

# Water for Irrigation and Life Advancement

Catholic Relief Services, Malawi

## FINAL RESULTS REPORT

**Program Title:** Water for Irrigation and Life Advancement (WILA)  
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**Time Period Covered by this Report:** April 7, 2010 to June 30, 2012



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## 1. Executive Summary

The implementation time frame for the Water for Irrigation and Life Advancement (WILA) project was April 7, 2010 to June 30, 2012. The following table summarizes the program achievements during that period.

**Table 1: Overview of key achievements**

Program Goal	Disaster risk reduction and management options for targeted vulnerable households and their communities in Southern Malawi enhanced”				
Sector	<b>Agriculture and Food Security</b>				
Objective 1	“Disaster risk reduction and management options for targeted vulnerable households and their communities in Southern Malawi enhanced”				
Subsector: Seed Systems and Agriculture inputs	Indicator	Baseline	Target	Achieved	
	1. Increase in <b>Number</b> of months of food self-sufficiency due to irrigation interventions	9	12	<b>To be reported on at the end of WALA</b>	
	2. Number of people benefiting from irrigation interventions	<i>households</i>	0	3,000	<b>3,274</b>
		<i>Individuals</i>	0	12,600	<b>13,750</b>
	3. Number of hectares (ha) of land brought under irrigation	0	300	<b>323</b>	
	4. Number of irrigation sites with active WUGs	0	60	<b>50</b>	
	5. Number of people trained in irrigation-based agriculture and crop technologies	0	3,000	<b>2,744</b>	
Sector	<b>Nutrition</b>				
Objective 2	“Targeted households’ nutrition practices are improved”				
Subsector: Nutrition Education and Behavior Change	Indicator	Baseline	Target	Achieved	
	1. Number of beneficiaries household receiving nutrition education	0	25,200	<b>18,380</b>	
	2. Number of providers (community volunteers) trained in provision of nutrition education	<i>Health promoters</i>	0	98	<b>53</b>
		<i>Lead Mothers</i>	0	-	<b>1,709</b>
	3. Average Household Dietary Diversity Score	4.3		<b>4.8*</b>	
	4. Percentage of children aged 6-23 months who receive a minimum acceptable diet apart from breast milk (continued breast feeding, age appropriate dietary diversity and age appropriate frequency of feeding)	12.3%	24%	<b>21.7%*</b>	
	4. Percentage underweight (WAZ < -2) children 0 – 59 months			<b>To be reported on from WALA Annual Survey</b>	

\*Data from 2011 Annual Survey. End of project data not as yet available.

The WILA program made good progress and achieved the majority of expected results under Objective 1. Targets under Objective 2 were not achieved due to the process used for estimation. Objective 2 targeting was tied to objective one, targeting communities engaged in the new irrigation schemes. Calculations were made based on an estimation that 60 schemes would be necessary to meet the hectareage and irrigation

beneficiary numbers but this was in fact not true, and the numbers were reached through 50 slightly larger schemes. As such the number of community members available for targeting under Objective 2 was lower than anticipated.

Project implementation was undertaken through the consortium's structure for implementation of the Title II Wellness and Agriculture for Livelihood Advancement (WALA) project. This enabled rapid start up and low management overheads. Monitoring of progress towards results was done through quarterly reports which PVOs submitted to WALA's Consortium Administration and Technical Advisory Capacity Hub (CATCH), CATCH support and monitoring visits to implementing partners and through WALA annual Surveys.

The close working relationship and activity synergies between WALA and WILA were key to the project meeting its goals. Collaboration with government facilitated the implementation of activities particularly site identification, community mobilization, scheme construction and training provision. Scheme quality was ensured through the technical inputs of a private sector irrigation consultancy firm.

Key constraints faced included shortage of fuel and commodities especially in the second year of program implementation. These were a countrywide problem and thus beyond the control of the implementing partners. The program therefore requested a three month no cost extension in order to complete major activities.

## **2. Project Overview**

### **2.1. Program and Objectives**

The Water for Irrigation and Life Advancement project had the goal of enhancing the disaster risk reduction and management options for targeted vulnerable households and their communities in Southern Malawi. The project sought to meet this goal through the promotion of small-scale, sustainable and replicable irrigation systems in vulnerable Malawian communities. It was designed to build off existing work being undertaken by the Title II Wellness and Agriculture for Life Advancement (WALA) project which was already undertaking agriculture, agribusiness, village savings and lending, maternal and child health and nutrition and disaster risk reduction activities in the same villages. WILA sought to supplement these activities by expanding the numbers of people who could benefit from both irrigation and nutrition activities.

