



## Dry Season Gardening: End of Year 3 May 2019



### **Aim:**

ATE's Dry Season Gardening programme supports farmers in Lawra Municipal to increase crop production, improve food security and household nutrition during the long dry season, and increase the potential for income generation all year round. The dry season is the leanest time of the year (November – May) when there is no rain, water sources dry up and the majority of the population (83%) who are reliant on subsistence farming struggle to eat or generate income. A 2010 UNHCR report found that during the dry season families in Lawra eat on average 7 times a week. However, in 2016 during data collection in the community of Gombile in Lawra Municipal, ATE found that families eat on average just four times a week during the dry season.

### **Background:**

ATE started supporting Dry Season Gardeners in November 2016, beginning with two individual farmers and two community farms for a six month pilot programme. This was extended to include an additional individual farmer in 2017. To support farmers ATE provides important farming equipment, business training and development seminars, and twice monthly monitoring visits. This supports traditionally subsistence farmers to boost their crop yields, provide an opportunity for year round income, while simultaneously improving household nutrition during the 5-month dry season.



**This is a map of Lawra Municipal.** The location of each farming group is circled. The blue indicates the individual farmers on the banks of the Black Volta River, and the two pink circles indicate the two community farming groups based in the rural communities of Lissa and Baazing.

The three individual farmers are all situated on the banks of the Black Volta River in Amburi, Lawra Municipal.<sup>1</sup> This river runs from Burkina Faso along the length of Ghana and Côte d'Ivoire to the coast. During the dry season, although the river reduces in volume it is still vast and provides ample water for the farmers to support their gardens. By comparison, the two community farming groups are situated in the very rural communities of Baazing and Lissa. They are both on the eastern edge of Lawra Municipal and considerable distances from the Black Volta River. To feed their farms they rely first on river tributaries, and when these dry up they rely on self-made wells. The community groups have suffered from the increasing effects of climate change, finding that their water supplies are insufficient and are exhausted quickly as the dry season goes on. In the three years that we have run this programme there has always been a marked difference in crop yield and profitability between the river based farmers and the community groups but this year it has been particularly pronounced.

<sup>1</sup> Unfortunately, Culture was unable to be interviewed at the end of the Dry Season as he broke his leg in a motorcycle incident a couple of weeks before. His father took over the harvesting of the garden for him during this time. Culture is receiving traditional treatment and we hope he will make a full recovery.

Farmers	
	<p><b>Moses (R) and Culture (L)</b>  <b>pictured together with their</b>  <b>children</b>  Amburi, Lawra Municipal</p>
	<p><b>Raymond pictured during</b>  <b>training with ATE consultant,</b>  <b>Mavis</b>  Amburi, Lawra Municipal</p>
	<p><b>Baazing Community Group</b>  Baazing, Lawra Municipal</p>
	<p><b>Lissa Community Group</b>  Lissa, Lawra Municipal</p>

### **The successes:**

#### **Increased access to vegetables**

Each farm was successful in growing a variety of crops to feed themselves and their families. This is one of the key objectives of the programme. We know that many families in Lawra Municipal suffer chronic food shortages that can have a serious and chronic impact on their health, particularly for the young, old, pregnant and infirm. Farmers reported again this season that the increased access to vegetables during the dry season boosted the nutritional value of their diet and prevented illnesses that had caused them to visit the hospital in previous years.

**‘One of my children used to fall sick easily when I had no garden but now I have a garden the child has not fallen sick again.’ Moses**

During the dry season Lawra Municipal suffers chronic food shortages and the guarantee and availability of vegetables cannot be understated as an important advantage of the Dry Season Gardening programme. The standard diet in Lawra Municipal is heavily dependent on carbohydrates, with few vegetables and even less meat protein, even during the rainy season. This means that regular access to a variety of vegetables is hugely significant to these farmers, their families and the wider communities – particularly so for the rural community groups. Each of the Amburi farmers said they were able to eat three meals a day throughout the dry season and the community farming groups said they were able to eat two meals a day. Compared with evidence that some communities eat just four meals a week during the dry season<sup>2</sup>, this is an impressive indication of the importance of supporting farming in the dry season.

