

Half a World Away:
Experiences in the Ethiopian Highlands

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Dairy production is one of the most important markets on earth. It, and only it, gives rise to the most nutritious food known to man, milk. Its importance

is tenfold in developing countries. Milk provides both a source of nutrition and income for many families in developing countries. Milk provides growing children with much needed nutrition in the ever important growing stages of their lives and it keeps young adults and adults somewhat nourished. There is no USDA or other administrations to keep tabs on the food industry and make sure that the food is both in good quality and nutritious, so fresh milk is very valuable. Milk also provides a source of income for small-holder dairy farmers. Milk is usually always in demand. With its unmatched value of nutrition, it is a precious commodity.

My name is Shawn Matthew Thomas. I am originally from Des Moines, IA. I was attending Saydel High School when I joined the World Food Prize Youth Institute in November of 2001. I must admit, I had no intention of involving myself with agriculture. The only reason I joined was because I wanted to go into zoology. I looked at the international internships only as a free trip to somewhere else in the world. I grew up in the suburbs of Des Moines and the only experience with agriculture that I had ever had was at the State Fair. I knew nothing about agriculture or food security, or lack thereof, so most of my paper was a learning experience for me. I had always loved animals and was even going to major in zoology. Africa, having some of the most interesting animals on earth, caught my attention.

I found out in March of 2002 that I was going to spend my summer in Addis Ababa, Ethiopia (the national capital) with the International Livestock

Research Institute (ILRI). In 1995 the parent organization of two separate research centers thought to merge them into one. So the Consultative Group on International Agricultural Research (CGIAR) merged the International Laboratory for Research on Animal Diseases (ILRAD), based in Nairobi, Kenya, and the International Livestock Center for Africa (ILCA), based in Addis Ababa, Ethiopia into what we now know them as. ILRI's goal is to improve the welfare of people in developing countries by enhancing the contributions livestock make to smallholder farming. ILRI is helping to solve the severe problems that holding down animal agriculture, sustainable food production and economic development in the tropics.

I got to Addis Ababa at 1:30 in the morning. The first thing I did was sleep. I was suffering from jet-lag. The next morning I met my advisor, Dr. Salvador Fernandez Rivera. He asked me what I wanted to do for my project and I told him that I really had no preference as to how I spent the next two months. All I wanted to do was to help out and do something fun, educational, and worthwhile. He responded by asking me what I knew about dairy in the tropics, but more specifically, in the Ethiopian highlands. Since I really didn't know a great deal about the subject, my first assignment was to do research at the library to familiarize my self with dairy production.

Dairy is, as I've said before, one of the most important markets on Earth. As I have said, I was stationed in Addis Ababa, Ethiopia. That being the capital of the country, there was not a lot of agriculture going on there. There was some,

granted, but not as much as in Debre Zeit, Ethiopia. Debre Zeit is a city in Ethiopia that is about 50 km southeast of the capital. It is also the location of an ILRI research station. After I had learned about dairy in the highlands I was sent to Debre Zeit under the care of Dr. Azaga Tegegne, the station manager.

My project was to take an in-depth survey of a smallholder dairy cooperative covering several issues. The first part of my survey dealt specifically with the member, covering topics including: name and cooperative number of the member, sex, age, level of education, number of dependants belonging to the member, number of heads of cattle, number of heads of dairy cows, woreda of the member (similar to districts of a city), distance from the dairy farm to the collection center, and station number (1 through 7). I also took the member history of the dairy cooperative obtaining the amount of members, divided into male and female. Then next part of my survey was a 15 day survey covering the milk collection itself dealing with topics including: date and time (morning or night) of milk collection, the deliverer's relation to the member (if not the member itself), deliverer's age, sex, and level of education. The survey also covered the amount of milk brought and the amount of Birr (the Ethiopian form of currency) earned for that milk.