### **2.2. Target population and needs**

The WILA Program was designed to support 3000 households (approximately 12,600 individuals) with irrigation technologies to improve their resilience to droughts and increase their food security. The program also sought to expand nutrition education activities being undertaken by the FFP funded WALA, providing nutrition training to an estimated 25,200 households in the villages where the irrigation schemes were to be developed.

The program targeted the poorest of the poor and was implemented in Southern Malawi, the poorest of the country's three regions, which has a 64% poverty rate. WILA followed the targeting of WALA which is working in the poorest GVHS of eight districts in the Southern Region: Nsanje, Chikwawa, Chiradzulu, Zomba, Thyolo, Mulanje, Machinga and Balaka. WILA uses the same baseline study as WALA and this study, conducted in November 2009 found that 72.4 % of surveyed households had experienced some months without enough food to meet the family's needs in the previous 12 months. Poverty and malnutrition are exasperated by frequent shocks and stresses, and inadequate nutrition. The WALA baseline survey found that 43.3% of households in the proposed target areas had experienced some type of shock or stress in the

past four years. 53.4% experienced drought, flood or water logging; 46% reported illness, 10% had a death in the household; 6% experienced the end of external support to the household; and 4% suffered break-up of the household or theft. The major coping mechanisms included casual labor (35.4%), reduction in number of meals (14.2%), eating undesired meals (13.8%), loans (9%) and distress sale of livestock (5.7%).

The lack of nutrition is evident in the prevalence of 42% stunting rate seen in WALA’s baseline. Poverty results in an inability to meet the daily dietary requirements (90% of the rural poor depend on rain-fed, small-scale agriculture.) Most of the poor have less than 0.75 hectares of land and are unable to diversify into production of high-nutrient crops during the rain-fed season. Dietary diversity in the WALA areas at the start of implementation was only 4.2 including mainly cereal and vegetables. Food-insecure households as targeted under WILA have the lowest dietary diversity.

Another key gap identified prior to WILA implementation were the lack of human capital (government and village volunteers) with the knowledge and skills to promote nutritional diversification. In 2009, the Government of Malawi indicated that crop diversification was not designed from a nutritional perspective<sup>1</sup>.

### 2.3. Geographic locations of project activities

**Table 2: Program Geographic coverage in Southern Malawi**

District	Traditional Authority	Implementing Partner
Nsanje	Mlolo, Mbenje (SC), Tengani, Malemia, Ndamera, Chimombo Nyachikadza, Makoka (SC)	Total Land Care
Chikwawa	Makwira, Ngabu, Lundu, Maseya, Katunga, Kasisi	CRS / Chikwawa Dioces
Thyolo	Nsabwe, Bvumbwe, Thukuta, Kwethemule, Kapichi, Nchilamwela, Thomas	World Vision
Mulanje	Mabuka, Laston Njema, Nthiramanja, Chikumbo	Africare
Zomba	Kuntamanji, Mkumbira, Malemia, Mwambo	Emmanuel International
Machinga	Kawinga, Mlomba, Mposa, Chamba	Emmanuel International
Zomba	Mlumbe, Chikowi, Mbiza	Save the Children
Chiradzulu	Nchema, Kadawere, Chitera	Save the Children
Balaka	Nsamala, Kalembo	Project Concern International
Machinga	Parts of Sitola	Project Concern International

## 3. Project Performance

Under the goal of enhancing the disaster risk reduction and management options for targeted vulnerable households and their communities in Southern Malawi, the project worked to meet the following two objectives.

**Objective 1:** “Disaster risk reduction and management options for targeted vulnerable households and their communities in Southern Malawi enhanced”

**Objective 2:** “Targeted households’ nutrition practices are improved”

<sup>1</sup> Janice Meerman, “Making nutrition a national priority: review of policy processes in developing countries and a case study in Malawi” 2008.

These objectives reflect the two sub sectors of activity: seed systems and agricultural inputs and nutrition education and behavior change. Progress against each objective is described below.

**Objective 1: “Disaster risk reduction and management options for targeted vulnerable households and their communities in Southern Malawi enhanced”**

Indicator		Target	Achieved
Number of people benefiting from irrigation interventions	<i>households</i>	3,000	<b>3,274</b>
	<i>Individuals</i>	12,600	<b>13,750</b>
Number of hectares (ha) of land brought under irrigation		300	<b>323.2</b>
Number of irrigation sites with active WUGs		60	<b>50</b>
Number of people trained in irrigation-based agriculture and crop technologies		3,000	<b>2,744</b>

In order to measure project impact the consortium also seeks to measure progress against the following indicators:

**Increase in Number of months of food self-sufficiency due to irrigation interventions**

This indicator will be measured as an integrated part of the WALA endline survey in 2014 and made available to OFDA at that time.

