



**Nutrition
at the Center**

*Integrated Programming to
Maximize Human Potential*

Quarterly Report

Supporting the Use of the Treadle Pump to Promote Food Security project

Country Office: Zambia

Reporting Period: July 2017 – September 2017

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1. Executive Summary

The report highlights activities carried out between July and September 2017 under the “Supporting the Use of the Treadle Pump to Promote Food Security project” being implemented in all seven health centers covered by Nutrition at the Center (N@C) project in Chadiza District.

The “Supporting the Use of the Treadle Pump to Promote Food Security project” supplements the Nutrition at the Centre project that focuses on Maternal Infant and Young Child Nutrition (MIYCN), Food Security, Water, Sanitation and Hygiene (WASH), and Women Empowerment activities in Chadiza and Lundazi districts of Eastern province.

The project strengthens the food security component of N@C project and its respective households it targets through the promotion of homestead gardens to the Nutrition Support Group (NSG) members which lead to the improved dietary diversification at household level. The project aims at reducing the time taken by women to fetch the water for irrigating the gardens and reduces the labor-intensiveness of gardening for mothers who also have the responsibility of caring for young children, relying on buckets to fetch water limits how much water can be spared for production after household use. For these reasons, mothers were often not motivated to engage in household gardening, and many families resort to coping strategies that include eliminating vegetables and

other more nutritious food from their diets as they were not able to afford purchasing these goods on the local markets.

Therefore, the project promotes the use of small water lifting devices which are treadle pumps to water gardens as a way of reducing women's work load and also increase the production and dietary diversification at household level. In addressing the challenges faced by women with regard to irrigation, the "Supporting the Use of the Treadle Pump to Promote Food Security" project is being implemented in seven health facilities of Chadiza where N@C operates namely Bwanunkha, Chadiza Urban, Madzaela, Miti, Mkumbudzi, Sinalo and Tafelansoni health centers. The project basically reaches out to 13,890 beneficiaries (2,315 direct beneficiaries and 11,575 indirect beneficiaries).

The treadle pump project interventions are being implemented by N@C with its partners mainly the Ministry of Health and Ministry of Agriculture. The front line staff, Agriculture Extension Officers constantly provide the technical support to Nutrition Support Group (NSG) leaders and the general members of NSGs on the production side of the activities and Health Facility Staff from Ministry of Health provide the utilization part of the vegetables for improved dietary diversification like the cooking demonstrations for the babies' different age groups. At NSG level, the group leaders are responsible for mobilization of 100 identified groups targeted for the treadle pump interventions and these volunteers are direct contact points in the community and are well positioned to ensure that the interventions supported by CARE are owned by the community for sustainability purposes.

Objective of the Project

The objective of the treadle pump project is to ensure that women with access to water sources have expanded areas of production not only through reduced Labour but also time taken to irrigate the gardens and in turn share/sell at a reasonable cost to other mothers in the adjacent areas that may not have access to water which lead to increased vegetable consumption and dietary diversification at household level. This would result in increased consumption of nutrient rich vegetables in the catchment areas.

2. Descriptive Narrative of activities implemented during the quarter with respect to the project objectives

The report basically highlights the interventions that were implemented between July and September, 2017. During the period under review a number of interventions were implemented which has resulted into notable improvements in the availability of nutrient rich vegetables at households of nutrition support group members. In this quarter, the following activities were conducted;

- a. Planting and monitoring of nurseries and transplantation of seedlings
- b. Distribution of greenhouse plastics and platform construction demonstrations
- c. Cooking demonstrations
- d. Monitoring

Planting and monitoring of nurseries and transplantation of seedlings

The groups that are beneficiaries of the treadle pump project have shown enthusiasm and commitment to increase vegetable production. It was established that all the 100 groups put up nurseries and have transplanted to the main individual household gardens. In 2016/17 farming season, Zambia had received rainfall beyond normal pattern hence, some areas were still flooded which necessitated for the groups to source for alternative pieces of land to establish their nurseries and main gardens.

Agriculture Extension Staffs were on the ground to offer technical support to the groups. The Agriculture Extension Officers (AEOs) constantly provided the groups with technical support on how to setup the nurseries during the unfavourable conditions. The groups employed the raised beds technic to set up the nurseries in the flooded areas and transplanted the seedling to the gardens setup on favourable sites for vegetable production.