**‘Our diet has changed completely because now we grow vegetables ourselves. Whether you have money or not, once you are a member [of the community farming group] you will get some vegetables to eat.’ Baazing**

#### **Increased income generation**

The community farms have struggled to move beyond subsistence farming this season due to the water crisis (See Challenges), whereas the farmers in Amburi have continued to make impressive profits. Moses, Culture and Raymond grew their profits by 22%, 125% and 144% respectively from the previous year.

Raymond’s success in his garden this year has been terrific. His average monthly profit of 1123 GHS is almost double that of his fellow Amburi farmers. This year, Raymond is saving to buy a motorised tricycle with a flat bed. Although the farms in Amburi are only a twenty minutes drive from the centre of town, most of the journey is off road. Raymond’s new purchase will support his farming during the dry season by saving time and energy transporting equipment, manure, etc. to his garden, and transporting his produce back into town. Dry Season Gardening is intensive labouring and this new purchase will allow Raymond to dedicate more time to working on his garden rather than travelling. Raymond can also use it to support his carpentry business during the remainder of the year. Raymond<sup>3</sup> is using his Dry Season Garden to creating a sustainable life for his family, with the economic

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<sup>2</sup> Baseline data collected at Gombele Junior high School in November 2016 before the introduction of ATE’s school feeding programme, EducATE

<sup>3</sup> ...and his wife, Theresa, who runs a successful business as a seamstress also supported by ATE!

freedom to send his children to school, support his family when they are sick and provide a safe, secure home environment.

**Table 1 Profits per year (NB. average profits are calculated over a four month period, to reflect the harvesting period)**

Farmer	Average monthly profit		
	2017	2018	2019
Lissa	100	280	69
Baazing	320	383	200
Moses	600	625	760
Culture	100	295	663
Raymond	n/a	460	1123
Farmer		% increase 17-18	% increase 18-19
Lissa		64	-75%
Baazing		16	-48%
Moses		4	22%
Culture		77	125%
Raymond	n/a		144%

Moses has been a consistently successful farmer. He earned an average monthly profit of 760 GHS. Moses is using these profits to save for a new family home. Currently, Moses lives in a traditional-style mud house and Moses is saving to build a home out of bricks.

**‘We are most proud of the vegetables we grow because we feed ourselves with some of the vegetables which is very good to our health.’ Baazing**

Culture earned an average monthly profit of 663 GHS this year. In previous years he has struggled with set backs such as fires (and even Hippopotamus raids). This has caused significant challenges in generating a similar income to Moses (Moses and Culture work side by side, often sharing costs of fertiliser and sharing rides to/from the gardens). However, this year we are pleased that Culture has taken the necessary action to protect against fires, such as fire belts and importantly, the fencing granted to each farmer by ATE.

Sturdy, metal fencing (which can be rolled up and taken away at the end of the dry season) is prohibitively expensive in the Upper West Region of Ghana. Before working with ATE, farmers used dried grass and branches to demarcate their gardens. When bush fires were set they would quickly spread through these makeshift fences and devastate the crops. The makeshift fences are also insufficient as a barrier to roaming and hungry, grazing cattle. During the dry season, the lack of available grasses and feed for cattle means that farmers have no choice but to let their cattle roam freely in the hope that they will source enough food themselves by roaming large distances. Of course, a luscious dry season garden is an attractive sight to a herd of hungry cattle. Several of our farmers have lost precious crops this way in previous years. We are pleased that this is no longer the case thanks to the equipment grants provided by ATE.

Each year we are finding that the equipment requested by the farmers according to their needs is enabling farmers to get more from their farms while exerting less effort. In addition to the fencing materials, the most highly prized item is the motorised water pump. This saves a huge amount of effort when watering the gardens. Although the farmers in Amburi have excellent access to water, their gardens, which are ca.1 acre in size, were previously

being watered by laboriously carrying buckets to and from the river. Now time and energy is saved which has allowed more time to be spent on weeding and using pesticide, improving the crop yield.

Baazing made an average monthly profit of just 200GHS this year, almost half that of the year before. However, the group persevered and identified a gap in the market; In addition to attending local markets (which take place every 6 days), the group also started taking produce to the local church so that church attendees can buy the crops after the Sunday service.