ILRI donated a computer to the dairy cooperative so my project not only obtained a lot of information, but it also established a set of records for the dairy cooperative. ILRI wants to help the dairy cooperative establish itself and prosper so they wanted me to conduct this survey to see exactly where the cooperative is in

terms of milk production per member, growth, and all the other aspects I had been asked to investigate.

The goal of my project was to obtain all of the information that was needed by ILRI. I was then to compile it into graphs representing the numbers. I also had to, as I said before, set up a data base system for the cooperative that they could easily use and



Me and "Master Yosef" (right) taking information

manipulate, while up until this point the dairy cooperative had kept records on paper that they kept filed away. There is nothing wrong with this, but because of the sheer volume of numbers that they dealt with every single day, they kept only one set of records. The cooperative was just too large and too understaffed to do much more. Literacy was a problem that the cooperative faced. Many could not read or write so they had limited numbers to choose from for help recording.

My advisor from ILRI was Dr. Salvador Fernandez-Rivera. He was originally born in Mexico. In 1987 he received his doctorate in ruminant nutrition from the University of Nebraska-Lincoln. In 1991 he joined ILRI, originally working in Niamey, Niger and coordinated a project on improving crop-livestock systems in semi-arid sub-Saharan Africa and Asia. He currently leads the Livestock Feeds and Nutrition program at ILRI Addis Ababa. When moved to the Debre Zeit Research Station, since Dr. Fernandez was stationed in Addis Ababa, he assigned me to Dr. Azaga Tegegne, the station manager. As a native

Ethiopian he was passionate about his nation and he taught me a great deal about it.

All of the members at the dairy cooperative spoke Amharic, the official national language of Ethiopia. For many, most in fact, it was the only language that they spoke. Few of the members are bilingual and an even smaller percent speak English. The task that I had before me would have been next to impossible without the help of my advisor at the dairy cooperative, Yosef Desta. “Master Yosef,” as he was called by everyone at the cooperative because he was a high level official on the Board of Directors, is a retired veteran of the Ethiopian Air Force. He also had a high school diploma and spoke excellent English.

The Ada’a Liben Woreda Dairy and Dairy Products Marketing Cooperative came into being in September of 1998. The goals of



The logo of the dairy cooperative. In Amharic: Country cow (left) and international cow (right), objective (horizontal red) and cow (vertical red).

the cooperative are: to increase productivity of dairy cows through proper management intervention and strong health services, to combat the problems of feed shortage and price fluctuation on milk products. The cooperative was originally composed of 34 male members, most of whom were retired Air Force veterans that were looking for an additional source of income aside from their government pension. They buy the milk from the members for 1.70 Birr and then transport it the 50 km to Addis Ababa where the market is.

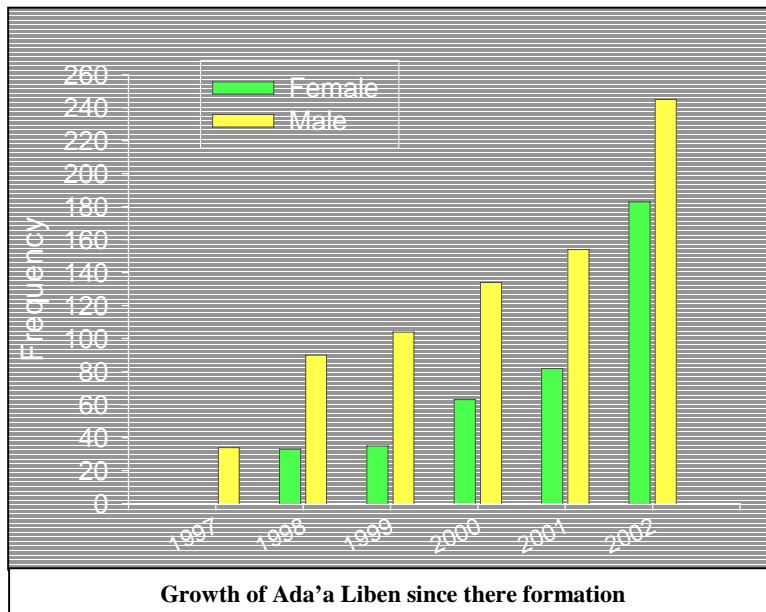
When the cooperative came into existence, they were looking for a market to sell their milk to. Debre Zeit, being a fairly small city, did not have the kind of market, or the size for that matter, that they were looking for. The logical place to look, therefore, was the national capital, Addis Ababa, just an hour's drive away where the market was all but unlimited. The best buyer they found was a company called Mama's, part of Sebeda Agro-Industries. The original agreement was that Mama's would buy all of the milk that the cooperative could produce for 1.90 Birr per liter and that no other buyer, besides individuals coming in for a liter or two. Now, the cooperative had only 34 members so they projected there maximum milk production at about 2,000 L per day, which Mama's said that they would happily accept.