The technical support provided has helped the women engaging in gardening to have technical know-how on the vegetable production and they have managed to increase the vegetable production levels and able to consumer more vegetables at households than before the treadle pump initiative. The women have further experienced an increase in the

amount of surplus vegetables which is sold to other households and earn more extra income used to meet the daily needs of households.

Distribution of greenhouse plastics and Demonstration of Platform Construction

The project shifted from the use of solar driers to greenhouse plastics and raised drying platforms since the latter food preservation mechanism is more cost effective, easier to adopt and maintain by the locals. In this vein, 500m x 9m of greenhouse plastics were procured and distributed to all the 7 Health Centers of Chadiza targeted by NAC project. The following table shows the distribution of the greenhouse plastics and additional seed of orange maize which has been planted with the purpose of both consumption and income generation.

Name of Health Facility	Greenhouse plastics in meters	Orange Maize in Kgs
Bwanunkha	80 x 9	7.2
Chadiza urban	50 x 9	4.5
Madzaela	80 x 9	7.2
Miti	60 x 9	5.4
Mkumbudzi	60 x 9	5.4
Sinalo	80 x 9	7.2
Tafelansoni	90 x 9	8.1

The agriculture extension officers further conducted demonstrations on the construction of the platforms for drying the vegetables. Each health facility had a platform construction demo making a total number of 7 demonstrations. The demonstrations on construction of the raised platforms were done at a central place of the Health Facility, and later replicated in the communities. These demos facilitated the process of imparting knowledge in the NSLs and CHVs in order for the group members to be provided with timely technical support on the construction and maintenance of the drying platforms covered with the greenhouse plastics.

In the past, the majority of women were drying vegetables using the traditional methods which do not retain the much needed nutrients. However, the newly adopted drying method is basically helping mothers to dry the surplus vegetables for future consumption in a more hygienic manner.

Women have started shifting from the traditional drying methods of using the earth plain stones and reed mats placed on the ground and in the direct sunlight. The greenhouse plastics that were provided by the project are helping the women to preserve nutrients during vegetable drying process, protect the food from contamination and also quicken the rate of drying since the plastics are specifically meant to absorb more heat as it comes from the sun.

Cooking demonstrations

The project facilitated the cooking demonstrations using most of the vegetable ingredients from the gardens in four facilities. Four of the 7 health facilities had conducted the cooking demonstrations focused on food processing and preservation, and preparation of the various menus for children from the age of six months to two years.

The NSGLs and CHVs participated in the activity and were requested to bring the locally available food including from the gardens for demos to help them understand ways through which they can preserve food and prepare the highly nutritious foods for their children. It is envisioned that, after acquisition of knowledge through cooking demonstrations, NSGLs and CHVs will roll the cooking demonstrations at group level where cooking demonstrations will be conducted with mothers and caregivers using most of the ingredients from the gardens.

The cooking demonstrations that were conducted have increased knowledge of NSGLs and CHVs and are fully equipped with facilitation skills needed to perfectly replicate the lessons on food preservation and preparation of complementary foods for children of aged between six months and 2 years. The treadle pump project has helped women to have sufficient vegetables and other ingredients sourced from the gardens which is contributed towards the cooking demonstrations. The women have adequate vegetables used for cooking demonstrations.

Monitoring of Project Interventions

The project and partner staff have continued to monitor the activities, processes and outcomes of the treadle pump project. The staff have conducted field visits to establish the outcomes of the project interventions, identify gaps and approaches to address the challenges to achievement of the project objectives. It was also established that the majority of households have experienced an increase in the vegetables consumed. After the implementation of the a treadle pump interventions,

the majority about 16 percent of households have shifted from consuming 1 to 10 batches of vegetables weighing about 500 grams to 51 to 60 batches (500g each) on a monthly basis. Therefore, each member of the household previously consumed 28 grams daily and now consumes about 154 grams daily. This shows that there has been an increase of about 126 grams of vegetables consumed daily by individual household members.

