
TOTAL		2,800	3227	738	22.9	970	30.0	1519	47.1
New Implementing Partners									
MEKDIM	KB11	300	276						
PICDO	YK	400	300			52		70	
				738		1022		1589	

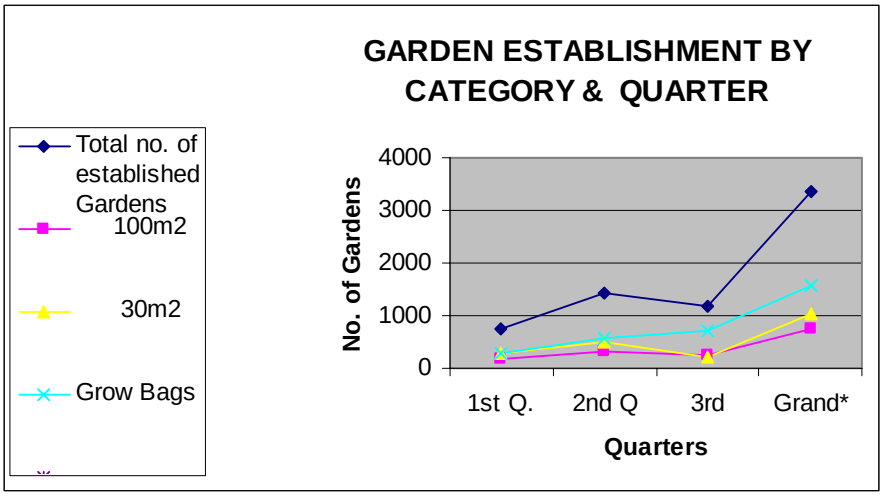
Figure 1: Number of Beneficiaries / Gardens by Implementing Partners



In addition to the immediate beneficiaries who own and manage the HNGs, other members of the participating households, neighbors, relatives, and friends are also benefiting. Beneficiaries from the gardens within the households number 17,111 people, while an additional 9,154 people are benefiting from outside the households.

Garden establishment was a gradual process that required resilience and patience on the part of the entire implementing team. At the beginning it was difficult to convince beneficiaries to wait for the drip-kit irrigation systems that were delayed for a long time. However, once the drip kits were installed and operation, especially on the demonstration plot, it became easier to recruit beneficiaries. Figure 2 below shows the trend of garden establishment over time until the period of the mid-term assessment. More details of progressive HNG achievements are presented in Appendix 1

Figure 2: Garden establishment by category over time



The graph shows that for the three systems of gardening (100m², 30m² and grow bags) there was a gradual increase in the number of gardens established. During the 2nd quarter, there was a decline on the number of 30m² gardens, but from the 3rd quarter (when the drip kits were distributed and installation began) there is a clear increase in the number of gardens established.

The uptake of the grow-bag system, which is almost exclusively at households and schools, is greater than for drip kits throughout the entire implementation period, signifying two things:

- Preference of beneficiaries to operate individual HNGs at household level rather than at plots allocated by the municipalities in the city/sub-city; and
- The scarcity of big plots of land in the cities that would be suitable to install drip kits.

6.2. DRIP KIT MICRO-IRRIGATION SYSTEMS

The program has introduced simple micro-irrigation systems and gardening technologies to reduce labor, water use, and land requirements for the poor urban households affected by HIV/AIDS. The beneficiaries have embarked on drip-kit micro-irrigation systems for either 30m² or 100m² plots It is worth noting that the irrigation equipment was only delivered during the 3rd Quarter (December 15 2004 to March 14 2005). During this period 564 drip kits were distributed (292 kits for 100m² and 272 kits for 30m²). However, only 174 kits were installed (7 units for 100m² and 167 units for 30m² plots). During the 4th quarter, the 717 drip kits (235 kits for 100m² and 482 kits for 30m² plots) were distributed, out of which 599 kits were installed. The total figures of installed kits obtained during evaluation are 738 drip kits for 100m² and 1022 kits for 30m² plots, including the two areas of PICDO and MEKDIM, as per Table 3.

The size of the drip kits installed depends on the availability of land and water. Households with 30m² or more of land space around their homesteads have installed drip kits at their homes. However, most of the households with 30m² and all of the households with 100m²

drip kit systems are operating in groups on government land allocated through municipalities or sub-cities. Such groups are composed of varying numbers of beneficiary households, ranging from 16 to over 200, depending on the plot allocated to them.

The HNG drip kit systems provide the HIV/AIDS-affected households the opportunity to improve household nutrition and the possibility of earning income though sale of surplus produce. The system has been shown to use less than half the water and about half the labor of the conventional garden requirements, and the beneficiaries have affirmed this, requirements for weeding are also said to be minimal.

However, as shown in Table 3, most beneficiaries have small plots that are suitable for the grow bag system (see Photograph 2), produce from such plots suffices for mainly for home consumption. Overall, 47,1 percent of the established gardens are homestead bound based on the grow bag system, 30 percent are 30m²-size plots and only 22,9 percent of the gardens are 100m² plots. This is not surprising, given the high population density in urban centers, especially in Addis Ababa. As a matter of fact it was much easier to obtain plots of land for gardening in Bahir Dar than in Addis Ababa. Photograph 3 gives an idea of the size of plots; three rows are approximately 30m².A garden has to have not less than 10 grow bags, otherwise the space is considered too small to start a garden.

Photograph 2: Vegetables in grow bags, usually at the household premise

Photo UAPHAW, September 2005

Photograph 3: A sample of a Home Nutrition Garden with Drip-Kit Irrigation

Photo UAPHAW, September 2005

The initial expectation that the gardening plots could be found within the premises of the beneficiary households did not materialize due to the extreme state of poverty of most of the HIV/AIDS-affected families and women. Most of them had no space at all in the vicinity of their households. As such, it was necessary to organize the beneficiaries into groups and approach the municipality to provide pockets of idle plots of land. This strategy has been successful in both Addis Ababa and Bahir Dar. Municipal authorities in both cities have enthusiastically allocated unused plots within the cities to HIV/AIDS-affected families for gardening. The largest groups to be allocated land by a municipality consists of the 280 beneficiaries growing potatoes and 120 beneficiaries growing vegetables, both groups organized by the Dawn of Hope in Bahir Dar.

6.3. ORPHANS AND VULNERABLE CHILDREN SERVED BY THE PROGRAM AND CHARACTERISTICS OF HOUSEHOLD HEADS

The intended beneficiaries of the UAPHAW program are low-income earning HIV/AIDS affected women; women who are at risk of contracting HIV/AIDS, such as sex workers; and orphans who lost their parents through AIDS and are now living alone or with grandparents or other relatives.

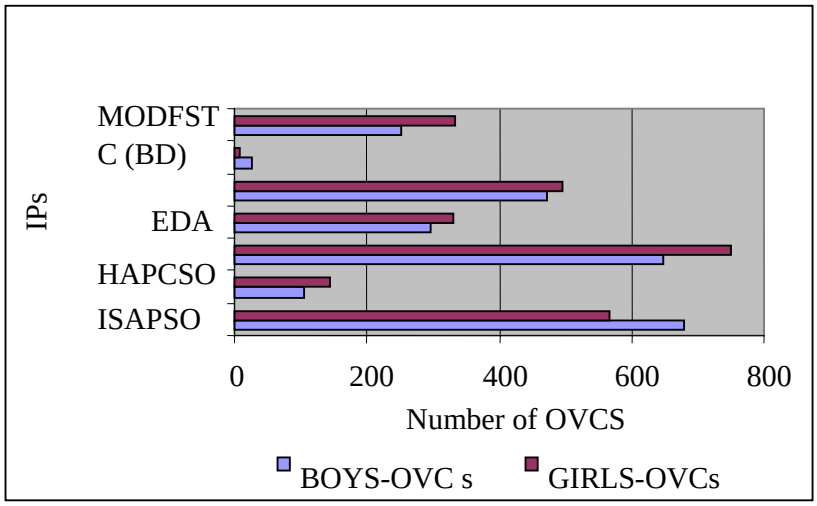
Program beneficiaries were selected based on their social background. Strict selection criteria were set up at the beginning of the program to guide the selection process. The ECI*Africa*/DAI team in Ethiopia (the COP and STs) worked closely with the IPs and the Kebele and sub-city management authorities to ensure that households with disadvantaged

individuals were chosen. Table 4 shows the number of OVCs served by the program and the different types of household heads among the beneficiary households.

6.3.1. OVCs

A total of 5,355 OVCs, (2,661 boys and 2,694 girls) have been served by the program to date. This figure excludes beneficiaries served by PICDO in Yekka sub-city in Addis Ababa and those served by MEKDIM in Kebele 11 of Bahir Dar. When these two areas are considered, the number of OVCs increases to 6,275 (2,953 boys and 3,322 girls). In almost all the areas, the number of the girls is slightly higher than boys in all the areas of the project as illustrated in Figure 2. The overall proportion is 49,7 percent boys and 50,3 percent girs. Figure 3 and Table 4 show more information by IPs about OVCs.

Figure 3: Boys and Girls Orphans and Vulnerable Children



A focus group of eight OVCs was interviewed at Yakatit 23 Full Cycle School. All of them were orphaned girls who are supported by Bahir Dar MODFSTC, in collaboration with the School Coordinator for the Girls' Club. Eighteen girls (all of them orphans) are involved in the HNG using 142 grow bags to grow vegetables on the school compound.

The girls were trained by the extension officer about gardening basics, at the time of the evaluation they had harvested vegetables eight times, for a total of 80kg, and have made ETB 80 in sales. They normally sell to the school community and to other people who pass by the school, to parents and relatives of the pupils.

The OVC gardening club at Yakatit 23 Full Cycle School intends to open a kiosk near the school to sell their products. So far, the objective has been to generate income to enable them to buy school supplies such as pencils, pens and exercise books. However, the money from sales of vegetables has not been adequate to cover school stationary for all of them. None of the produce has been used for consumption and the children have not been taught about the nutrition aspects. The children are hoping that after getting more land they would like to expand their garden, increase production and sales and encourage other youths with similar problems to join the club.

6.3.2. Heads of Households

The HIV/AIDS pandemic has resulted in the emergence of a new category of poor people: "the AIDS poor". This includes households with chronically ill young adults, households headed by single parents, the elderly or children; and households fostering OVCs. The death of productive members of households due to HIV/AIDS increases household dependency ratios, reduces household productivity and caring capacity, and also impairs the inter-generational transfer of local knowledge, practices, and skills.