Lissa made an average monthly profit of just 69 GHS this year.

### **The Challenges:**

#### **The water crisis**

The biggest challenge encountered by the two community farming groups in Lissa and Baazing was water availability. The tributaries previously used to feed their gardens dried up almost two months earlier than the previous year and the self-made wells were insufficient to feed the gardens. Unfortunately this meant the groups were unable to move beyond subsistence farms this season. It also caused both groups to drop in size because there was simply not enough work that could be done with the water available.

**‘Water is our greatest challenge. The dam easily dries up in February.’ Baazing**



ATE has asked each group to think seriously about how this problem can be resolved. At the beginning of the dry season in 2018, we held a seminar on water conserving planting techniques and were disheartened to find that only Lissa attempted this technique during the farming. The method uses plastic bottle<sup>4</sup> to funnel water deep into the roots, reducing water wastage and encouraging the plants to root deep into the soil. Unfortunately, when Lissa practised the technique, the plastic bottles were not planted deep enough to be successful and the technique was not practised again. It is recommended that the method is included in the next training workshop and that the Dry Season Gardening Project Assistant

<sup>4</sup> [www.ateghana.org/finally-a-good-use-for-an-old-plastic-bottle/](http://www.ateghana.org/finally-a-good-use-for-an-old-plastic-bottle/)

is fully briefed, because both the Lissa and the Baazing community groups expressed a wish to re-try the method next year.

**‘We hope to improve on the use of plastic bottles which retain water beneath the plants.’ Baazing**

Due to the water crisis, Lissa and Baazing saw their profits drop by 75% and 48% respectively from one season to the next. With the increasing effects of climate change being felt in these remote areas and without a sufficient plan to improve the situation it is difficult to know how best to support these farmers in the future. Each year Baazing and Lissa have expressed their desire to expand their gardens into the surrounding lands available to them. This year both Lissa and Baazing expanded their farm to try and increase the variety of crops they grow. Unfortunately, due to the severe challenges experienced with water it is likely this led to a reduced crop yield even when water was still available. ATE’s Project Assistant had warned the farmers against expanding until a solution to the water crisis had been found.

**‘We expanded our garden this year but it did not help us because of the water problem.’ Lissa**

The community group in Baazing have discussed using their savings from the farms to start bee keeping or cashew planting. Even during the wet season, opportunities for income generation are few in these rural communities. Previously, the members of the Baazing group made money by shelling groundnuts. Unfortunately, with the arrival of a groundnut shelling factory in a neighbouring community, they have been undercut and have lost that stream of income.

Both community groups also complained that they were not able to eat as well this year as they had in the previous year, but still maintained the access to vegetables year round had improved their diet and reduced hospital visits. Although profits made were much reduced on the previous season it was still possible for the farmers to invest in their children’s education and even buy special items such as clothes and meat for special occasions.

**Variability in crop prices**

The challenges experienced by the farmers in Amburi were not as damaging and each enjoyed a successful harvest. The farmers all complained about the lower price of peppers compared with the previous year. The peppers are a more water intensive crop, which is easy for the Amburi farmers to grow but a big challenge for the community farmers. Although peppers saw a fall in price this season, they are still the most popular crop according to the farmers. Community farms grow short harvest period vegetables for regular profits whereas Amburi farmers grow longer harvesting crops (eg peppers) as they can rely on profits generated throughout rest of the year to tide them over and wait for the big pay off from their large yields of cash crops.

**Location and relocation**

Culture and Moses (who farm their lots adjacent to each other) both relocated their farms this year due to a change of mind with the landowner. Both farmers complained that this caused a delay in starting their garden. Clearing the land is a lengthy and arduous task, which delayed sowing seeds, which in turn delayed the harvest. For this reason, Moses and Culture did not start making profits on their farms until April, compared to January/February the previous year. Raymond started generating profit in February this year but also

complained of a set back in starting because his garden is located in a waterlogged zone of the river. During the wet season, the river expands dramatically, covering trees and growing in width by at least double. The Amburi farmers position their gardens as close to the waters edge as possible. Unfortunately, Raymond had to wait longer than anticipated for the water line to recede and for him to start work. Raymond is now considering relocating his garden to a different stretch of the river in order to avoid this next year.