During the quarter under review, NSGs were visited and it was established that, almost all the households whose mother or caregiver was targeted by the treadle pump interventions, owned a homestead garden with a variety of vegetables. The project distributed about 12 different vegetable varieties and the type of vegetables being grown per household has increased from about 5 different types to about 8-9 different vegetable types, further the area under production for the different vegetables and quantity and quality has increased/improved which has improved dietary diversity at household level.

The treadle pumps supplied by the project are being extensively utilized by 42 percent of the NSG members. This is so because the initial assumption was that all the NSG members would have their gardens in one location and that each NSG would have their own treadle pump, however the treadle pumps procured from the allocated budget were not enough to go round all the NSGs and hence 2 groups were made to share 1 treadle pump and this brought about the challenges of not all members being able to access the treadle pump due to location limitations as members were found to be in different locations and moving the treadle pump from one location to another became cumbersome. The members using the treadle pumps have testified that the treadle pumps basically reduces time spent on watering the gardens. Previously they used to spend about 8 hours of watering the vegetables. With the introduction of the treadle pump, the time spent on irrigating the vegetables has reduced drastically and now spend between 15minutes and 2 hours maximum to irrigate the vegetables extensively. Treadle pumps have also reduced the workload of women when watering the vegetables and this provides mothers or caregivers with ample time to do other chores as well as to prepare the highly nutritious meals for their children.

3. Learning

- It was noted that, seed supplements by the project boosts the morale of the NSG members to engage in gardening and increase vegetable production. Almost all the groups were eager to grow vegetables despite not receiving treadle pumps. Therefore, the surplus seeds and/or seedlings from the treadle pump project targeted groups were distributed to groups that did not receive treadle pumps. The groups that did not make it to the list of treadle pump project beneficiaries in the last farming season equally received adequate rains such that even areas that are usually dry still have pockets of water to support gardening activities.
- Due to proper garden management by the groups that were trained and received treadle pumps, the groups that did not receive seeds were able to access the surplus seedlings from the neighboring groups and this increased the number of households benefiting from the treadle pump project.
- Constant monitoring of the groups increases the group cohesion and reduces the probability of the project failure to attain its objectives.
- Some groups prefer working together, therefore they have maintained the communal group gardens instead of sharing the seedlings and plant in respective individual home gardens. This also makes it easier for utilization of the treadle pump since it is less mobile.

Challenges/Problems encountered and solutions:

The following were some challenges;

- ✓ The operational areas had experienced rain pattern beyond normal, which has left the areas with poor road network. The roads were badly damaged during the last rain season making monitoring activities very difficult as some areas were hard-to-reach or impassable.
- ✓ Long distances from the villages to the gardens (water points). This meant the staff to walk long distances, hence time consuming.
- ✓ Insect pests attacking vegetables and animals such as goats, cattle destroyed vegetables

Planned activities for Next quarter:

- Routine monitoring of group gardens and construction of vegetable drying platforms.
- Data collection to update the lists of nutrition support groups.
- Share updates with all the key Agriculture Extension Officers involved about the treadle pump project progress and the expectations from all key stakeholders.

Recommendations:

- Now that the season was different with a lot of rains, there is need to continue encouraging groups with excess seedlings to the Nutrition support groups that were not initially considered for the treadle pump project due to inadequate access to water at the time as this would possibly strengthen those groups and motivate group members as well.
- Agriculture extension staff to intensify the monitoring of the groups. Close supervision of the NSGLs and provision of timely advice to the groups especially on pests and diseases.

4. Photos



Photo 1: Garden for Twatotela and Idzanimuone groups Madzaela



Photo 2: Part of the garden for Khamalidyesa and Mwachedwa NSGs Mkumbudzi



Photo 3: Group garden for Tipunzile and Dzitandizeni NSG at Sinalo



Photo 4: Homestead garden for Veronica Phiri, a group member of Chisomo NSG at Tafelansoni



Photo 5: Beans crop for Tilimbike and Tigwilizane NSGs Madzaela



Photo 6: Constructing of a raised platform for vegetable/food drying using greenhouse plastics at Tafelansoni



Photo 7: Cutting of greenhouse plastics for vegetable/food drying



Photo 8: Covering the platform with greenhouse plastic



Photo 9: Displaying food after cooking demos at Tafelansoni



Photo 10: Washed away bridge making some areas hard to reach