AGRICULTURAL SURVEY FOR SEEDS OF HOPE INTERNATIONAL PARTNERSHIPS

CONDUCTED BY PETER REIMER

AREA: Ndola and Kasempa, Zambia
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Bananas at Lifespring Farm

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Introduction

My name is Peter Reimer and I was asked by Kirk Shauer, director of Seeds of Hope International Partnerships (SHIP) to go to Zambia to do an Agricultural Survey for them. They are working with the churches there to bring safer water and develop resources to relieve the grinding poverty. I arrived March 15, 2006 and left March 30 for a few days at Victoria Falls before returning home. I visited many farms and organizations in the Ndola area and spent several days in Kasempa. Getting to understand the culture in two weeks was quite a challenge. I found the people very charming and Zambia as a whole a welcoming place. While there are big commercial farms I would have liked to visit, the ones we concentrated on were the small operations that struggle to feed the poor communities. There are many missions and organizations working there already so my challenge was to find what I could do to help their agricultural production using my skills as a life long farmer in California. God has blessed me in my occupation and I want to honor Him by serving Him with the talents He gave to me. One of the greatest times is when we can worship with believers from a different land. I hope this report will be of benefit to the Zambian believers and those that have yet to find our Lord.

Kenya Airways, Lusaka Int. Airport, Victoria Falls, "Duh?" Peter Ravensdale

Ndola Farms

I visited a number of farms around Ndola, on the northeast side of Mapalo is the Vineyard Church Farm, Peter Ravensdale's Farm that was largely experimental crops and the Banana Partners farms nearby. I visited the Mapalo Church's Swamp Farm just to the East of Ndola. I visited Lifespring Farm owned by Derry and Michael Burn located to the southwest of Ndola.

Climate. Ndola sits at about 4100ft elevation and 1000 miles south of the Equator. This location is right in the tropics but the elevation keeps the temperature and humidity mild. You really couldn't ask for a balmier place to live. I noticed how things were built and asked several people about the wind. Apparently it never blows hard and thunderstorm wind (about 20mph max) is about it. The season is more known for the wet and dry periods. The rains start in November or December and continue through March. The coolest time is June and July with a slight chance of a frost in some areas. Most crops are planted at the first rains and take advantage of the rain for irrigation. The long dry season often leaves some without sufficient food. Irrigation would be very beneficial during this period pulling water from wells or creeks and rivers. Rain and accompanying humidity can be very detrimental to some crops and raising them in the dry season with irrigation could open the area to new crops.

Soils. The soils at all these farms with the exception of the swamp were located on gentle slopes. The soil was well drained and light and made them good for nearly any crop. I noticed that they dried out quickly after a rain and did not retain moisture well. This would be typical of any soils in a high rain environment. When the dry season arrives the plants will soon dry up with out irrigation. I think that this type soil would be very productive with irrigation but would need frequent applications. Liming seems to be a practice here to offset the acidic nature of the soil. The swamp property is a very different soil type and is very high in organic material. Abandoned to grasses and flooded in the wet season they start reclamation as soon as the water recedes. The farmers make high beds and deep furrows to drain off the water. The high water table sustained by the nearby creek irrigates the crops subterranean. They may need supplemental water from the creek if it is a particularly dry year.

Crops. The soil and climate here is very versatile and can grow nearly anything you want to try. Peter Ravensdale's experimental plots had many things growing and all seemed to thrive. After discussions with several people in the area I did find that perennials that require dormancy did very poorly. Some examples of these are apples, peaches and plums etc. Maize is by far the most planted and often the sorriest looking crop. It is over planted because it is the basis of their diet and stores well. Bananas are an up coming crop and do very well but as a perishable can get overproduced at certain times. All vegetable crops look great but seem to suffer fungus infections because of the rains. This would be a fun place to try new things such as Lifespring is doing with Jatophra for making bio diesel fuel. Others include Loofa, Basil, Artenisian (a Malaria herb), Hot Chili Peppers, Elephant peppers(Tabasco), not to mention pigs, chicken and fish(Tilapia).

Seeds, Fertilization and Pest Control. Most of the crops I saw were suffering from some ailment. Driving by commercial farms I noticed much healthier crops so it is the practice not environment. Good seed cost money so they often start with poor seed. This was very apparent in beans where I could identify many varieties all mixed up and cross bred. How can you tailor a practice when you have such diverse crop demands? Coming out of the rainy season I observed a lot of fungus damage especially in the susceptible garden vegetable crops. They usually just said the crop was finished -which I guess it was (but didn't need to be)! Fertilization was popular as small bags were being sold many places and I could tell the affects of it -or not. Urea (46%N) seemed the preferred type fertilizer sometimes fortified with other minerals.