**Number of hectares (ha) of land brought under irrigation**

WILA met and slightly exceeded the target for this indicator.

Through discussion with local government and technical assessment, the program identified 50 areas with potential for irrigation. Within these 50 areas 332.2

hectares of potentially irrigable land were identified. Of these areas, 20 schemes (159.5 ha) were recommended for gravity scheme development, using stream diversion and the remainder were recommended for lift irrigation, using treadle pumps. As such 48% of the hectares were designated for gravity and 52% for treadle pump schemes.

**Requirements prior to site development**

1. Adequate availability and quality of water;
2. Appropriate size of irrigable land in relation to available water;
3. Land use arrangements and signed agreements in place between land owners and irrigation water users;
4. Assessment of possible environmental impacts relating to irrigation farming;
5. Agreement to establish an irrigation water users group (IWUG) to lead in the process of site development and operations and maintenance of the scheme;
6. Community willingness to contribute labor in kind towards the development of the site;
7. Signed cooperation agreements between the implementing partner and the IWUG and community leadership;
8. Agreement to establish a scheme fund to be used in operating as well as maintaining the irrigation system;
9. Agreement to integrate irrigation intervention with other WALA activities such as Village Savings and Loans (VSL).

All 50 schemes were developed for a total hectareage of 323 out of the 332.2 hectares that were identified as potentially irrigable. This is 8% more than the targeted 300 hectares. The remaining identified hectareage, which is in Nsanje and Chikwawa, will be developed under WALA during the next two years. Table 4 below shows the number of scheme, land brought under irrigation and direct cost by each implementing partners.

**Table 4: Number of schemes and hectares developed**

PVO Name	Number of schemes	Total Hectares	Micro Grants (USD)
Total Land Care	6	45.5	39,325.54
CRS /Chikwawa Diocese	5	36.5	46,800.00
World Vision	5	50	58,113.00
Save the Children	8	55	55,996.00
Africare	7	55	62,996.99
Emmanuel International	9	41	38,753.65
Project Concern International	10	40	47,673.54
	<b>50</b>	<b>323</b>	<b>349,658.72</b>

Development of schemes, especially stream diversion – gravity systems, did not progress as per plans due to intermittent supply of construction materials and fuel. A lack of foreign currency in Malawi led to periods where fuel and supplies were either unavailable or available in inadequate quantities for the work to proceed. This resulted in a slowing down of construction works and required the consortium to request a three-month no cost extension from April to June 2012. By the end June 2012, all major construction works were completed.

#### **Number of people benefiting from irrigation interventions**

The program identified and supported 3,274 beneficiary households, approximately 13,750 individuals exceeding its target of 3000 households and 12,600 individuals. The table below is a summary of the numbers of irrigation beneficiary households supported by each implementing partner. It demonstrates that the number of people registering for irrigation farming continued to increase up to end the project.

**Table 5: Number of people benefiting from irrigation interventions**

PVO	LOP Target	Total number of HH engaged in irrigation
Total Land Care	400	546
CRS /Chikwawa Diocese	400	439
World Vision	500	414
Save the Children	400	585
Africare	500	479
Emmanuel International	400	366
Project Concern International	400	445
<b>Total</b>	<b>3,000</b>	<b>3,274</b>

**Table 6: below shows the gender breakdown of the household members who joined the irrigation scheme. The proportion of men to women was roughly 1:1.**

PVO	Target	HH representatives engaged in irrigation		
		Male	Female	Total
Total Land Care	<b>400</b>	333	213	<b>546</b>
CRS / Chikwawa Diocese	<b>400</b>	260	179	<b>439</b>
World Vision	<b>500</b>	185	229	<b>414</b>
Save the Children	<b>400</b>	226	359	<b>585</b>
Africare	<b>500</b>	250	229	<b>479</b>
Emmanuel International	<b>400</b>	173	193	<b>366</b>
Project Concern International	<b>400</b>	155	290	<b>445</b>
	<b>3,000</b>	1,582	1,692	<b>3,274</b>

Beneficiary selection was linked to identification, assessment and selection of potential irrigation schemes for construction. Program staff in collaboration with government counterparts conducted community sensitization meetings in villages which had potential for irrigation. The meetings were conducted in order (1) to raise awareness on the WILA irrigation and nutrition intervention implementation approaches, (2) to share the selection criteria for identifying irrigation sites and reach an agreement with communities on the process of site selection, (3) to establish common understanding on contribution of resources and (4) have a common understanding on the social and environmental impacts of developing irrigation schemes. Village leaders and program staff also discussed implementation procedures. For communities to participate and benefit from the irrigation development activities, agreement was reached on the expected outputs, roles and responsibilities of the various stakeholders and the required in kind contribution. With support from village leadership, interim committees were set to lead the project activities including mobilizing and registering beneficiaries.