The dairy cooperative has a continual problem that they face. First off, the foremost religion in Ethiopia is Orthodox Christian, a religion that is very devout and dedicated to their beliefs. They perform ritual fastings many times a year; fastings where their members don't eat meat or any meat products including milk, cheese, butter, and so on. That spells disaster for the dairy cooperative. Every year from late February to mid April is the big

fasting period with little ones throughout the year. During these fasting periods the cooperative buys the milk for 1.35 Birr per liter and sells it to Mama's for 1.50 Birr per liter.

As good word spread of a constant source of income with no price



fluctuations and no hidden costs, more and more people wanted to join the cooperative. By the year 2002 the cooperative had a force of more than 420 members, both male and

female. These members brought close to 5,200 liters of milk per day. In normal times Mama's would take all of the milk that the dairy cooperative could muster, all 5,000 liters of it (5,000 because about 200 liters per day was sold to individuals coming in for some fresh milk for their families). Fasting times were different. They would strictly take 2,000 liters a day because there was no longer a market for the milk. That posed a considerable problem for the dairy cooperative. They were left with about 2,500 liters plus a day with no reliable outlet for it. The cooperative did anything that they could to find ways to get rid of it. They processed it into cheese, cream, butter, and so on, but with such meager processing units, they could only do so much. Ultimately a lot had to go back to the animals,

because they couldn't waste any. In the end it is a devastating time for the cooperative. Last year the Ada'a Liben Dairy Cooperative lost in excess of over 25,000 Ethiopian Birr or close to 3,000 U.S. Dollars. That could devastate any small business in the United States, but in a developing country that is nowhere near financially sound, it is overwhelming. That is too much money and the idea is too disturbing for the cooperative, so that brings up a new problem for the dairy cooperative...independence.

The cooperative logically feels too dependant on Mama's and on Sebeda Agro-Industries. They want to be more dependant on themselves, which cannot come without a very important necessity...technology. The cooperative has such inadequate processing facilities that they cannot possibly process the milk and keep the numbers that they currently bring in. To gain independence from Mama's the cooperative would have to acquire their own processing facilities. They would need to a large-scale cream separator, a large-scale butter churn, a large-scale pasteurizer, and a large-scale cheese oven, to bake the kind of cheese that the local market demands. They do not, however, require a truck to transport the milk to Addis Ababa because they have there own truck.

When the dairy cooperative first came about they had no way to transport their milk the 50 km that it took to get it from Debre Zeit to Addis Ababa. They paid for



The Ada'a Liben Dairy Cooperative's transport truck

transportation and it averaged out to about 3000 Birr a day for the two times daily trip. The cooperative never buys with credit because they say that it is too easy to slip into debt and when buying expensive equipment it would be massive amounts of debt. So for three years the cooperative saved money and in 2001 they purchased a truck for over 120,000 Birr or over \$14,000. They make the run two times daily, just as before, transporting about 3000 liters in the morning and about 2000 liters at night. The cooperative was just familiarizing themselves with some new equipment that they had recently acquired when I was there. They had just gotten a 5000 liter storage cooler and their goal was to, instead of make two trips, to only make one trip a day, but, again, the system was still relatively new to the members during the time of my internship.