The results of the analysis indicates that out of 3,349 households that have established HNGs, 10 percent are headed by children, 13 percent by elderly people and 62 percent by young-to-middle-aged women, and only 15 percent are headed by young to middle-aged males. The proportion of female-headed households increases to 69,9 percent when the elderly female heads are considered with the rest of the female household heads. Table 4 and Figure 4 illustrate this phenomenon.

Figure 4: Heads of Households

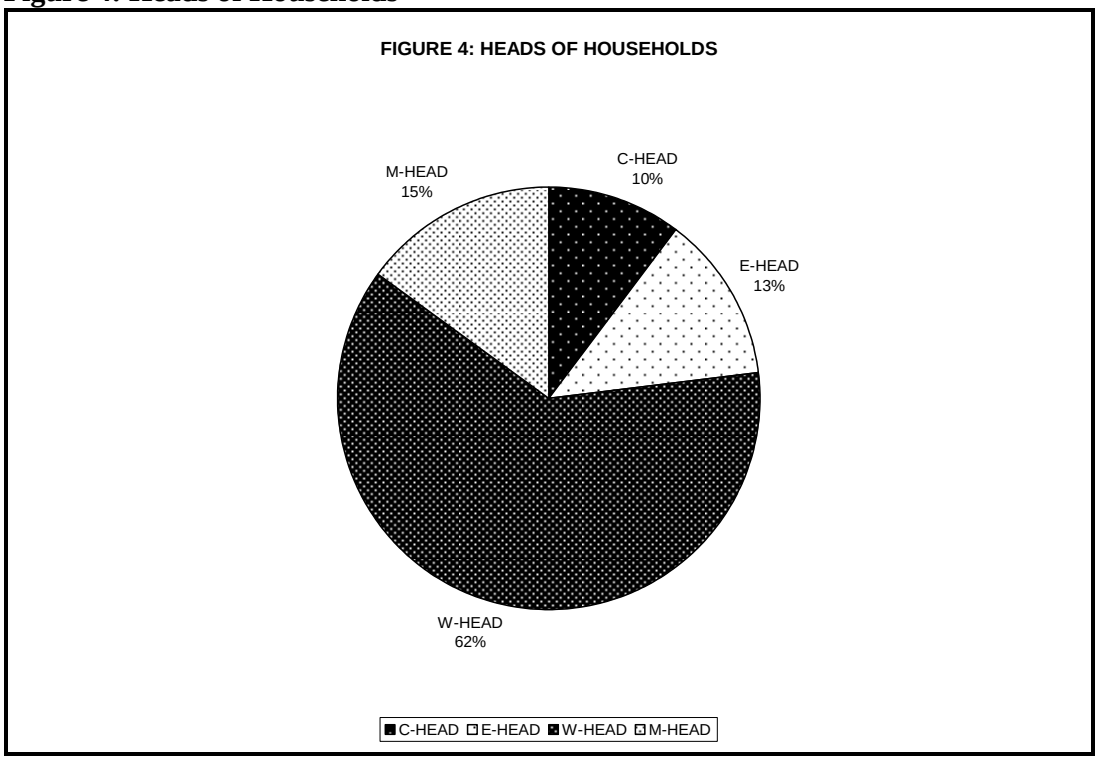


Table 4: Orphans and Vulnerable Children served by program and heads of households (MEKDIM and PICDO)

IP	AREAS	OVCs	BOY-OVCs	GIRL-OVCs	C-HEAD	BOY HEAD	GIRL HEAD	OLD HEAD	MALE OLD HEAD	FEMALE OLD HEAD	WOMEN-HEAD
ISAPSO	GL, AR	1,247	680	567	14	5	9	44	37	7	294
WESMCO	AR	248	104	144	66	41	25	88	67	21	200
HAPCSO	KK, AK,Y	1,398	648	750	90	39	51	89	37	52	274
BIO ECONOMY	YK	627	296	331	16	4	12	40	7	33	337
EDA	AK	969	473	496	59	19	40	45	6	39	357
DOH (BD)	KB 08,15	280	208	72	26	19	7	89	12	77	353
MODFSTC (BD)	KB 13	586	252	334	72	3	69	33	0	33	264
TOTAL		5,355	2,661	2,694	343	130	213	428	166	262	2,079

6.3.3. Gardens Managed By Women

On average, 73,7 percent of all the gardens that have been established are managed by women. Surprisingly, over time and as the number of gardens increased, the proportion managed by women decreased, such that during the 1st quarter, when only 16,8 percent of the target gardens had been established, 93,93 percent of the gardens were managed by women and all of them were making decisions about utilization of the produce from the garden, including decisions about spending income from the garden. By the 2nd quarter, 31,5 percent of target number of gardens had been established and only 59,23 percent were fully managed by women, all of whom were able to make decisions about spending whatever income they obtained from the gardens. At the time of evaluation, which was during the 6th quarter, 3,349 (74,4 percent) gardens had been established and 67, 8 percent of them were fully managed by women, all of them (100 percent) in charge of decisions about spending income from the sale of HNGs. This figure is much lower than the average percentage of gardens managed by females in the baseline survey, which was 78,42 percent.

The actual numbers of women managing the gardens is variable from place to place. The minimum proportion of gardens managed by women (48 percent) was recorded in Arada sub-city among the beneficiaries facilitated by WESMCO, while the highest was 94 percent recorded in Kebele 08 and 15 supported by the Dawn of Hope.

6.4. TRAINING PLAN

6.4.1. Training of Trainers

Training of trainers commenced in the 2nd quarter of the program; three project supervisory trainers received training in Addis Ababa from the project director/COP, and the technical consultant from Zimbabwe trainers in Addis Ababa. Technical partners including the Urban Agriculture Departments, Selam TVC, Family Health International (FHI)-Ethiopia, Linkages Project and Agri-tech Systems. The STs with the help of the COP, trained eight NGO extension officers from ISAPSO, HAPSCO, BIO ECONOMY, EDA and WESMCO during January 3-8 2005. The short course covered the major aspects of HNG, including:

- Agronomy of vegetable crops;
- Principles and practices of drip irrigation;
- Basic record keeping; and
- Nutrition aspects of vegetables.

In addition to the theoretical training, practical sessions were conducted at the demonstration site established in Bole Secondary School, where installation and maintenance of the drip-kit system were demonstrated. A similar training was conducted in Bahir Dar for extension officers of DOH, MODFSTC and MEKDIM. It was facilitated by the STs in Bahir Dar, with the help of the Urban Agriculture office and Amhara region HIV/AIDS Prevention and Control Office.

Training modules for IPs and beneficiaries are prepared in both Amharic and English to ensure understanding and clarity.

6.4.2. Training of Beneficiaries

The trained extension officers with the assistance of STs have trained contact gardeners and the other HNG beneficiaries as summarized in Table 5.

Table 5: Trained Beneficiaries

IPs	Households trained	Contact gardeners trained	Palliative care trained	OVC-care trained
ISAPSO	369	41	25	25
WESMCO	360	40	12	12
HAPCSO	453	40	0	180
BIO ECONOMY	400	40	2	40
EDA	410	41	16	16
DOH (BD)	204	40	89	30
MODFSTC (BD)	0	40	0	0
Total	2196	282	144	303

All HNG beneficiaries who have already harvested vegetables from their gardens have been trained in the agronomy of vegetable crops and principles and practices of drip irrigation. However, all the beneficiaries registered by MODFSTC in Bahir Dar have not been trained in the nutrition aspects of vegetables.

All the beneficiaries who have been registered by the two IPs (PICDO in Addis Ababa and MEKDIM in Bahir Dar), still have to be formally trained in all aspects of home nutrition gardening. However, they have been receiving informal guidance and assistance from the contact gardeners and the extension officers. In the meantime, the STs are assisting the extension officers concerned to organize formal training sessions for all the beneficiaries.

7. HNG PRODUCTION, CONSUMPTION AND SALES

The two principal objectives of the program are to produce food for household consumption to improve the nutrition status of the people and to generate income from sales of surplus produce. Two additional objectives have been achieved, namely self-employment on gardening and environmental care.

Overall, 74,4 percent beneficiary registration and garden establishment have been achieved. On individual area level, a 100 percent success rate has been achieved in all the program areas where grants and drip kits were received on time. In areas where grants and drip kits were received late, the garden establishment rate is lower. That is the case in Yeka sub-city supported by PICDO, which has so far achieved a 75 percent success rate in terms of beneficiary registration but still has to establish the gardens. In Bahir Dar, in Kebele 11 served by MEKDIM, beneficiaries have been registered but they have not yet established any gardens, while in Kebele 13, supported by MODFSTC, only 84 percent of the target gardens have been established.

A large range of vegetables are grown by the beneficiaries, including, but not limited to, kale, Swiss chard, lettuce, cabbage, red-beet, onions, garlic, spinach, cauliflower,

cucumber, tomatoes, green pepper, chilli pepper and other spices. Whereas production at homes is geared to preference for home consumption, production on group sites is market oriented. The amounts produced, consumed, traded or given away and sold for cash is indicated in Table 6. The figures did not take into account the beneficiaries that have just started, supported by PICDO in Addis Ababa and by MEKDIM in Bahir Dar.

All implementing NGOs are raising seedlings on nurseries for distribution to the beneficiaries. In Bahir Dar, MODFSTC specializes in seedling production and sells the seedling to other NGOs as needed.

7.1. HOUSEHOLD PRODUCTION

Most of the gardens were planted during the 4th quarter (March 15 to June 14 2005), but there are variations from one area to another. Five of the IPs in Addis Ababa (ISAPSO, HAPSCO, EDA, BIO-ECONOMY and WESMCO) started implementing the HNG programme before they received the drip-kit irrigation systems because of delays in delivery of the kits. Likewise, in Bahir Dar, DOH supported its beneficiaries to undertake preparatory work before receiving UAPHAW grants for buying inputs. By the time the grants were disbursed and the drip kits were delivered to them, the beneficiaries were already registered, contact gardeners were trained, and garden plots were prepared.

The Bahir Dar (DOH) group of beneficiaries was the first to celebrate the first 'Vegetable Day' in the 4th quarter, which signifies the first harvest. Most of them had planted potatoes as their first crop and planted rice thereafter because of too much rain. The second phase of beneficiaries assisted by DOH planted vegetables first and then rice. WESMCO, ISAPSO, EDA and BIO ECONOMY celebrated vegetable days on different dates during the 5th quarter (15 June to 14 September 2005). Since then most beneficiaries have harvested vegetables two to three times depending on the type of vegetable.