*Maize & paprika crop at Mdzalaladzala Irrigation Scheme in Nsanje District  
Picture by: Gift German*



*Irrigation Water Users Committee undergoing training*

**Number of irrigation sites with active Irrigation Water Users Groups (IWUG) hectares**

A key strategy for management and sustainability of the irrigation schemes is the water users group. Groups were organized at each site. The group members elected an Irrigation Water User

Committee and subcommittees including marketing, water management, and discipline.

The target for this indicator was set at 60, based on the assumption that 60 schemes each averaging 5 HA would be required to reach the targets for beneficiaries and hectareage. In fact both these targets were met through the development of 50 schemes (averaging 6.54Ha) and as such the number of IWUGS formed was 50, one for each scheme.

The IWUGS and Water User Committees (IWUCs) were trained to enable them to understand group dynamics and the need to managing the schemes for sustainability. The groups were guided to develop norms and regulations to be used in managing their schemes. Training topics included leadership, conflict resolution, and record keeping. Table 6 below shows the numbers of beneficiaries trained in various topics to help them with organizing their groups and managing them effectively.

**Table 7: Number of people trained in topics to build capacities of IWUGs and WUCs**

Training Topics	Group Members Trained		
	Male	Female	Total
<b>Introduction to WUG concept</b>	593	811	<b>1,404</b>
<b>Constitution Formulation</b>	1,068	1,072	<b>2,140</b>
<b>Record Keeping</b>	1,068	976	<b>2,044</b>
<b>Leadership</b>	998	1,224	<b>2,222</b>
<b>Conflict Resolution</b>	998	1,032	<b>2,030</b>

### **Number of people trained in irrigation-based agriculture and crop technologies**

WILA had sought to train all individuals involved in the new irrigation sites in agricultural and crop technologies in an effort to maximize on productivity and profitability from the new sites. The project attained 83% of this target, reaching 2744 people from the 3000 targeted. Where irrigation beneficiaries did not attend the trainings community agriculture extension volunteers still provided coaching and mentoring.

As shown in Table 8 below, a number of different trainings were provided. The largest number of attendees was recorded under conservation agriculture which registered a total of 2,744 farmers (83% of all the beneficiaries). The remainder of the trainings reached a subsector of this group.

**Table 8: Number of people trained in irrigation-based agriculture and irrigation technologies**

Topics	Total Number of people trained		
	Male	Female	Total
<b>Water Management</b>	1,087	661	<b>1,748</b>
<b>Conservation Agriculture</b>	1,145	1,599	<b>2,744</b>
<b>Safe Chemical Use</b>	735	793	<b>1,528</b>
<b>Farming as a Business</b>	588	558	<b>1,146</b>
<b>Watershed Conservation</b>	600	488	<b>1,088</b>
<b>Participatory Program Management &amp; Evaluation</b>	19	55	<b>74</b>

Key trainings included farming as a business in which farmers were given basic skills in marketing and improving the profitability of the irrigation activities; conservation agriculture in which the farmers were given the skills to improve the water holding capacity and soil fertility of the fields; and water management in which the farmers were introduced to the different requirements for water by different crops and at different stages of growth.

Training in safe chemical use was prioritized as part of the WALA Environment Management Plan. The Initial Environmental Examination report undertaken by WALA noted that farmers in the target areas were already using chemicals for a number of crops. While neither WALA nor WILA included a component of chemical promotion, the fact that farmers were already engaged in this activity necessitated an input to ensure the chemicals were used safely.

Watershed Conservation training was provided to help the IWUG members to understand how to manage the watersheds in a way which will contribute to the sustainability of water needed for the irrigation intervention. This activity was directly linked to the inputs provided via WALA. Where the work required for catchment conservation were very labor intensive, the irrigation beneficiaries were joined by the other village members as part of the WALA food for work component.



A mulched second crop of maize at Mkulowathanki Irrigation Scheme

Fuel shortages delayed delivery of all the trainings, preventing staff from travelling to trainings as per the plans agreed with the community. Due to the extended period of fuel scarcity, implementing partners resorted to calling FEVs and IWUG members from several schemes together for training and then relying on these trained individuals to replicate the training at scheme level.