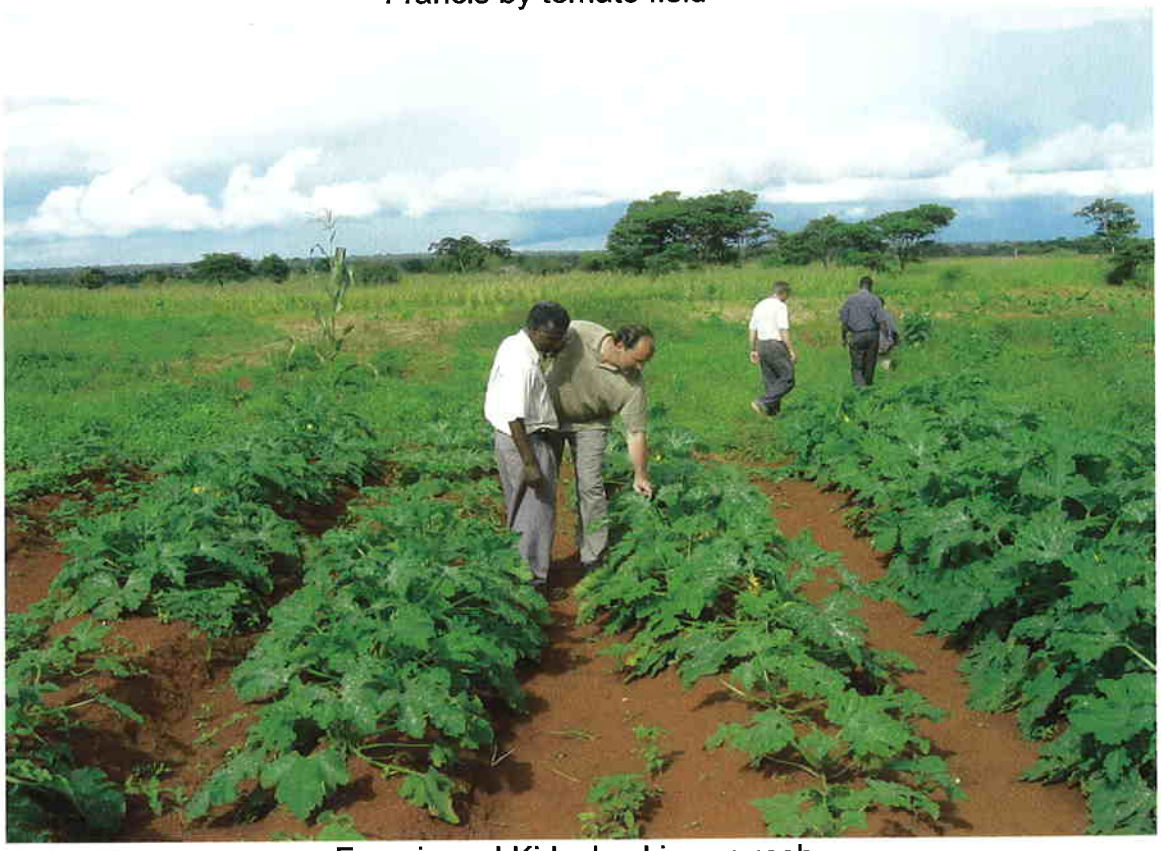
The Farmers. The Zambian farmers I met were very friendly and seemed genuinely interested in learning more technology. They all seemed to have a basic understanding of crop rotation, seed quality and fertilization. They preferred using malathion insecticide which is a broad based insecticide usually getting the target pest but usually getting beneficials too. Questioning them they understood selective insecticides but you need a better knowledge of the plant environment to successfully implement this technology. Their soil and cultivation knowledge was appropriate to the soil and area. Overall I think they are doing a good job with what they have. They could learn more but need to move to another level of agricultural technology but that will be addressed elsewhere in this report.

Location. The proximity of the Ndola farms to the city is critical. Since transportation is scarce, hand carrying goods to market is essential. The Mapalo farms are adjacent to town where the goods are consumed. They seem to have an understanding about whose fields are whose because they are generally unsecured They are fortunate to have such good land and water so close to them or they would surely suffer much more malnutrition. Of course larger farms can access trucks and distance actually improves the security of the fields. Even though water is nearby, irrigation is rarely practiced except by bucket.

Economic Environment. Demand for goods produced is quite good because of the proximity to the population centers. The problem is that they need to produce year around and not just in the wet season. This is where the problems begin to surface as there is not very much investment in these small farms beyond sweat. These things will be addressed further in other sections of this report.

Ndola Farm

Francis by tomato field



Francis and Kirk checking squash

Kasempa Farm

Climate. The climate in Kasempa is very much like that in Ndola. It also has a similar altitude of about 4100 ft.

Soils. I think that the plains soils are a bit heavier than Ndola region. With out analysis, I think they are more fertile and hold water better. I think that the plant life was denser and had better color. The farm I visited was south of Kasempa about 15Km and was located in a swamp. Because of four years of light precipitation they planted into the rainy season. When I visited, after a heavy rain season the farm was drowned out. This soil was very black and heavy in organic material and unforgiving when wet.

Crops. The predominate crop in Kasempa is Maize because that is "what's for dinner" (and lunch) and stores well into the dry season. The Njenga Farm also was trying tomatoes, Irish potatoes, sweet potatoes, pumpkin, onion and cassava, a plant that grows tubers and greens. They want to try beans. Fungus had taken its toll on these crops because of excessive rain. The farm has a creek that flows year around so has potential for irrigation and dry season crops.

Seeds and Pest Control. They were trying many different crops to see what works here. They had a budget for inputs using from the Monterey Fund. They were feeling their way and seemed to be making progress. Because of the above normal rainfall many crops were savaged by fungus especially the tomatoes and potatoes. This is something they need to deal with especially if they have a budget and need more reliable production.

The Farmers. The project was run by Kasempa pastor John Chilengi and his associate Shiyupa. They had onsite help but I cannot remember their names. As usual all tillage was done by hoe. The farm consisted of 3 hectares.

Location. The Kasempa farm was located about 15 Km southwest in Njenga along a year around creek. The farm was in a swampy area and flooded too easy. I think It has potential for a dry season farm.

Economic Environment. While the farm is quite a ways from Kasempa it can be reached by truck just fine. There seems to be a market in Kasempa for vegetables and definitely in Solwezi 200Km to the north where there is new mining activity that provides a cash market. The potential would be to use some land beyond the swamp in the wet season and use the swamp more in the dry season with irrigation. Irrigation would work any where it could be successfully implemented.