Table 6: Home Nutrition Garden Total Production, consumption and sales (excluding PICDO and MEKDIM beneficiaries)

	Minimum (kg)	Maximum (kg)	Sum (kg)	Mean (kg)	% of total prod
Quantity of vegetables produced (kg)	1.81	80.88	134,400.20	41.65	-
Quantity of vegetables from HNG consumed (kg)	0.96	52.56	99,792.00	30.92	74,25
Quantity of vegetables traded or given away (kg)	0.18	7.03	6,598.50	2.04	4,91
Quantity of vegetables spoiled (kg)	0.14	3.01	2,098.70	0.65	1,61
Quantity of HNG vegetables sold (kg)	0.52	22.93	25,906.00	8.03	19,28

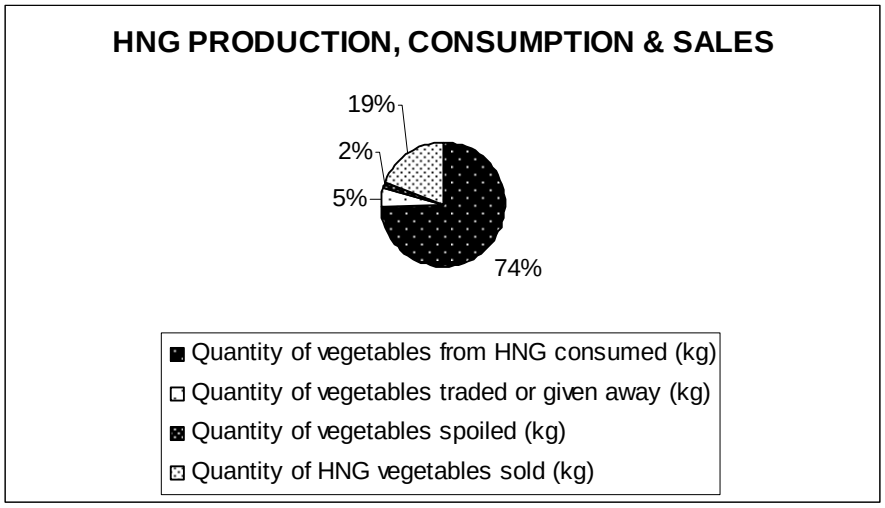
Table 6 demonstrates that the quantity of vegetables produced from HNGs is significant considering that most of the beneficiaries did not produce vegetables before joining UAPHAW. On average, the proportion of production consumed (74,25 percent), is quite high. This was expected, since the first objective of the project was to improve the nutritional security for the people living with HIV/AIDS and their families. This being the

first year of production, the extension officers and STs put in extra effort to educate the beneficiaries about the nutritional value of including vegetables in their diets.

It is heartening to note that only 1,61 percent of the produce was spoiled, since there are no proper storage facilities this implies that beneficiaries were harvesting the right amount of vegetables for consumption and selling off the surplus while the vegetables were still fresh. It also implies that the quantity produced is just enough. Another important issue pointed out by both extension officers and the beneficiaries is that spoiled vegetables were used in making compost for use in the gardens. The HNGs are totally organic since no artificial chemicals are used for fertilization or pest control. Materials such as ashes and local herbs are used for pest control and compost is used for soil-fertility improvement.

The quantity of vegetables sold is still small; only 19 percent of the total quantity produced. This being the first year of the program, more effort was devoted to improving the nutritional status of HIV/AIDS-affected households, especially the household members who are actually infected by HIV, than on income generation.

Figure 5: Home Nutrition Garden production, consumption and sales



Nevertheless, 77,8 percent of the beneficiaries claim to have started selling surplus vegetables; they are excited about it and intend to increase that activity. However, the amount sold and the income generated from such sales is still negligible for most of the beneficiaries. Those who have had no surplus to sell, because of owning very small plots, wish to get bigger plots so that they can expand and increase production. This wish has potential of being realized in Bahir Dar, where land is not too scarce, rather than in Addis Ababa, where the population pressure is quite high.

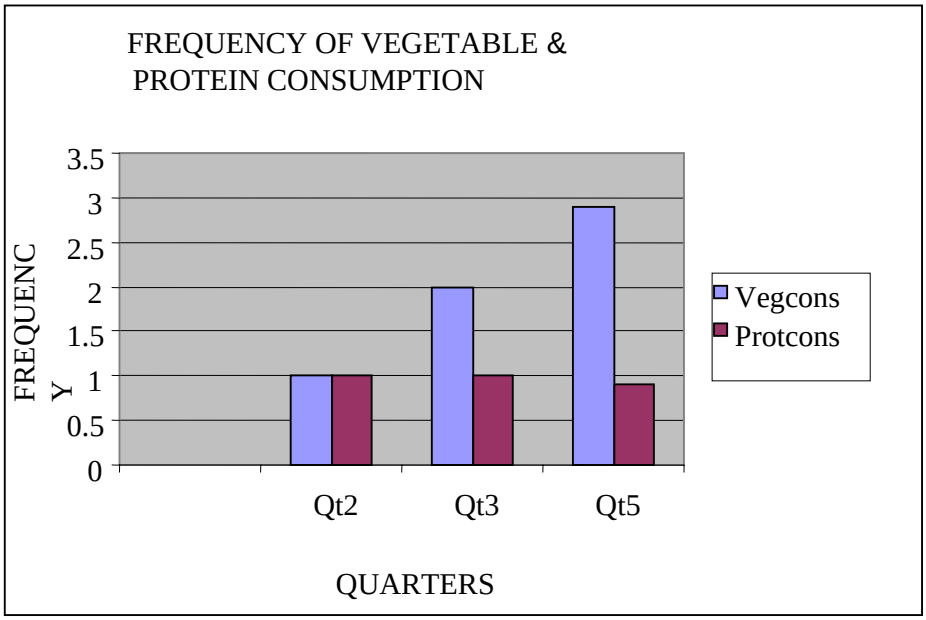
7.1. FREQUENCY OF VEGETABLE CONSUMPTION

The baseline survey indicated that out of the households that did not participate in HNGs, 82 percent did not have gardens and rarely used vegetables in their diets. Recipients of HAPCSO's Home-based Care program that are not participants of the HNG program, served as a control group for the evaluation activity. This sample of households was drawn from the sub-city of Akaki Kaliti; they are treated in the same manner by the service

provider (HAPSCO) as those who belong to the HNG. The only difference is that they are not producing vegetables under the UAPHAW program. Those who were interviewed from the control group indicated that they do not use vegetables frequently, only two to three times a month, because they do not have money to buy it. Only 12 percent of the interviewed control group members used vegetables once or twice a week.

By contrast, the average frequency of vegetable consumption among the participants of the HNG was 2,86 times a week, with the median and mode of three times a week. An average of 32,3 percent of HNG participants consume vegetables every day. This information is summarized in Table 7 and Figure 6. However, even among HNG participants the frequency of protein (meat, eggs and fish) consumption is quite low, averaging only 0,86 times a month, with a median of 1 and a mode of zero. It is from this point of view that most of the interviewed beneficiaries of the HNGs wished to integrate vegetable production with poultry production, especially of layers that would provide them with eggs and droppings to use in their gardens.

Figure 6: Frequency of Vegetable and Protein Consumption



The frequency of vegetable consumption among HNG beneficiaries, over the five quarters of implementation, has increased gradually from an average of zero consumption per week to almost three times a week. When asked why it was important to eat vegetables, the women stated that eating vegetables has improved their nutrition and that they were now feel and look better than before. Animal protein consumption, on the other hand, has not changed in any significant way. As can be seen on Figure 6, the average consumption of animal protein, such as eggs, meat and fish is still insignificant and below 1.

Table 7: Frequency of vegetable and protein consumption

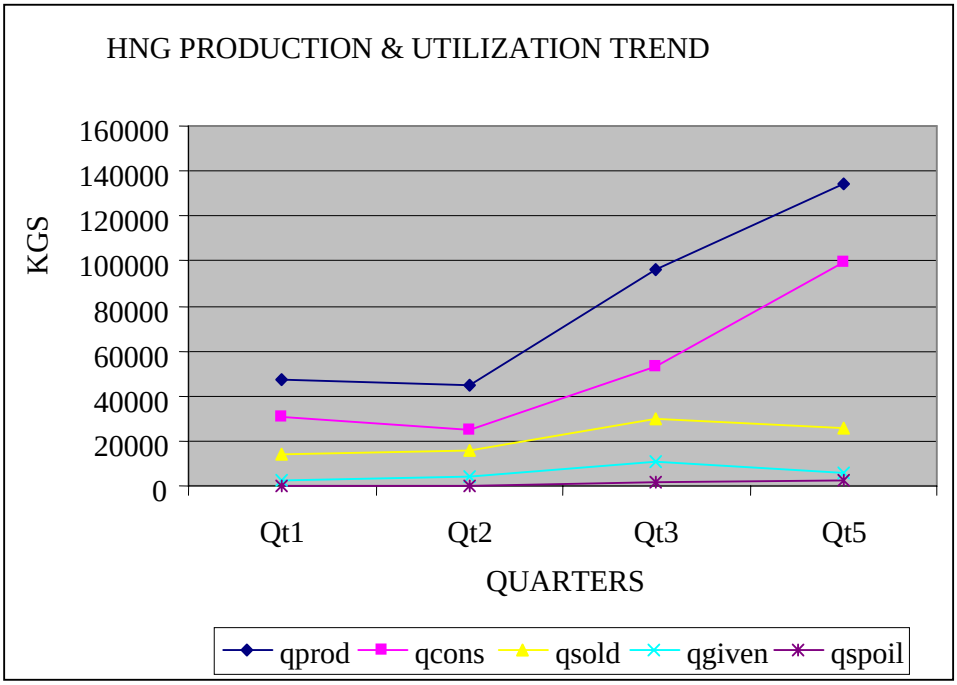
	Frequency of vegetable consumption (per week)	Frequency of protein (meat, eggs, fish) consumption (month)	% of households that consume vegetables every day
Mean	2.86	0.86	32.29
Medium	3.00	1.00	18.00
Mode	3.00	0.00	0.00

As many as 42,9 percent of the HNG beneficiaries do not eat animal protein and those who do, do so only during festivities and holidays. A total of 28,8 percent use animal protein only once a month and another 28,6 percent use it twice a month.

A correlation analysis indicates a positive and significant relationship (with a coefficient of 0,956 at a 1 percent level) between the quantity of vegetables produced and the quantity consumed from the HNG project. This confirms that the beneficiaries are consuming the vegetables they produce with HNG project.