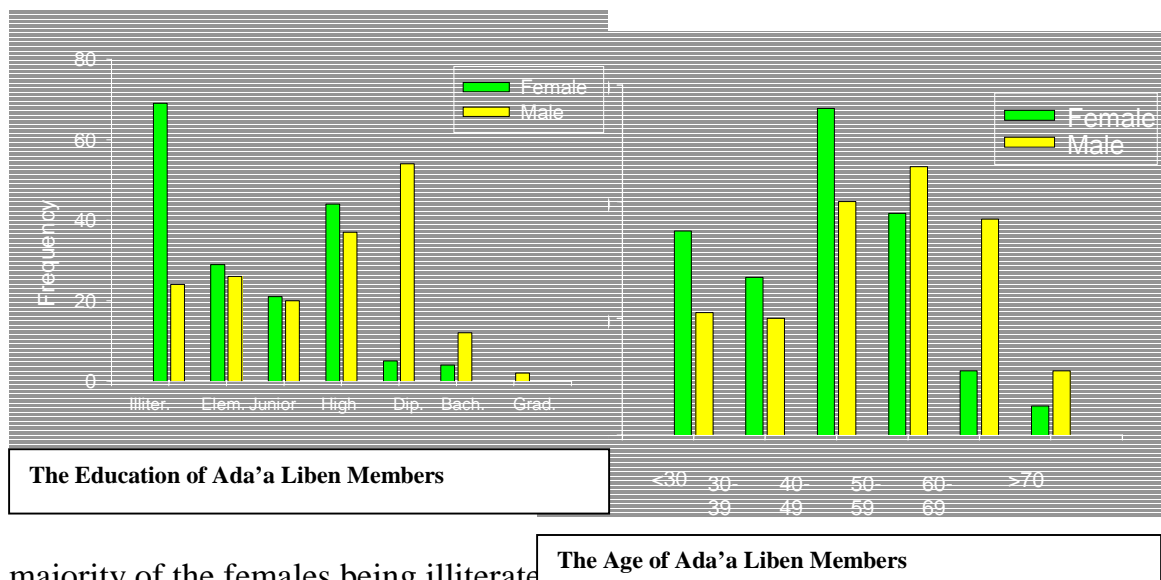
As I said, my project was to do research on the Ada'a Liben Dairy Cooperative. I covered background information on the members and information of the milk delivered. Again, there was a language barrier so for a lot of the time most of the time I was just observing information being taken. There are a few members in the dairy cooperative that speak fluent English so I dealt with those select members. All of the information was taken down in Amharic because it was too much for Yosef to get the answer in Amharic, translate the answer in his mind, and then write down the answer in English. So all of my data was first written in Amharic, by Master Yosef, and then he translated it all into English on a different datasheet. All of the data was then analyzed. It was loaded into the computer and evaluated. The information was then compiled into graphs. The

information was graphed based on sex. All of the information was divided up into the categories by the sex of the member, and most were divided up further.

A lot of the results were as I had predicted, but some were far different.

First off, the age of Ada's Liben members is very diverse. As one can see from the graph, the females of Ada's Liben are the younger of the members, while the majority of the age of Ada's Liben is with the males.

The education of Ada's Liben is very one sided as well, with males having

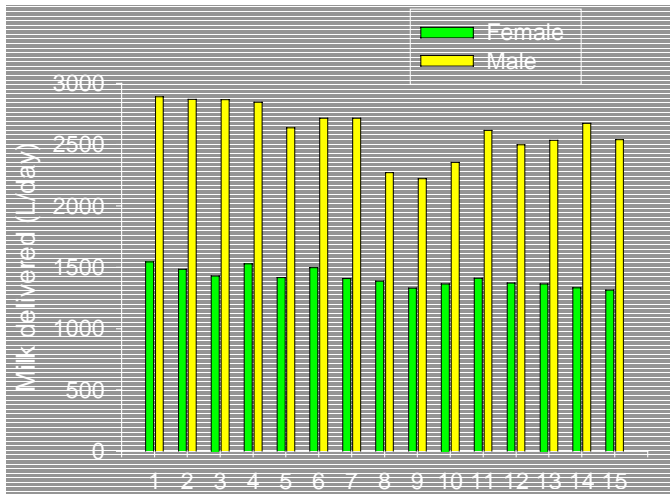


majority of the females being illiterate.