### ***Increase in number of months of food self-sufficiency due to irrigation interventions***

The project sought to increase the number of months of food self-sufficiency. To reduce costs, data to measure progress in this area was scheduled to be collected through the baseline and end line surveys of the WALA project. As such data for this indicator will be made available in 2014. However qualitative information relating to this indicator was collected as part of the externally conducted final evaluation of the WILA project. Evaluators asked community participants of the focus group discussions conducted in 11 of the 50 sites to reflect on their food security situation. More than 90% of the project beneficiaries in the FGDs reported that the project had added at least an additional 3 months food security for their households. Impact on food security was greatest where participants has grown high value crops such as beans, vegetables (cabbages, onions, tomatoes, mustard) and green maize. Communities indicated that for most households *“hunger is now behind them thanks to WILA project.”* Scheme members have also been able to use their increased income to invest in household assets and agricultural inputs such as livestock, corrugated sheeting for house roofs, bicycles and furniture. Several households reported that *“we have bought corrugated sheets for a future house”*

## Objective 2: “Targeted households’ nutrition practices are improved.”

Indicator		Baseline	Target	Achieved
Number of beneficiaries household receiving nutrition education		0	25,200	<b>18,380</b>
Number of providers (community volunteers) trained in provision of nutrition education	<i>Health promoters</i>	0	98	<b>53</b>
	<i>Lead Mothers</i>	0	-	<b>1709</b>
Average Household Dietary Diversity Score		4.3		<b>4.8*</b>
Percentage underweight (WAZ < -2) children 0 – 59 months		21	16	Will be collected as part of WALA end line

- *Data is from 2011 WALA Annual Survey and will be updated based on findings from 2012 Survey.*

The consortium had also proposed to measure progress against the following indicator

**Percentage of mothers of children age 6-23 months who state at least three recommended complementary feeding practices.**

However in the early months of project implementation, this indicator was replaced by a higher level recognized Government of Malawi and USAID indicator.

**Percentage of children aged 6-23 months who receive a minimum acceptable diet apart from breast milk (continued breast feeding, age appropriate dietary diversity and age appropriate frequency of feeding) (Outcome) (FFP) (GoM – MoAFS)**

Indicator	Baseline	Target	Achieved
Percentage of children aged 6-23 months who receive a minimum acceptable diet apart from breast milk (continued breast feeding, age appropriate dietary diversity and age appropriate frequency of feeding)	12.3%	24%	<b>21.7%*</b>

- *Data is from 2011 WALA Annual Survey and will be updated based on findings from 2012 Survey.*

### Targeting and Implementation approach

The program identified and supported households in villages with WILA irrigation schemes or villages who may not have schemes but the members were participating in irrigation farming on a WILA irrigation scheme in the nearby village. Villages were identified using the WALA vulnerability criteria. Households with children under 5 years of age and/or pregnant and lactating women were selected and supported to self-form clusters of 10 to 12 households. From these clusters a lead mother or father was chosen. These volunteers were linked with each other through a care group. Each care group was composed of 10-12 lead mothers or fathers, also known as care group volunteers.

This care group structure is also used within the WALA program and as such is well known and understood by both the implementing partner and the communities. Care groups are supported by health promoters,

members of the communities identified by program in collaboration with village leadership. This activity was undertaken in conjunction with WALA.

Results achieved under objective 2 are discussed in below.

### **Number of providers (health care and community volunteers) trained in provision of nutrition education**

The care group structure is well defined and dictates the proportion of health promoters to care groups to households. As such, once the households were identified it was discovered that it was not necessary to recruit the full target of 90 health promoters and 53 were selected. The WALA program staff and community leaders identified, recruited and trained the health promoters to be a frontline team, training and supporting 1709 lead mothers and fathers to deliver messages and provide counseling on key maternal and child health and nutrition practices. Within each implementing partner, the Health Promoters were supervised by project health field supervisors under the leadership of WALA Health Coordinators.

At the community level the Health Promoters collaborated with government health surveillance assistants. Through the care group structure, the Health Promoters trained, coached and supervised the 1,709 lead mothers and fathers, providing them with flipcharts to assist in the nutrition education. In turn the lead mothers and fathers conducted door to door visits to their group members passing on what they had learned and counseling them in healthy behaviors. The care group volunteers (Lead mothers and fathers) compiled progress reports and general updates on disease or death incidences and submitted these to the Health Promoters on monthly basis. Health promoters and care group volunteers identified and trained under WILA will continue to be supported under WALA until the end of this project in 2014.