7.2. HNG PRODUCTION AND UTILIZATION TRENDS

Figure 7: HNG Production & utilization



Over the implementation period of five quarters, amounts of household production utilized for consumption, sales and what is traded or given away to relatives, friends and neighbors, has increased, but at a different rate. This is illustrated by the gradient of the graphs depicting different uses. The consumption graph shows a gradual increase followed by a

sudden increase, and it has not yet reached the maximum level. The marginal rate of consumption as production is increased is still positive and increasing. The amount sold is also still increasing but at a much lower rate as illustrated by the much flatter yellow line. An interesting feature of the sales graph is that it seems to be leveling off (from the 3rd quarter). This could mean beneficiaries, who are still producing very minimal surplus amounts and who have learned the nutritional value of vegetables to their health, are giving priority to consumption rather than sales. However, the total amount sold has continued to rise due to the increasing number of participants.

7.3. HNG INCOME AND ITS USE

The second main objective of HNGs is for the participating households to produce enough vegetables to be able to sell the surplus, thereby providing a significant supplement to household income. The increased income from sales of HNG produce is supposed to lead to a decreased risky sexual behavior (sex work) to earn money for food; this attribute was not easy to measure. In addition, the income earned is supposed to enable households to meet other financial obligations, such as education and medical expenses. Table 8 presents the descriptive statistics of the indicators considered in this section.

Table 8: Descriptive Statistics of Indicators on Household Income and their Uses

	Minimum	Maximum	Sum	Mean/m
Quantity of vegetables produced (kg)	1.81	80.88	134,400.20	41.65
Quantity of HNG vegetables sold (kg)	0.52	22.93	25,906.00	3,700.86
Average household income from sale of vegetables (ETB)	4.70	36.00	174.60	24.94
% of households report food purchase as main expenditures with HNG income	0.00	81.00	-	35.11
Household expenditure on food items (ETB)	0.00	50.00	127.15	18.16
% of households that report medical expenses main expenditures with HNG income	0.00	30.00	-	8.71
% of households that report school expenses main expenditures with HNG income	0.00	66.60	-	12.94
Household expenditure on school expenses (ETB)	0.00	8.40	20.01	2.86
% of children in school per beneficiary household	0.00	67.00	235.60	33.66
% of households purchasing assets as main expenditures with HNG income	0.00	37.50	43.02	6.15
% of households that increased expenditure on asset purchase in the past 12 months	0.00	1.00	-	0.14
% of households reinvesting in garden as main expenditures with HNG income	0.00	66.00	-	28.14
% of households that increased expenditure on HNG inputs in the past 12 months	0.00	80.00		17.14

The discussion in this section relates to the households that are selling 19,28 percent of the total quantity of vegetables produced by the HNG project. The average household income from sales of vegetables is only ETB 24,94 per month, which is quite small. However, a few beneficiaries have obtained household income from sale of vegetables as high as ETB 42.38. Several factors have to be taken into consideration. It takes three months for the vegetables to become ready and it is possible to grow vegetables three times a year in Ethiopia. This means that if proper phasing is done, vegetables can be harvested and sold at least for nine months of the year. The IPs, in collaboration with the ECI*Africa*/DAI project team, are seriously looking into the production phasing issue.

The figures in Table 6 indicate the percentage of households that reported purchase of different goods and services as main expenditure with HNG income. On the basis of such expenditure four main uses of the income from the sale of HNG vegetables are as follows:

- Food purchases as the main expenditure: 35,11 percent of households, on the average spending ETB18,16 per month;
- Reinvestment in the garden purchases as the main expenditure: 28,14 percent of households. Also 17,14 percent of the households increased expenditure on HNG inputs in the past 12 months.
- School expenses as the main expenditure: 12,94 percent of household, on the average spending ETB2.86 per school term of six months.
- Medical expenses as the main expenditure: 8,71 percent of households, on the average spending ETB18,16 per month.

The levels of the use of income for food, education and medication indicate achievement of the supplementation of household income to meet basic requirements.

A correlation analysis was performed on the data using SPSS 10. A correlation matrix is presented as Appendix 2. A positive and significant relationship exists between the quantity of HNG vegetables sold and the percentage of household reporting food purchase as a main expenditure with HNG income. The correlation coefficient was 0,805** significant at a 0,01 level. This means that households' ability to purchase complementary food items is positively influenced by the sales of vegetables.

A number of observations can be made from the correlation matrix regarding the relationships between HNG income expenditure and important nutrition security, education and health indicators.

The average household income from sales of vegetables is positively correlated to the quantity sold (with a coefficient of 0,634) but is not statistically significant.

7.3.1. Medical expenses

The average household expenditure on food items in ETB is while positively correlated to medical expenses as a main expenditure with HNG income, it is negatively correlated to school expenses, reinvesting in garden inputs and expenditure on assets purchases with HNG income. This is because all these are competing expenditures from the same scarce resources generated from HNG. The quantity of HNG vegetables sold is positively, but not

statistically significantly correlated to the percentage of households that reported medical expenses as a main expenditure with HNG income (with a coefficient of 0,638). Similarly, the correlation with the average household income from sales of vegetables is positive but not statistically significant (at 0,403).

7.3.2. School expenses

There is a positive and statistically significant correlation between the average household income from sales of vegetables and the percentage of households that reporting school expenses as a main expenditure using HNG income (with a coefficient of 0,673* significant at 5 percent). The household expenditure on school expenses is also positively and significantly correlated to:

Quantity of HNG vegetables sold (0,913** at 1 percent)

Percentage of household reporting food as purchases as a main expenditure with HNG income (0,48** at 1 percent). This means that households with school-going children are selling off surplus vegetables to meet both additional food requirements and school expenditure needs.

7.3.3. Reinvestment in gardens

Beneficiaries who have already harvested produce from their HNG have started reinvesting in the gardens some of the income they obtain from HNG; they are among the 28,14 percent of the households that reported reinvesting in garden as a main expenditure with the HNG income. Reinvestment has so far been in a form of garden inputs, such as seeds and seedlings. In both Addis Ababa and Bahir Dar beneficiaries would like to expand their gardens if they can be allocated more land by the municipalities.

7.3.4. Asset purchases

Only 6,15 percent of the beneficiary households have reported purchased assets as a main expenditure with HNG income. And an insignificant 0,14 percent of the beneficiary households reported to have increased expenditure on asset purchases in the past 12 months. Since this is the first year of operation most households were still attending to bread-and-butter basics and spending their hard-earned HNG income on those basics.

The women group assisted by BIO - ECONOMY have invested their HNG income in establishing a shop through which they are able to sell their vegetables to the public, and a restaurant (see photograph 4), where they cook food, including vegetables from their gardens. The women take turns to sell in the shop and to cook and serve in the restaurant. Their enthusiasm is refreshing and encouraging.

Before the group started the shop and restaurant the women used to sell to each other and to neighbors. They right away started saving a proportion of the income from sales of vegetables. The group used their savings to start the restaurant business. Over and above selling food, the women are selling soft drinks, coffee, tea and processed foods, such as legume flour and dried spices.

Photograph 4:Some of the Beneficiaries operating a group-owned restaurant in Yekka

Photo UAPHAW, September, 2005

8. OTHER IMPORTANT ATTRIBUTES EXPLORED WITH VARIOUS STAKEHOLDERS

The mid-term assessment exercise involved numerous discussions and informal interviews with all stakeholders to ensure that the evaluation was as participatory as possible.

8.1. GOVERNMENT OFFICIALS

The period of the mid-term assessment was politically charged as the government was negotiating with the opposition on a number of issues. As such, many of the government officials were not available for meetings, especially in Addis Ababa. Nevertheless, the COP tried his best to make appointments and we were able to meet with a few officials.

8.1.1. Meeting Government officials in Bahir Dar, Amhara Region

A meeting with the mayor of Bahir Dar revealed that the UAPHAW program, which the mayor's office has so far supported unreservedly, is of interest not only to the Government of Ethiopia but also to the ruling party, both of which are looking for sustainable solutions to the HIV/AIDS pandemic. They also believe in change that will be brought about by the optimal utilization of land and water, both in urban and rural areas, to eradicate poverty. The mayor indicated that the government is ready to cooperate, participate and partner with organized efforts of development facilitators, because it believes poverty alleviation and HIV/AIDS mitigation will bring about peace in the country. The mayor recommitted himself to continue supporting ECI*Africa*/DAI and its work in Bahir Dar.

Ms Zenebu Tadesse, Director of the Bureau of Labor and Social Affairs, echoed the mayor's sentiments. She was particularly happy that the project is improving the nutritional status of HIV/AIDS-affected households. She reiterated the support of the bureau in recruiting the new members of the project in collaboration with the Kebeles who know the households that are genuinely affected by HIV/AIDS. She encouraged the program to also reach out to community-based organizations (CBOs), youth associations, women's associations and the HIV/AIDS Secretariat, who are already working with HIV/AIDS-afflicted individuals.

The HAPCO director, who fully supports UAPHAW, said that HAPCO is interested in funding a similar project, but within the ambit of the Ministry of Agriculture, extension services and NGOs working with HIV/AIDS and poverty alleviation.

8.1.2. Meeting Government officials in Addis Ababa

Ato Girma Demissie, the head of the Urban Agriculture Department, under the Trade & Industrial Development Bureau, admitted that the concept of Urban Agriculture (UA) is new and needs to be nurtured. The fact that most of the areas used now for producing vegetables were once garbage dumps means that UA, including the UAPHAW program, is beautifying cities, converting garbage into compost, producing food and generating income for the poor. He commended the HNG program for contributing towards poverty alleviation and urged for diversification by introducing poultry production into the program.

It was refreshing speaking to Ato Mitiku Habene W/Mariam, the sub-city Chief Executive for Arada sub-city administration, who has been in the forefront of supporting the UAPHAW program. He appreciated that the 16 NGOs and other institutions in the sub-city were appreciated by the government because they are helping the HIV/AIDS-affected poor people. In the same vein, the sub-city administration appreciates what ECI*Africa*/DAI is doing and the approach that works with the local government and local people, with Kebele administration, as well as the district administration. He praised the mission and vision of ECI*Africa*/DAI as it is assisting those with low income and HIV/AIDS, which is also a priority focus of the government. He promised to continue allocating land to the project for the sake of the poor who are helped by the program. He admitted that the government cannot eradicate poverty by itself, but with partners such as ECI*Africa*/DAI.

8.2. TECHNICAL PARTNERS (TPS)

The COP has established amicable relations with UAPHAW. Two of the main TPs who are invaluable to the ECI*Africa*/DAI UAPHAW work are Family Health International (FHI) and the Save the Children. They are more than ready to continue with the collaborative work between themselves and UAPHAW program phase II.