The majority of the males of the dairy cooperative had at least some form of schooling with a good number of them having their high school diploma.

The average number of dependants that the members of the cooperative had was 4-6 dependants to every member. This seems somewhat high for Americans, but it is quite normal for an Ethiopian family.

The average herd size of the Ada'a Liben member was 5 cows. This includes both dairy and traction cows. Also, on average, males have a larger herd than do females.

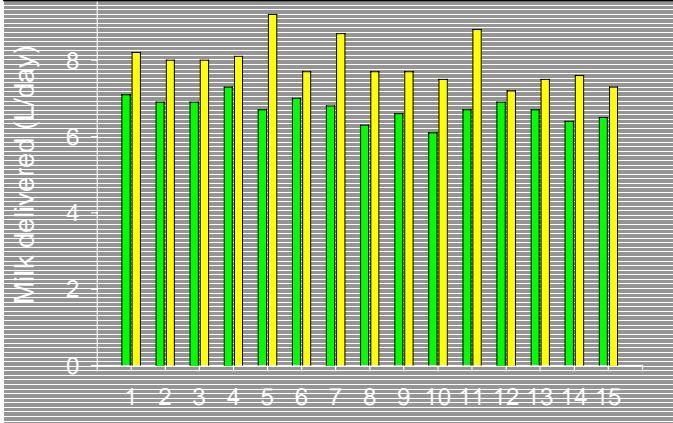


Everyday of my study males brought almost twice as much milk as did females. This graph is for total per day. A more accurate picture can be

Total Milk Delivered Per Day throughout my Study

Average Milk Delivered throughout my Study

acquired when looking at the average milk delivery per male and female, obtained by dividing the total number of milk produced by a sex by the number of members of that sex in the



cooperative. These numbers are mu

Average Milk Delivered throughout my Study

dominant in milk production in this cooperative. There are a few hypotheses that both me and my advisor came up with. First off, by referring to the information about herd size, it is evident that males in Ada'a Liben have larger herds than do females. The only other hypotheses that were came up with is that males have higher yielding cows than females, or that females keep more milk for their

families, but again, these are speculation and further research would need to be done to solidify these hypotheses.

The International Livestock Research Institute and the Ada'a Liben Dairy Cooperative work very closely together. Dr. Tegegne, the Debre Zeit Research Center's station manager and members of the board of directors of the cooperative are close friends. ILRI helped get the cooperative off the ground by donating both time and money. ILRI has hosted educational classes for the members of the cooperative on how to care for their cattle. As I previously stated, they donated the cooperative a both a computer and the time needed to educate the members in how to run it to help in record keeping. ILRI is interested in the cooperative and there success and my research project updated ILRI in how the cooperative is doing. It showed them how they are doing now and how they have grown.

This experience has changed my life in more ways then one. First off, it exposed me to the wonderful world of soccer (football). I wouldn't have watched the World Cup if I wasn't in an environment where people can take days off from work to watch matches. It also gave me some very good friends whom I am still in contact with. I can say that never, until I left it, did I appreciate America more. Going to a land without all of the little perks that America has has really opened my eyes. It showed me what a great country I live in and how lucky I am to live in it. This experience also opened my eyes. It has really taught me that the world is bigger then America. I always knew that, but never really experienced it. I, just like a lot of people, thought that Ethiopia was a country with nothing to offer but

starving children and deserts, was shocked at what I found. I found a country with people full of diversity and the some of the kindest people that I have ever met. I was truly blessed to go on this wonderful journey and thank God that he bestowed this honor upon me.