### **Number of beneficiary households receiving nutrition education**

Through the approach described above WILA provided nutrition education to 18,380 households, 73% of the project target. The failure to meet the target was due to the presence of WALA in the same areas and the approach of targeting only those communities who were involved in the irrigation activities. As the target for hectareage and irrigation beneficiaries was reached through 50 rather than the anticipated 60 schemes, the number of communities involved was fewer than estimated and therefore the size of the target population was also less.

Table 9 below shows the distribution of the nutrition education beneficiaries across the implementing partners.

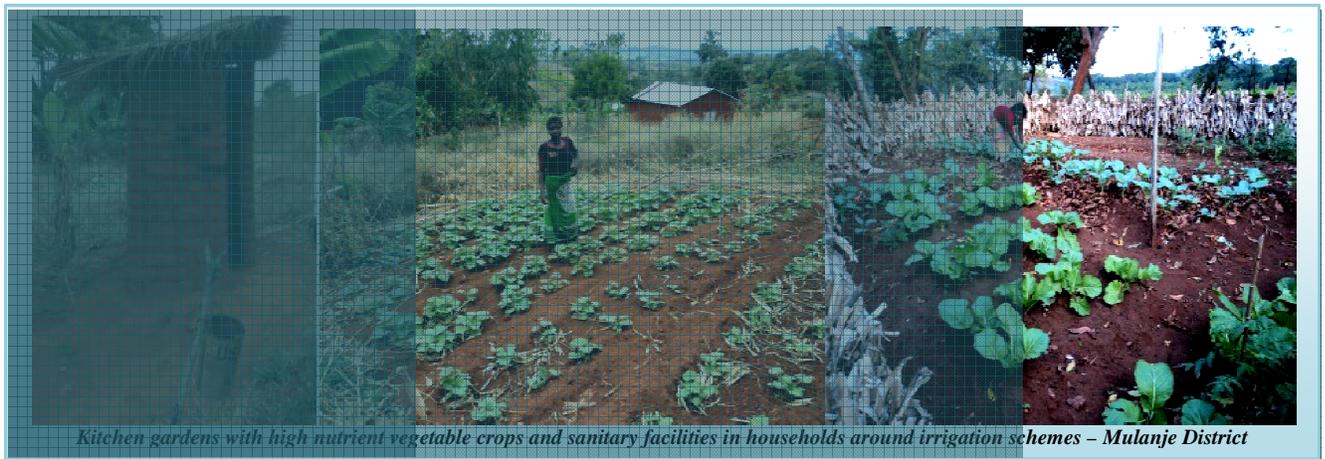
**Table 9: Number of people who received nutrition education**

Name of PVO	Cumulative number of Households Trained
Total Land Care	2,760
CRS / Chikwawa Diocese	2,077
World Vision	2,575
Save the Children	3,951
Africare	1,750
Emmanuel International	1,080
Project Concern International	4,187
<b>TOTAL</b>	<b>18,380</b>

Using flipcharts on different modules developed by the WALA program, the care group leaders (Lead Mothers / Fathers) trained their clusters member households in hygiene & sanitation, Infant and Young

Child Feeding (breast feeding and complementary feeding), cooking demonstrations and Maternal Nutrition. The trainings were delivered in sequence using the four modules. WALA nutrition activities will continue in the community beyond the WILA program.

The supported households were encouraged to grow nutritious crops in their kitchen/home gardens or on part of their irrigated field where relevant. The program promoted production of orange fleshed sweet potatoes and green vegetables to improve consumption of vitamin A and Iron in children. Community Led Complementary Feeding and Learning sessions (CCFLS) were undertaken, providing demonstrations of how to provide a balanced, nutritious diet to children using locally available foodstuffs including crops grown in irrigation sites like potatoes and vegetables. These sessions are held twice a year to demonstrate different dishes according the seasonal availability of the foodstuffs.



*Kitchen gardens with high nutrient vegetable crops and sanitary facilities in households around irrigation schemes – Mulanje District*

### **Result 2.3: Average Household Dietary Diversity Score**

Dietary diversity score is a function of access to diversified food and knowledge on how to prepare balanced diverse foods. The WILA irrigation farming contributes towards increased production of diverse nutritious food crops in addition to those harvested from rain-fed cultivation. The nutrition education and CCFLS also emphasized the importance of taking a balanced diet.