Specifically, Save the Children has just won a US$20 million project on which it will be working with World Vision, FHI and Hope for African Child Initiative (HACI) as second-tier partners but will need third-tier partners composed of other development institutions, such as ECI*Africa*/DAI and NGOs on issues such as livelihood, microfinance and positive change. Further discussions on the nature of the collaboration will follow between the Save the Children Fund director and the COP of UAPHAW.

8.3. PROJECT STAFF AND IMPLEMENTING PARTNERS

Interaction and discussions with the ECI*Africa*/DAI project staff and the IPs indicated that the HNG program has been a learning process for everybody involved with it. There is no doubt that the program is benefiting the intended beneficiaries, their families and the communities within which they live. However, the expectations of the project were too high, given the amount of resources that were allocated, forcing the IPs to invest additional resources from their other programs.

For the first time, UAPHAW has succeeded in bringing NGOs under the same roof to work through challenges of a common nature together; this is done though regular extension officer meetings, NGO officials meeting, field visits and NGO quarterly meetings. The program has been good advocacy for USAID and ECI*Africa*/DAI because of the practical demonstrations and beneficiary gardens that are visible on the ground. The gardens have attracted interest from all levels of government demonstrated by the frequent visits by officials from government, USAID delegations, TPs, and other development agencies. The field days (Vegetable Days) organized by IPs helped to familiarize visitors with the project, providing opportunities to share experiences and a chance for the beneficiaries to market their produce. To date, five field days have been held by different IPs.

In view of the high visibility and visitors' rate the project requires audio visual equipment (such as, overhead projector, television and video player) to capture such moments and as tools for marketing to guests who visit the project sites during on or off season.

8.3.1. Experiences and Impact of HNG on Implementing Partners

The general feeling from almost all of the IPs is that the HNG program has introduced a new idea, namely that of agriculture production for city dwellers who have never farmed before. Initially it was difficult to convince beneficiaries to join the program and extension officers had to go to peoples' homes to convince them about HNG but now people are approaching the IPs and request that they join the program.

Even the IPs that were already involved in agriculture activities feel they have learnt new knowledge about gardening, especially the use of drip kits and grow bags. The program is utilizing what used to be dumping and eroded grounds and turning them into gardens; they are using waste to make compost and therefore, cleaning the environment, they have also learnt terracing

The AIDS sick, who used to stay at home feeling depressed, are now motivated to spend time working in their gardens, which they consider to be good for their spirits as well. Gardening occupies the HIV/AIDS-affected people so that they do not concentrate on their sickness. Even the experienced extension officers have learnt about urban agriculture, which they did not know about before.

Some IPs started working at household level for the first time, for example, BIO ECONOMY. The program has brought them into close contact with the people, and has made the people they serve to have more confidence in them. The HNG systems are very systematic and have helped to teach the extension officers how to manage the households and community groups working together on HNG plots. They have also been able to instill management discipline within individual beneficiaries who are responsible for their own plots. The attitude of beneficiaries has changed for the better, and they are more hardworking and willing to do more on their own initiative without supervision.

The program has helped to create a good image for ECI*Africa*/DAI and the IPs, not only among beneficiaries, who now view IPs positively, but also in society and within the government. The successes of the program have enabled IPs to get to high-ranking government and other development players that are not involved with the project. HIV/AIDS is a cross-cutting issue that has to be addressed by all institutions and UAPHAW has provided a chance to institutions to work together and to use a new approach to HIV/AIDS by improving the nutrition of affected people using HNG vegetables.

A number of IPs, for example, ISAPSO, BIO ECONOMY and WESMCO, have started working towards linking beneficiaries to market outlets, such as hotels and supermarkets, to enable them to sell their produce, but this activity needs to be expanded.

8.4. ADDITIONAL HIGHLIGHTS FROM THE BENEFICIARIES

This section captures the other attributes of the project that were not well covered by the questionnaire based on the major indicators. Important additional issues which were identified from responses of beneficiaries during focus group discussions are summarized in Table 9.

Table 9: Highlights from the beneficiaries

	Attribute	Response in %
General	Beneficiary involved as individual, group or institution	Group – 57,8
		Individual – 42,2
		Institution – 7,2
	Sex of Beneficiaries	Women – 92
		Male – 7,72
	Beneficiaries who had gardens before HNG	Had garden – 12,5
		Had no garden – 75,0
		No response – 12,5
Benefits	Who assist in the garden	All family members – 33,3 Children – 50 Other – 16,7
	Main benefits from HNG	Food and income – 34,8
		Food only – 62,2
		Other – 3 (including satisfaction, confidence and clean environment
Markets and income	Whether is it easy to sell HNG produce (among those selling)	Easy – 77,8
		Difficult – 22,2
	Problems associated with marketing	No problems – 60,2
		Too much competition after harvest – 21,4
		Transport – 18,4
Impact	Main impact of drip kit (% not cumulative)	Save water – 66,7
		Save labor – 46,5
		No weeds – 52,6
		Increase yield – 34,2
	Impact on food consumption (% not cumulative)	Improves diet for family – 64,6
		Children like vegetables – 34,2
		Good for fasting days – 43,9
Lessons	Lessons learnt about HIV/AIDS (% not cumulative)	To take care of the sick – 56,6
		Examine self to know status – 5,2
		Know how it is transmitted – 66,2
		Counselling and helping others – 47,6
		Care and guidance for OVCs – 42,4

There is a lot of camaraderie among the beneficiaries in any one group and they indicated their appreciation towards the entire implementing team and hope that the project will continue. They also made the following comments and suggestions:

- The attitude of people has changed, people are now motivated to grow vegetables;
- A lot of neighbors and friends wish to join the HNG project, which is helping poor families;
- Individuals are willing to help each other and to assist, counsel and care for the sick in their midst;
- Church people who have heard about and seen the HNGs are cleaning up their areas and encouraging people to grow vegetables;
- The drip irrigation kits are good in the dry season, but where the water is obtained from the tap, the cost of water to the municipality is higher than what they are able to get from sales of HNG produce; and
- Diversifying production with introduction of poultry, especially for layers and small ruminants would improve their nutritional status even more.

9. PROBLEMS, SOLUTIONS, CHALLENGES, LESSONS LEARNT, STRENGTHS, OPPORTUNITIES AND STRATEGIES FOR PROGRAM SUSTAINABILITY

UAPHAW implementation has been a learning curve for all involved, from the beneficiaries to the COP and the IP. What follows in this section is a summary of the experiences from all the stakeholders: the IPs, especially the extension officers, who work closely with the beneficiaries on a regular basis, and the ECI*Africa*/DAI implementing team.

9.1. PROBLEMS ENCOUNTERED TO DATE

There have been problems at all levels of the project from the Ethiopia-ECIAfrica/DAI office where team had to make sure that implementation plans, and inputs for the project at IPs and beneficiary levels were delivered on time, to the field level where beneficiaries still wish they could get bigger plots of land for gardens. Below is a summary of such problems:

- Lengthy process of project grant agreements; however, through mutual understanding, some IPs agreed to use their money and be reimbursed later.
- Delays in the delivery of the drip kits resulted in a very slow start. Beneficiaries who had been organized earlier and had started growing vegetables without drip kits took a lot of convincing to appreciate the drip kits even after they were delivered and installed.
- There were delays of delivering other project inputs and inconsistencies in responses from the ECI*Africa*/DAI team as to when the problems would be solved.
- Shortage of land, especially in Addis Ababa, was compounded by the lengthy process of accessing land. At household level there is serious shortage of gardening space, also especially in Addis Ababa. This has made it necessary to apply for large plots that are operated by groups of beneficiaries; which are allocated by the municipalities and sub-cities.. A weakness related to this is that 10x10, 10x3 plots of land are too small to keep the beneficiaries fully occupied for a long period of time.
- The preoccupations of local authorities made it difficult to consult with them and to approach them as and when there was need to do so.
- At the beginning some IP authorities (NGOs) paid little attention to the project activities; this was made worse by failure of ECI*Africa*/DAI to deliver anything on time.
- Water problem where experiences on some group garden plots, so far no water availability studies have been conducted.
- In some areas beneficiaries had to dig wells to protect their gardens from wild fires.
- Some of the extension agents paid minimal attention towards compost preparation by the beneficiaries and some lacked commitment and initiative. Dependency attitude of beneficiary; initially beneficiaries expected to get everything from the project, but by informing them of the program objectives and limitations they have now understood.
- IPs felt a lot of pressure due to the new interventions brought about by the HNG technologies.

- The high rate of beneficiaries to one extension officer (400:1) is making it difficult to conduct regular supervision.
- HIV/AIDS-weakened beneficiaries and the elderly are sometimes not able to attend to their gardens.
- All home-based care givers, most of whom are volunteers, did not participating in the program from the beginning.
- The drip kits are not well used in some areas because the beneficiaries have to take them home (from the group plots) due to fear of theft. At individual household level, some beneficiaries are too weak and or too poor to fence.
- Scarcity of water, especially during the hot dry months (February to March) affected the gardens.
- IPs feel that the project is run on merge resources, for example, the project can not afford two security guards to enable a shift arrangement. The corrugated sheds used by the guards too cold in winter and too hot in summer. Due to such working conditions it is difficult to retain guards for long periods of time.
- The IPs incurred unbudgeted costs on the project due to delays in receiving grants. They had already mobilized beneficiaries and could not just send them away; also transport costs to enable extension officers to go around to the beneficiaries is costly on the IPs, as it is not covered by grants. The work requires dedicated extension officers who can tolerate the hardship under which they are working. The feeling is that there is too much work for too little money; this particular problem was pointed out by all the IPs.

9.2. SOME SOLUTIONS AND COPING MECHANISMS

The COP and his team have established very cordial relationships with partners. Working smoothly with government partners from Kebeles and sub-cities has been helpful. Likewise, the ECI*Africa*/DAI implementing team has established a good rapport with the TPs and the IPs, while they waited for grants and drip kits most of the IPs were able to start on their own by:

Using of watering can and hose pipes before the drip kits were delivered and installed;
Frequent discussions and meetings with IPs kept the relationships strong, despite the delays;
Negotiation with concerned bodies resulted in fast delivery of services;
Grower bag strategy has proved to be handy in places where land scarcity is critical;
Regular presence of the STs working in the field with the extension officers kept the morale of extension officers and the beneficiaries high; and
Household waste management and recycling at household level is keeping the environment clean and at the same time fertilizing the gardens.

9.3. CHALLENGES

Challenges have been encountered at all levels of implementation; the main ones are listed below:

- At the beginning the beneficiaries underestimated and almost dismissed the drip kits, but now they are happy with them.
- It was difficult to recruit beneficiaries at the beginning due to the stigma attached to

HIV/AIDS.