**Recommendations:**

- Start farming earlier
- Hold Dry Season Gardening workshop earlier
- Include food consumed on monitoring forms
- Select new, river adjacent farmers to support with equipment grants
- Continue to invite existing farmers to BizATE workshops
- Visit the Farmer-Managed Natural Re-generation demonstration site in Kalsagri-Pavuu

All farmers have complained of problems caused by starting their farms too late. It is recommended that the initial training workshop, which took place in November this season, be carried out earlier to encourage the farmers to begin work on their farms earlier. The workshops are not a prerequisite to commencing on their dry season farms, however it would be a good opportunity to remind the farmers of the sentiments from the previous season to enable to make the most from these learnings.

It is not recommended that any of the existing farms are granted large equipment items this year. After three years of ATE grants, the equipment requests have built on the previous years. The farms in Amburi are generating considerable profits and re-investment into the development of the gardens should be encouraged, which would make them truly sustainable. Unfortunately, after three years of equipment grants the worsening climatic conditions in Lissa and Baazing are making a successful Dry Season Garden untenable within ATE realms of possible support.

There has been community talk of a 'one dam for one village' policy, supposedly introduced in Burkina Faso with promises that it will be implemented in Ghana. If this policy were to come to fruition it could solve the water crisis for Lissa, Baazing and countless other rural Upper West Region communities. It is recommended that ATE support both communities with small grants items such as seeds, replacing spoiled buckets/pipes, etc, as well as monitoring for the initial Dry Season period where they are able to produce crops surplus to requirements. It is also recommended that alternatives income generation solution, such as the cashew nuts or bee keeping, be considered. Both communities are incredibly vulnerable economically and it would be difficult as an organisation to leave the communities without a viable alternative.

During twice monthly monitoring visits, it is currently only investment and profit, challenges and successes that are captured. It is recommended that the amount of food produced and consumed for the farmers, their families and their wider community is also captured. This is an important objective of the programme and we currently rely on anecdotal evidence to capture the sustenance value of each garden.

It is also recommended that ATE staff visit the Farmer-Managed Natural Re-generation (FMNR) demonstration site in Kalsagri-Pavuu.<sup>5</sup> It was an initiative started in Niger, which led to the reforestation, improved crop yields and enhanced soil nutritional, benefitting those who lived off the land. Although it is not certain what type or quality of information or support they can share, it seems like a valuable resource to have in such close proximity.

**‘When we were not having a garden, children under 5 years and pregnant women were often sent to hospitals for anaemia. But when we got a garden the vegetables we eat has shot up our haemoglobin levels.’ Baazing**



### **Conclusion**

Support for communities during the long dry season remains vital, even critical. The effects of climate change are worsening and are impacting the most vulnerable in society now. While always achieving a lower crop yield than their counterparts in Amburi, the community farming groups Lissa and Baazing were crippled this year by the water crisis. Although it is not feasible to support farming groups that have no chance of being sustainable, in such remote communities a viable alternative should be explored. For example, supporting one of their previously expressed business ventures like bee keeping or cashew but growing.

On the other end of the sustainability spectrum are the farmers in Amburi. They are able to harvest good crop yields, focusing on cash crops that are earning them steadily increasing profits which are being saved and used to better the lives of themselves and their families. After several years of receiving grants for big item materials, such as the important but expensive fencing wire, these farmers are ready to plan for, and subsume, the cost of future improvements or expansion they wish to undertake. However, ongoing training in business skills is still considered an important area to be developed as part of ATE’s BizATE training programme. With 83% of the population reliant on subsistence farming<sup>6</sup> their contribution

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<sup>5</sup> <http://www.ghananewsagency.org/features/lawra-nandom-communities-escape-threat-of-degradation-fmnr-to-the-rescue-132405>

<sup>6</sup> UNHDP report 2010

will be a valuable tool in our understanding on how to better support more farmers to move from subsistence to profit making.

Looking forward to the next dry season focus will be placed on identifying community farming groups and individuals who can set their garden next to the river. Some groups in Dowine have already been identified which is promising.