The WALA Baseline Survey conducted in September 2009 established the population had an average dietary diversity score of 4.3. Progress on the score was monitored through WALA annual surveys and at the end of FY11 was found to be 4.8, an improvement of 0.5. The next annual survey is currently underway and results will be available within the next few months. Like all the annual survey data, this score applies to all WALA beneficiaries. Some more detailed analysis a greater number of irrigation beneficiaries consuming fruit and oils

**Table 10: Analysis of 2011 Annual Survey Dietary Diversity Data showing comparing irrigation and non irrigation beneficiaries.**

Question	Non-irrigation Group				Irrigation Group				Difference	
	N	Mean	Std. Dev.	Std. Error Mean	N	Mean	Std. Dev.	Std. Error Mean		
Did You Eat Any Food Made From Millet, Sorghum, Maize, Rice, Wheat	795	1.00	.061	.002	301	.99	.081	.005	0.00	-0.29
Did You Eat Any Food Made From Yams, Manioc, Cassava, Roots/Tubers	795	.38	.486	.017	301	.46	.499	.029	0.08	7.73
Did You Eat Any Vegetables	795	.78	.412	.015	301	.82	.387	.022	0.03	3.36
Did You Eat Any Fruits	795	.33	.470	.017	301	.48	.500	.029	0.15	14.55
Did You Eat Any Meat	795	.12	.328	.012	301	.18	.387	.022	0.06	6.07
Did You Eat Any Eggs	795	.09	.287	.010	301	.12	.329	.019	0.03	3.24
Did You Eat Any Fish	795	.36	.482	.017	301	.44	.497	.029	0.08	7.71
Did You Eat Any Beans, Peas, Lentil, Nuts	795	.50	.500	.018	301	.53	.500	.029	0.03	2.51
Did You Eat Any Milk or Any Food From Milk	795	.03	.175	.006	301	.06	.244	.014	0.03	3.17
Did You Eat Any Food Made With Fat, Oil, Butter	795	.46	.499	.018	301	.66	.474	.027	0.20	19.70
Did You Eat Any Sugar/honey	795	.35	.477	.017	301	.40	.491	.028	0.05	5.23
Did You Eat Any Other Food	795	.18	.382	.014	301	.23	.421	.024	0.05	5.19

**Minimal acceptable diet of children aged 6-23 months (continued breast feeding, age appropriate dietary diversity and age appropriate frequency of feeding)**

Data is not yet available to measure progress against this indicator as of the end of the WILA project, however data from the 2011 annual survey shows that the percentage of WALA and WILA beneficiaries' children (aged 6-23 months) who consumed a minimal acceptable diet rose from the baseline of 12.3% to 21.7%.

**Percentage of children 0 – 59 months who are underweight**

Data to measure progress against this indicator will only be collected at the end of the WALA project in 2014. However qualitative information relating to this indicator was collected as part of the externally conducted final evaluation of the WILA project. Evaluators asked community participants of the focus group discussions conducted in 11 of the 50 sites to reflect on their food security situation. FGD participants reported improved nutrition, particularly increased utilization of vegetables to complement maize during the lean period, reduced incidences of nutritional related diseases and reduced numbers of malnourished children.

**4. Unforeseen Circumstances**

In implementing the WILA program the consortium faced substantial problems in accessing fuel and irrigation scheme construction materials as the lack of foreign exchange led to inadequate quantities in country. Due to these problems the program experienced delays in beneficiary training as well as delayed progress in construction due to unavailability of construction materials, difficulties in transporting the materials to the site and inadequate levels of supervision. A three month no cost extension enabled activities to be completed despite these constraints.

## 5. SUCCESS STORY

### The Dambo la Ngondo Irrigation Group's Story

Dambo la Ngondo is a 5ha irrigation scheme along the Liwawazi River in TA Kachenga, Balaka district. The farmers are now in their second season of irrigated crop production.

Twenty-four women and twenty men are cultivating crops under irrigation. Whilst most farmers thought only of growing maize, Njira ya Goma and Sydrick Katundu, two young cousins went against all the odds and decided to grow cabbage and onions on a small patch 30m by 20m on their grandparent's land. Both of them are secondary school drop-outs, each married with a child. Njira ya Goma used to try to support himself through ganyu (piece work), while Sydrick was self-employed as the community photographer. Both felt however their endeavors were not enough to support their family.

The two men became convinced that irrigation farming was the answer. And so they started operations immediately after the rains in 2012. They estimate harvesting enough cabbage and onion to give them a gross return of K400,000. Sydrick laments: "It was very strange for our community, because farming activities are taken as old people's responsibilities." The men said that they had no idea of what to expect from the irrigation activities, but the lack of income prompted them to try it out.



"After selling our produce we plan to buy maize to supplement the poor rain-fed harvest. We will also buy a motorized pump so we can expand the irrigation plot size." said Njira ya Goma. He added that they have been looking for a viable business and irrigation was a dream come true.