- Whenever a plot is allocated by the authorities, people are excited and usually embark on gardening immediately. However, need still exists for testing the soils in the allocated plots, because some of the plots used are near factories that have been disposing waste water on the land.
- The nature of some beneficiaries is worrisome, because they are sickly and weak.
- Long delays of external procurement have been a big challenge.
- There are no drip irrigation technology manufacturers in Ethiopia even though one private company indicated that they may be able to start doing so if the market demand is big enough.
- Fitting the drip kit systems to the household available land does not always match the specifications of drip kits, except for communal gardens on land allocated by the authorities.
- Securing reliable market for the surplus vegetables is likely to pose a challenge as more produce become available for the market.
- A high amount of compost is required for soil structuring. There is an opportunity for looking into encouraging entrepreneurs to prepare compost as small businesses.
- Integration with other programs and identification and/or initialization of synergies and linkages is a challenge.
- Transportation to enable extension officers to contact beneficiaries, especially household-based distances, which are too far. Likewise, transport is not adequate for the STs to enable them to undertake regular supervisory visits.
- Since the majority of beneficiaries are either sick or carriers, there is stigma, secrecy and some dislike to be seen with ECI*Africa*/DAI-UAPHAW staff. Some beneficiaries are conscious that other people know that kits are installed at households that are affected by HIV/AIDS.
- ECI*Africa*/DAI should make sure that the IPs relieve extension officers assigned to HNG of other duties so that they may fully perform HNG assignments.
- It would be good to encourage contact gardeners with a small reward to keep them motivated to assist the extension officers, otherwise they do not take their role seriously and
- Inclusion of poultry and small ruminants has the potential to complement the vegetable production.

9.4. LESSONS LEARNT

Over the past year of program implementation, there have been good and bad experiences. The following lessons have been learnt so far:

- Identification of beneficiaries is much easier for health-service providing IPs than for those that are not.
- Participation of local authorities and TPs has been of paramount effect. Having a good relationship with government bodies has a positive impact on the project and has made government-related processes smoother and easier to handle. Government officials who have visited HNG plots liked what they saw and would like to be associated with the success.
- Volunteers have come forward from the community to help the elderly and HIV/AIDS affected. Since they are now organized they are easy to reach.

- Some IPs feel it would have been better for ECI*Africa*/DAI to start the project only after the drip kits and the other basic resources were assured.
- The difficulty of supervising 400 beneficiaries by one extension officer can not be overemphasized; the number is too high for the extension officer to render quality service to each beneficiary.
- Vegetable production has the role in household food security; especially where surplus produce is already being sold to obtain household income.
- The beneficiaries and the community now understand that HIV-affected individuals can work and produce food and take care of themselves.
- The use of urban waste lands for farming and beautification of the cities is now well understood by the municipalities and sub-cities.
- The psychological set-up of HNG beneficiaries has improved and vegetable consumption has been enhanced.
- Producing vegetables is now seen to be simple enough (if handled properly) that it can be managed and handled by women easily.
- The urban-gardening program is playing a demonstrative role for NGOs, government institutions and individuals, many of whom have been approaching UAPHAW to share the experience.
- The program is also playing an environmental sanitation role, as waste damping lands within the cities are becoming vegetable gardens.
- Homestead gardening is more sustainable than group gardening because many women prefer to work nearer home.
- Working in groups creates friendships between the community and people living with HIV/AIDS. They strengthen each other and there is a lot of mutual encouragement among members.
- Women in groups help to build confidence of one another; most women depended on their husbands for many years and now they feel good about working for themselves. In some cases the husbands are now rely on them.

9.5. PROJECT IMPACT AND OPPORTUNITIES

9.5.1. Project Impact

The achievement of UAPHAW so far is exemplary and the government is pleased to be associated with the program and with the players therein. The two main objectives of the program have been met, especially enhancing of the nutritional status of the beneficiaries.
All the beneficiaries are eating vegetables more than they did before they joined the HNG program, thus HNG is contributing to food security. Project impact is exhibited further by the following:

- The target of 4,500 beneficiaries is likely to be met by end of December 2005; so far 3,349 beneficiaries have been registered and 3,227 of them were already producing vegetables at the time of the assessment.
- The objective of generating income for the beneficiary households has only been partially met. Issues of larger plots of land for expansion and market linkages need to be looked into further.
- There is great improvement on sanitation and the environment in the project areas, as beneficiaries (and their neighbors) are cleaning their surroundings.

- The beneficiaries have developed a hard working culture and they are positively influencing the communities around them.
- The project has impacted on the organizations that are involved, especially ECI*Africa*/DAI in Ethiopia and all the IPs. They are now known to government, to all major donors and other development technical institutions. They have been able to develop partnerships and their members of staff are highly motivated to do their best.
- IPs who never dealt with agriculture before have now made HNGs an intrinsic part of their scope of work as a main activity.
- High-ranking government officials and the community are aware of the program and appreciate what it is doing. As a result there are frequent field supervision visits and telephonic enquiries about the progress of the program which has a generated a lot of visibility.
- In Bahir Dar, the HNG program intervention led the Bureau of Labour and Social Affairs to form a regional forum among NGOs who are working on common disciplines. In Addis Ababa, the IPs involved with HNGs have also formed a forum. Technical and social linkages formed among implementing partners.
- There is high pressure from other legal associations to form partnerships with ECI*Africa*/DAI in Ethiopia.
- Other development institutions now appreciate the NGOs that are working with HNGs as IPs and would like to form similar partnerships with them for similar interventions.
- ECI*Africa*/DAI is already developing a relationship with the research centers.
- The new technology (grow bag) distribution and its high demand around families who have small garden plots.
- The high amount of potato yield obtained from the variety called DH-P1; (120-150kg) an average of 140.35kg/head, ETB180.52 per head is an encouraging step.
- Four vegetable days which were organized by three implementing partners was a good way of bringing together all the main players in UAPHAW to witness what is actually happening on the ground. Gardeners, experts, implementer NGO and CBO representatives, city administration officials and other relevant stakeholders were brought together to share experiences, exchange ideas and learn from the reflections of the beneficiaries.

9.5.2. Project opportunities

After drawing the attention of the government to the HNG program, the different government sectors (especially agriculture, water, sewerage, labour and social affairs and rural development) have come forward to support the beneficiaries. With their assistance, a number of opportunities can be explored for improving the performance of the project, including:

- Increasing plot size where possible, especially in Bahir Dar, where land is still relatively available.
- The feeling of having land to work on (even though for a short time) has given beneficiaries a good sense of social security and confidence. They can now be easily encouraged into becoming more business oriented by exploring market linkages.
- Increasing the budget allocation to the IPs in a form of grants, to cover the cost of supervisory and monitoring costs.

- Undertaking water and soil studies to ascertain the suitability for vegetable production before the beneficiaries are encouraged to start gardening. Some plots have heavy black soil, which crack during the dry season.

9.6. PROJECT SUSTAINABILITY

UAPHAW is an appropriate program for the HIV/AIDS affected people and it is sustainable because of the following factors:

- There is increased demand of quality vegetables among the people who never used vegetables before.
- The drip-kit technology is durable. It is said to be 5-10 years and their accessories are also durable.
- The accessibility of markets in both Addis Ababa and Bahir Dar are big markets.
- Availability of production inputs (such as seed and seedlings). All extension agents are encouraged to raise seedling from the seed packs they receive from the project, but some beneficiaries have also started to buy seeds and to raise seedlings on their own.
- Since HNG activity is 100 percent organic, it is relatively cheaper and environmentally friendly (application of natural fertilizers and crop protection measures.). Organic vegetables do not have high competition from other vegetables.
- There are established government institutions and NGOs with institutional systems for technical training and supervision of the project.
- Potential manufacturers/suppliers of the drip-kit systems have already been identified in Addis Ababa.
- The technical and managerial skills developed to date are in line with the program.
- In Bahir Dar, at the beginning beneficiaries' plots were cultivated for them using animal traction, the second time around individuals cultivated their own land; this is a signs that they are ready to take over.
- Every beneficiary is contributing money for the guard for the rice field.
- Beneficiaries who have acquired plots would like to keep them. Wherever there is bare land in the sub-city, the government is willing to allocate it for gardening provided it has not been allocated for any other development, and as long as water and soils are suitable.
- Beneficiaries feel the program is beneficial to them. They would like it to be extended to enable them to benefit more when they through expansion of their plots and increasing the proportion of HNG produce sold through the market.

9.7. VISIBILITY OF THE HOME NUTRITION GARDEN PROGRAM

UAPHAW has hosted quite a number of visitors, including a high-level US government delegation, at different gardens. Each visit brought limelight to the project and pledges for support. Some of the important visits are summarized below as examples, recorded by ECI*Africa*/DAI-Ethiopia implementing team:

9.7.1. United States (US) Government

A high-level US government delegation led by His Excellency, Ambassador Tony Hall, an Ambassador to FAO in Rome, visited project activities in Addis Ababa on March 18 2005. The ambassador talked to beneficiaries and various implementing partner NGO representatives, Addis Ababa municipality officials, and the project team. The ambassador was impressed by the performance of the vegetable gardens. HIV-affected families working on the gardens expressed their courage and potential to produce food to feed their families if supported with appropriate technologies.

The US government ambassador to Ethiopia visited the activities of the UAPHAW program of ECI*Africa*/DAI at Bahir Dar on April 19. During her visit she talked to the beneficiaries, IPs and local government authorities. She visited two communal gardens on which 280 HIV-affected women and orphans are cultivating vegetables. The HIV-positive People Association chairwomen explained to the ambassador that enhancing of the capacities of the HIV-affected families to produce food is the most appropriate way of support she has ever experienced. This assures food and nutrition security, and complements medical supports. One of the beneficiaries said: "I know HIV is ultimately linked to AIDS and I will die, but I am happy that I am teaching my children how to cultivate vegetables and this will help the children to produce their own food and continue their life by their own." This can keep children in school even if they have to shoulder the responsibility of sick or dying parents.

A senior official from the US government/Washington, who visisted Ethiopia to attend the International AIDS Conference in Addis Ababa, made a short visit to the ECI*Africa*/DAI vegetable gardens project in Addis Ababa (Arada sub-city). She talked to the beneficiaries, partners and USAID/Ethiopia staff on the gardens. She was so impressed by the gardening activities and the capacities of the HIV-affected women and orphans to produce food.

Other important visits to the project included:

- USAID / Ethiopia
- Family Health International (FHI) and
- Addis Ababa HAPCO

9.7.2. Visit from Government Officials

Numerous government officials have visited different the project sites, especially during 'vegetable days'. For example, the first vegetable day, organized by Dawn of Hope, was inaugurated by the Bahir Dar city mayor, while the WESMCO-organized field day was opened by the Arada sub-city manager. The vegetable days have also been attended by NGO representatives, beneficiaries from other sub-cities, Urban Agriculture office representatives, USAID/Ethiopia and invited community-based organizations. Their visits have always been a source of inspiration, an expression of support and a vote of confidence to the UAPHAW program. These occasions are usually colorful, where invited guests and project beneficiaries freely moved around the vegetable gardens. Most visitors have been impressed by the potential of HIV-affected families to produce food.

10. CONCLUSIONS

The overall objective of the program is to introduce low cost, low labour-intensive urban gardening systems to support low-income women and their households. The HNG program has to produce food for household consumption to improve the nutritional status of the beneficiary households as well as produce a surplus to generate income for the household.

10.1. DRIP-KIT IRRIGATION AND TRAINING CONTRIBUTING TO ACHIEVEMENT OF PROJECT GOAL AND OBJECTIVES

10.1.1. Drip-kit irrigation systems

The mid-term assessment discovered that 1,760 drip kits have been distributed and installed, 738 kits on 100m² plots and 1,022 kits on 30m² plots. Even though the kits were distributed and installed late, they are already contributing significantly to the gardening activity. Beneficiaries are associating the drip-kit irrigation systems with efficient ways of producing vegetables, using less water and requiring less energy because the weeding requirement is low with the use of the drip irrigation. About 75 percent of drip-kit owners are very satisfied with them and the remaining 25 percent indicated that they received the kits during the rainy season and have not used them for long enough to appreciate them. However, the household income effect of the drip-kit irrigation is still quite small.

10.1.2. Grow bags

Grow bags are very suitable in areas where beneficiaries have only been able to access plots of land less than 30m² around their households. They have already become popular among beneficiaries and community members in the neighborhood of HNG beneficiaries are already emulating the technique by using whatever containers they can get.

10.1.3. Training

The home nutrition activity has provided new knowledge not only to HNG beneficiaries but to all stakeholders across the board, from the project implementation team to IPs, government officials and other partners in development. Urban agriculture is new to Ethiopia and most people still find it fascinating and very useful to the urban poor. Urban agriculture as practiced under HNG activity is praised echoed for providing vegetables, improving nutritional security and improving quality of life, and for cleaning and beautifying the environment. More than 65,6 percent of the registered beneficiary households have already been trained.

Training in the agronomic aspects of gardening has broadened the horizon of extension officers and beneficiaries by using low-cost fertilization and crop-protection methods to produce organic vegetables in a cost-effective manner and averting competition with other vegetables grown with inorganic fertilizers and chemicals. Nutritional training has made an impact on the beneficiaries' food consumption pattern, as they understand the nutritive value of eating vegetables. However, there was no straightforward indicator built into the monitoring system to explicitly measure or assess the extent to which consumption of vegetables extended life or improved the quality of life.

10.2. PROGRESS TOWARDS ACHIEVEMENT OF PROJECT GOALS AND OBJECTIVES

10.2.1. Project participation and garden establishment

The results from the mid-term assessment exercise show that there is high participation in the nutrition garden project by households in all the areas. On the average, 73,7 percent of the gardens are managed by women. At the time when the baseline study was conducted, 82 percent of the sampled households indicated that they were involved in the project as individuals. However, the mid-term assessment revealed that most of the beneficiaries (57,8 percent), are participating as groups rather than as individuals; this turn of event is due to scarcity of land around, and in the vicinity of, most of the households. Almost all the beneficiaries operating at household level do not use the drip-kit systems, instead they use grow bags, which have become very popular.

The participants in groups on municipal or sub-city land have drip-kit irrigation systems on either 30 m² or 100 m² plots and almost all of them are already gardening. They are harvesting and consuming vegetables from their gardens regularly. Only beneficiaries registered under PICDO (300 beneficiaries) in Addis Ababa, and MEKDIM (276 beneficiaries) in Bahir Dar, are still to establish their gardens. Additional beneficiaries have been registered by WESMCO (400 more beneficiaries) and DOH (400 more beneficiaries). So far 3,349 (74,4 percent of target) beneficiaries have been registered and the COP and his team are up beat that the target of 4,500 beneficiaries will be met by December 2005.

A total of 3,349 gardens have been established to date, 96,4 percent of which have been harvested at least once. Thus the activity of establishing home nutrition gardens has been highly successful.

Household heads provide most of the labor used in the nutrition gardens and most households (69,9 percent) are headed by women. It therefore follows that women provide most of the labor used in the nutrition gardens. There is no hired labor in HNG activity, but other members of the household are assisting the registered beneficiary in the garden. More than 75 percent of the beneficiaries had no garden before the program was introduced, but now they do.

10.2.2. Vegetable production and consumption

There is a marked increase in vegetable production and consumption among the HNG beneficiaries. Production has increased tremendously in the project areas from no production at all. About 74,25 percent of all produced HNG crops is consumed by the beneficiary households. The baseline study conducted during the 4th quarter (March 15 to June 2005), indicated that 82 percent of the sampled households did not own gardens and were not using vegetables in their diets, now almost all HNG beneficiaries are using vegetables as part of their meals and the average rate of consumption is about three times a week.

10.2.3. Household income from HNG and its use

The objective of increasing household income from HNGs has only been marginally realized. Since this is the first year of operation there might be improvements towards increasing household incomes in the years to come.

In view of the minimal achievement towards household income generation, the little money generated is spent mainly on basic household items such as, food purchases, reinvesting in the garden and school fees. Expenditure on medical needs is not as high as anticipated, this may be because a number of HIV/AIDS affected people are receiving free treatment and medication; the government hospitals, health centers, and clinics are reported to provide the bulk of the treatment for the beneficiaries.

10.2.4. Implementing areas and IP site distribution

The distribution of IPs to the implementing areas is still done based on the areas in which the IPs are already operating. This has resulted in overlaps and duplication of effort which could, in future, cause confusion, especially if a household is served by two IPs under HNG project.

10.3. ADEQUACY AND EFFICIENCY OF IMPLEMENTATION AND DELIVERY OF OUTPUTS

- The expected outputs of the project were rather ambitious given the shortcomings in implementation arrangements, especially as:
- The ECI*Africa*/DAI implementation team is ill could perform better with better transport arrangements, the project areas are far apart and one vehicle and motor cycle are inadequate for the team to go around. Likewise, one desk top is hardly adequate for three STs in Addis Ababa to capture monitoring information and write report.
- Delays in the delivery of grants, which lead to late delivery of drip kits and other inputs. It was discovered, during the course of project implementation, that the AMAP IQC-base contracts do not provide authorization for USAID contractors to execute grants under the AMAP IQC. This negatively impacted on all Task Orders issued by USAID Missions under the IQC, which include grants components such as UAPHAW. It took a long time to resolve the matter and it was after 5 months that the Head of Contracting Authority in Washington D.C. authorized the contracting officer to add the "grants under contracts" language to the AMAP IQC. The process of sorting these issues delayed the issuance of further grants under UAPHAW.
- Unavailability of transport for extension officers to enable them to reach beneficiaries easily and regularly.
- A large number of beneficiaries (400) per extension officer; intensive training and regular monitoring not easy.
- The assumption that extension officers would be able to train beneficiaries on issues of nutrition and record keeping is not correct.

10.4. IMPACT ON HEALTH

The impact of the HNG on the health status of those living with HIV/AIDS is difficult to assess because affected people do not wish to discuss such matters with strangers. However, the beneficiaries proclaim that they are feeling and look better now than before they joined the HNG project.

11. RECOMMENDATIONS

11.1. MICRO-IRRIGATION SYSTEMS

The drip-kit irrigation systems are appropriate for use by home nutrition gardeners in the urban setting. However, to be able to expand its use (commercialization), it is necessary to identify a local manufacturer of the kits to reduce delivery time and to make the kits affordable by poor urban and rural dwellers who may like to adopt this technology. The private sector should be contacted and encouraged to manufacture and supply drip kits. This will reduce the delays of delivery of drip kits to the beneficiaries.

11.2. GOVERNMENT SUPPORT

The government has been very supportive of UAPHAW and municipalities and sub-cities have allocated land for HNGs. For the program to move to the next level, when all the beneficiary households will be able to produce enough for home consumption and remain with a surplus to sell and earn money for other essentials, households require bigger plots of land to be allocated to them. The HNG project should campaign to get allocation of the areas in the cities and sub-cities that are already earmarked as 'green areas' which are supposed to be planted with trees and flowers. A submission should be made to the city managers that green areas should be turned to garden areas for the poor.

11.3. DATABASE DEVELOPMENT

A proper and detailed database should be set up on all issues regarding the project, especially on:

- Soil types and fertility in the different areas of the project;
- How much water is available in the project areas and for how long the resource can be expected to be available for gardening; and
- Institutional learning that is taking place about HIV/AIDS among the different NGOs.

The use of grow bags at household level and at institutions such as schools and clinics should continue to be promoted. Grow bags are an appropriate intervention for growing vegetables for home consumption in very limited space typically found in big cities like Addis Ababa.

11.4. CONTINGENCY PLAN ON BENEFICIARY RECRUITMENT

As expected, some heads of households who are the registered beneficiaries have either died or become too sick to work. To ensure sustainability and continuity of the project, it is

necessary to choose households which have a number of people who can be able to take over the work of gardening if the registered beneficiary passes on or s/he is too weak to continue.

11.5. OPERATIONAL AND MARKET ISSUES

A need was expressed by IPs to develop a more explicit way of assessing the nutritional security and quality of life other than simply noting the frequency of vegetable consumption. Different vegetables have different nutritional contents (in terms of vitamins, minerals and other trace elements). It is thus necessary to carry out laboratory tests on vegetable extracts to ascertain the nutritive value. University departments of nutrition and food processing could be brought on board as partners to undertake such in-depth analysis, using students.

An integrated pest management and nutrition program should be organized in collaboration with the appropriate university departments that would be able to engage students in practical work for their learning, at the same time benefiting the beneficiaries.

The HNG activity has to be expanded beyond what is needed for home consumption, so that the risk of sexual behavior to earn money for food is reduced. This will only be achieved if beneficiaries are allocated sufficient land with access to water for them to produce much more vegetables than what they need for home consumption. One IP volunteered to explore university partnership options.

Access to market has not been a problem yet, but it would be necessary to plan ahead and undertake a market linkages study to look into possible market outlets for anticipated produce. To combat the problem of transportation it might be necessary for beneficiaries to form associations or unions to create economies of scale. Since the markets for any particular type of vegetable is not big, it is also necessary to develop a diversification plan and phasing plan to avoid flooding the market with one type of vegetable in a given time period.