#### Sydrick and Njira ya Goma watering their crops

The farmers of the Dambo la Ngondo irrigation scheme have seen what these two young men can achieve, and have changed their minds: "Next year we are going to grow vegetables on half of our scheme. Although maize is our main staple, we can buy it instead using the money earned from sale of vegetables" said the chairperson of the scheme, while the rest of the farmers nodded their heads in agreement.

Group Village Headman Zalengera comments: "My village is full of young and energetic people who are just idle, nursing the wounds of what they call poverty, while within the village there are a lot of economic activities that need to be explored." The village headman also noted he couldn't believe it when he saw the two men's tireless work in the field. He thinks this is going to be a foundation stone for the rest of the young men in the community.

## Chandamale Scheme's Story

The introduction of improved irrigation in Ndaje village did not attract the expected number of participants, given the size of the village. Instead, most villagers continued to rely on the Borassus palm to make furniture and mats and cutting down trees to produce charcoal. Just 24 households bucked the trend and established an irrigation group. Together they identified a 2ha piece of land, which is less than a tenth of a hectare per farmer.

In the first season of production farmers grew maize intercropped with indigenous vegetables, looking to offset a poor rain fed harvest. With the irrigation harvest in, the new irrigation farmers were overjoyed with their results; there was enough to feed the family and to sell in order to purchase livestock, improve housing and start off-farm businesses.

Upon witnessing these successes other once skeptical farmers decided they wanted to join the Chandamale irrigation group. They approached the executive committee of the scheme and together they discussed possible ways of accommodating more people willing to become an irrigation farmer.

Kenneth Peter, the Chairperson of the Water User Group said that the committee decided to take the people on board because it will be one way of protecting the forest that is becoming denuded with each passing day. It was decided that the scheme should be expanded to accommodate more farmers. Representatives of Chandamale Scheme approached the landowner of the area for earmarked for irrigation expansion. Fortunately, the owner Mr. Mtundu-Watha was willing to offer his land to the irrigation scheme because he had thoughts of becoming an irrigation farmer. Mthundu-Watha explains: "I decided to offer my



land to the irrigation participants because I too want to benefit from the opportunities; I am tired of burning charcoal to feed and look after my family."

The Chandamale scheme has now expanded 200% (2 to 6ha) and the number of participants has increased from 24 to 51. The expansion has attracted the attention of neighboring M'balaka village, which is now calling upon PCI to support the development of a similar irrigation scheme in their area.

**Mr. Kenneth Peter showing his new goat purchased using some of the proceeds from irrigated crop**

**production**

## Raphael's story

Raphael Mondwe is proud of his new house. The irrigation farmer who hails from Felo village, in Nsanje district moved this year from shabby grass thatched house to sturdy brick built metal roofed house which he built using the money from the sale of vegetables grown on his irrigation plot. The 34 years old father of 7 who is a member of Mbangu Irrigation cluster grew cabbage, chinese cabbage, mustard, rape, spinach and tomatoes in addition to 21 bags of maize for his family's consumption.

Vegetable sales brought Raphael 230,000 malawi kwacha which he was able to use to buy 26 corrugated iron sheets and planks and pay laborers and artisans, as well as purchasing farming inputs in readiness for the coming irrigation season.



Mondwe believes that his successful year was due not only to the provision of treadle pumps and wells supported by WILA, but also the new conservation agriculture knowledge and practices which reduced moisture loss and protected the plants. Mondwe concludes by saying *"ulimi wakudimba ngwakugunyalitysapyakwangwa"* meaning irrigation farming is more profitable.

## Jonathan's Story

Jonathan Mindozo from Nsanje knows the benefits of irrigation, crop diversification and intercropping. The 56 year old father of 5 started farming a long time ago but persistent droughts and heat meant he rarely had a good harvest. Things changed for Jonathan in 2010 when WILA and WALA brought irrigation, village savings and loans, improved farming techniques and conservation agriculture to his village. *"I used to concentrate on sweet potato production only but with the coming of Total Landcare I am able to intercrop with other crops," said Jonathan.*



Jonathan joined Tiyanjane VSL group and Khomemsasa Irrigation group. On his 0.3 ha of irrigated land he interplanted maize with sweet potato and common beans (phaseolus) and managed to harvest 1750kg of maize, 24bags of sweet potato and 150 kg of beans. With this, the father of 5 children managed to feed his family all the year round. This year Jonathan and his wife Eveless have again interplanted maize with beans on the same plot and expect to harvest another bumper yield.

He smiles and says *" ulimi ngwadidi maningi kwa munthu anawangisira kuphata basa ku munda"* meaning that farming is profitable to those who work hard in the field.