Transport arrangements for UAPHAW STs and HNG extension officers could be improved to enable them to render services to the large number of beneficiaries as the project expands. A creative and cost effective solution should be worked out between UAPHAW project and the IPs.

The ECI*Africa*/DAI implementation team, lead by the COP, should spearhead a dialogue with senior representatives from all the NGOs and extension officers involved in implementing the HNG to discuss how best to deal with the distribution of IPs in the implementing areas of the project to maximize on IP utilization in project areas.

12. APPENDIX 1

Appendix 1: HNG Project Performance / Progress Monitoring

No	Activities / Indicators	Unit	IMPLEMENTING PARTNERS (NGO) ISAPSO	WESMCO	HAPCSO	BIOECONOMY	EDA	DOH	MODFSC		Total 1st Q	2 Q	3	Grand*
1	**General**		GL, AR	AR	KK, AK, YK	YK	AK	Kb.08,15	Kb.13					
1.1	Number of Beneficiaries Registered	Number									856	1320	1173	3349
1.2	Number of Gardens Established	No. of Gardens	10	18	53	00	10	800	336		58	1418	11 3	3349
	100m²	"	35	80	60	82	8				176	314	248	738
	30m²	"	200	156	128	153	150		57		279	519	228	1022
	Grow Bag		175	182	267	165	176		235		303	589	697	1589
1.3	Number of OVC Served by Project	No. of OVC	12 7	2 8	1398	627	969	35	586		70	1329	4876	6275
	Male		680	10	6 8	296	73	26	252		30	575	2348	2953
	Female		567	1	750	331	96	9	33		40	754	2528	3322
1.	Number of Child headed households Participating in Project	No. of HHs	1	66	90	16	59	26	72		31	149	211	391
	Male		5	1	39		19	19	3		10	48	62	120
	Female		9	25	51	12	0	7	69		21	101	149	271
1.5	Number of Elderly headed households Participating in Project	No. of HHs		88	89	0	5	89	33		113	201	170	484
	Male		37	67	37	7	6	12	0		24	127	43	190
	Female		7	21	52	33	39	77	33		89	78	127	294
1.6	Number of Women headed households Participating in Project	No. of HHs	29	200	27	337	357	353	26		712	840	591	2143
1.70	% of Gardens managed by women	% of HHs	87.0	8.0	72.0	70.0	85.0	9 .0	60.0		93 93	59 23	50 38	67.847
1.13	% of women managing Gardens who make decision about spending income from garden	% of HHs	100	100	72	100	8	97	58		100	100	100	100
2	**raining**													
2.1	Number of Contact Gardeners Trained	Number	1	0	0	0	1	0	0		147	148	79	374
2.2	Number of Beneficiaries Trained	"	369	360	53	00	00	08	0		781	1433	761	2975
2.3	Total No. of persons trained in providing palliative care for HIV-infected individuals	No. of people	25	12	0	2	16	89	0		76	92	227	395
2.	Number of providers / caretakers trained in caring for OVC	No. of people	25	12	180	0	16	30	0		44	128	227	399
3	**Production**													
3.1	Quantity of Vegetables produced	**Kg**/bunches	**29400**	**33807 8**	**818 4**	**1600**	**22195**	**39300**	**7279**		47360	44 367 00	96075	187,802.00
4	**Utilization**													
.1	Quantity of Vegetables from HNG consumed	**Kg**/bunches of vegetable	**18600**	**21970**	**436**	**800**	**14352**	**37636**	**5998**		30784	24 483	53 297	108563
.2	Frequency of Vegetable consumption	**day**/week	**3**	**3**	**2**	**3**	**7**	**1**	**1**			1	2	1.50
.3	Frequency of protein(meat,egg,fish) consumption	day/**week**	2	0	2	1	1	0	0			1	1	1.000
.	% of households that consume vegetables every day	% of HH	8	18	0	75	85	0	0		0	24 125	41 875	33
.5	Quantity of HNG Vegetables sold	**Kg**/bunches	9 00	76 0	23	600	6600	50	928		14208	15480	30244	59932
.6	Quantity of Vegetables traded or given away	**Kg**/bunches	1200	2939	79.5	100	1102	1100	78		2321	4208	10 796	17325.00
.7	Quantity of Vegetables spoiled	**Kg**/bunches	200	1258.8	6	100	1 1	60	275		47	196 3	1738 5	1981.8
5	**Household Nutrition Garden Income**													
5.1	Average household Income from sale of Vegetables	**E B/month**/household	**30**	**36**	**25**	**30**	**35**	**15**	**5**		60	33 4	33 75	42.38
5.2	% of households that report food purchase as one of the three the main expenditures with HNG income	% of households	2	81	20	0	75	3	25		0	63 25	57 2	60.225
5.3	Household expenditure on food items	Birr/week/mon.	**15**	**29**	**50**	**0**	**22**	**10**	**1**		87 5	63 25	69 4	73.38
5.	% of households that report medical expenses as one of the three the main expenditures with HNG income	% of households	30	16	15	0	0	0	0		0	20	21 3	20.65
5.5	% of hh where medical attention was sought in the last medical crisis	% of households	32	0	15	0	0	0	0		26	37	31	31.33
5.6	% of households that report school expenses as one of the three the main expenditures with HNG income	% of households	6	3	0	0	15	0	67		0	12 5	25 75	19.13
5.7	Household expenditure on school expenses	**Birr/mon.**	**5**	**8 4**	**0**	**0**	**6**	**0**	**0 61**		0	15 33	15 33	15.33
5.8	% of children in school per beneficiary household	% of children/household	50	67	0	0	23	0	56		0	35	35	35
5.9	% of households that report purchasing assets as one of the three the main expenditures with HNG income	% of households	2	1	1	38	0	0	1.5		0	1	1 5	1.25
5.10	% of households that increased expenditure on asset purchase in the last 12 months	% of households	1	0	0	0	0	0	0		0	1	1	1
5.11	% of households that report reinvesting in the garden as one of the three the main expenditures with HNG income	% of households	15	0	0	66	55	0	61		0	27	39 5	33.25

13. APPENDIX 2

Organization	Name	Contacts
USAID -Ethiopia	Michelle Evans	Addis Ababa
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Agriculture Sector Support Programme	Mr. Tessema - Project Coordinator	TEL: 251-115-175-7138
Amhara Women Association (CIDA-HNG implemented under them)	Ms. Misrak Mamo - V/Chair person	Fax: 08-20 01 31 Bahir Dar
Bahir Dar Municipality	Ato Marye Kefyalew, The City Mayor	
Bureau of Labour and Social Affairs (BOLSA), Bahir Dar	Zenebu Tadesse, Head	E-mail: zenebut2001@yahoo.com
ECI*Africa* - Ethiopia	Tesfaye Getachew - COP	-do-
	Mandefro Messele - Supervisory Trainer	-do-
	Fikire Enku - Supervisory Trainer	-do-
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Integrated Service for AIDS Preventionand Support Organization (ISAPSO)	-Ms. Beletu Mengistu - Managing Director	Tel: 251-11-23-3252 / 233252 E-mail:ISAPSO@hotmail.com
Progress Integrated Community Development Organization (PICDO)	-Mr. Demeke Debabe - Executive Director -Mr. Aysheshim Minlargih Programme Director -Mr. Tsehaynesh Getinet - Extension Officer	Tel: 251-114-0752 E-Mail: picdo@telecom.net.et
Dawn of Hope (DOH)	-Ms Azmach Mulat - Project Coordinator -Mr. Sitotaw Assaye - Project Officer -Mr. Haddis Bitew - Agricultural Extension Officer -Mr. Minayehu G/tsadik, Finance Officer	
Bahir DarMedehanialem Orphans Destitute Family Support& Training Center (BMODFSC)	-MenaleSendeku - General Manager -Mr. Elias Hizkeal - Ass. General Manager -Lijalem Enyew Ambaw Extension Officer	Tel:251-1455292 E-mail: modifstct@telecom.net.et

14. APPENDIX 3:

Correlations between various economic variables

	Quantity of HNG vegetables sold (kg)	Average household income from sale of vegetables (ETB)	% of households report food purchase as main expenditures with HNG income	Household expenditure on food items (ETB)	% of households that report medical expenses main expenditures with HNG income	% of households that report school expenses main expenditures with HNG income	Household expenditure on school expenses (ETB)	% of households purchasing assets as main expenditures with HNG income	% of households that increased expenditure on asset purchase in the last 12 months	% of households reinvesting in garden as main expenditures with HNG income	% of households that increased expenditure on HNG inputs in the last 12 months	% of respondents report using condom every time they had sexual intercourse in previous year
Quantity of HNG vegetables sold (kg)	1.000	.634	.805	.130	.638	-.163	.913	-.327	.628	-.173	-.175	.325
Average household income from sale of vegetables (ETB)	.634	1.000	.578	.399	.403	-.685	.673	.189	.195	-.141	.364	.326
% of households report food purchase as main expenditures	.805	.578	1.000	.356	.307	.022	.948	-.476	.093	-.105	-.198	-.237

with HNG income												
Household expenditure on food items (ETB)	.130	.399	.356	1.000	.442	-.415	.235	-.462	-.080	-.632	-.391	-.403
% of households that report medical expenses main expenditures with HNG income	.638	.403	.307	.442	1.000	-.324	.437	-.287	.789	-.572	-.465	.459
% of households that report school expenses main expenditures with HNG income	-.163	-.685	.022	-.415	-.324	1.000	-.142	-.219	-.126	.537	-.208	-.365
Household expenditure on school expenses (ETB)	.913	.673	.948	.235	.437	-.142	1.000	-.354	.268	-.184	-.155	.036
% of households purchasing assets as main expenditures with HNG income	-.327	.189	-.476	-.462	-.287	-.219	-.354	1.000	-.132	.538	.865	.564

% of households that increased expenditure on asset purchase in the last 12 months	.628	.195	.093	-.080	.789	-.126	.268	-.132	1.000	-.187	-.240	.713
% of households reinvesting in garden as main expenditures with HNG income	-.173	-.141	-.105	-.632	-.572	.537	-.184	.538	-.187	1.000	.700	.090
% of households that increased expenditure on HNG inputs in the last 12 months	-.175	.364	-.198	-.391	-.465	-.208	-.155	.865	-.240	.700	1.000	.357
% of respondents report using condom every time they had sexual intercourse in previous year	.325	.326	-.237	-.403	.459	-.365	.036	.564	.713	.090	.357	1.000

* Correlation is significant at the 0.05 level (1-tailed). ** Correlation is significant at the 0.01 level (1-tailed).