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# Coffee crops in the Babati district

A study about the development in Tanzania and the connection to Sweden's consumption



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## ABSTRACT

This essay investigates the development of the cash crop coffee. It gives a historical background of the good and shows how it developed to be one of the most important and traded community in the world. Tanzania's position and how it came to that position in the world market is shown. During a three week field study in the Babati District in 2004, some interviews with coffee farmers were made. These interviews were made with interpreters and were gathered with the help from the LAMP project. The connection to Swedish coffee consumption is also shown. One of the results was that if farmers move on to grow organic coffee they could get a larger profit. There is also an increasing demand after organic coffee in countries as Sweden so LAMP instructs the farmers in Babati to start growing organic coffee. Another result was that the farmers in the Babati district intercropped their coffee with other crops to spread the risks and lower the dependence to the world coffee market.

Key Words: Development theory  
Comparative advantages  
Coffee  
Environment  
Pesticides  
Tanzania  
Aid  
Sweden

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# 1 Introduction

The coffee bean is a legal and addictive crop that has made some people enormously rich and turned others into slaves (Kronbrink, 2006). Behind its advance are devastated rain forests and coffee workers who live under existence minimum (Kronbrink, 2006).

After oil, coffee is arguably the second most important commodity, as it constitutes an important source of foreign income for several developing countries. Coffee like any agricultural product is a cyclical crop. When the supply of coffee is large the world price of coffee falls. Many farmers then go out of business, or they switch from coffee to another crop. Consequently, the world supply of coffee falls and the price rises again (Nassali, 2003). Raw material markets are often example of classic economics. The over production lowers the prices and farmers with poorer conditions risks to be struck out This often concerns farmers with high costs or a bad relation to the average price of crop and production costs (Thánh, 2002).

In this century, coffee has also become one of the most chemically treated food crops in the world. Coffee is often sprayed without regulation with DDT, pesticides, herbicides, and fungicides, some of which have been determined to be hazardous to good health and the environment. This affects the farmers, but also their families, their land, their water, and the consumer (Internet 2).

Developing countries have many urgent needs and objectives, which can be mutually conflicting. Resource use can be competitive. While there is a need for more employment, foreign exchange earnings, national security and other living standards, society also requires a healthy environment and conservation of natural resources. Between the years, 1994 and 1998 the countries in South and Northern America stood for approximately 60 % of the world's production of coffee. During this time Asia's cut was 21 % and Africa's 19 % (Nationalencyklopedin, 2000).

Tanzania's part of the world market in coffee is only 0,9 % which makes it very vulnerable for price fluctuations in the market. Tanzania is a country of paradoxes. On the one hand the economic climate has improved, but on the other hand severe poverty persists. The most vulnerable group is the farmers in areas with poor natural conditions (Nationalencyklopedin, 2000).

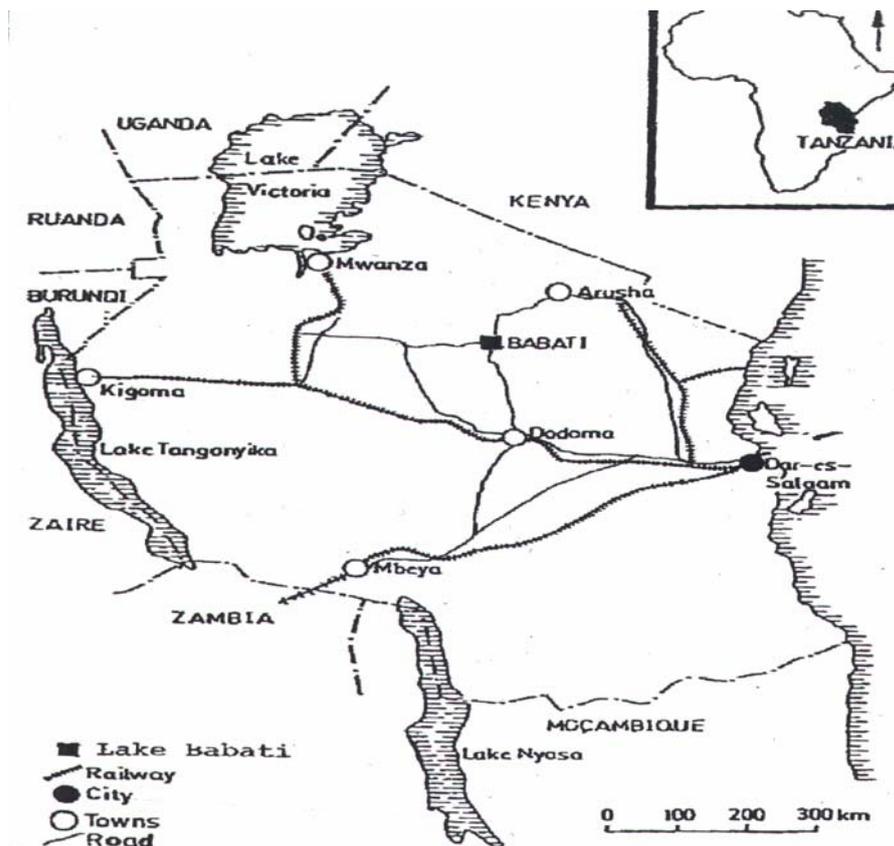


Figure 1: *Tanzanian map with Babati*

Source: Internet 6

Even though only 10 % of Tanzania's surface is cultivated 90 % of the economically active population gets their income from agriculture. Four export crops account for more than 50 % of the total export value, in Tanzania, and their share has increased from 45 % of the export value in 1980. Coffee is Tanzania's major export crop and the production has been almost stable. But at the same time the value of Tanzania's coffee production on the international market, has been almost cut in half (Ewald, 1991). Coffee constituted 31

% of the export from the agricultural sector in 1992. Smallholders mainly produce coffee and most of it is produced in the Kilimanjaro region. Because of fierce competition, the introduction of substitution products, fluctuating prices at the world market and ineffective governmental buyers- and transport organizations, the development for coffee has been negative (Nationalencyclopedia, 2000).

In Tanzania, profit is the major driving force behind the commercial coffee enterprises. In the case of international trade and investment, coffee is a valuable commodity, with high returns and relatively low costs, making it attractive for investors. The government faces a dilemma, choosing between the short-term effects of a decreased export income and the long-term depletion of resources. Often the choice is short-sighted depletion of resources (Charveriat, 2002). In this essay I have analyzed the coffee production in Tanzania from an economical, social and environmental point of view.

## 1.2 Demarcation

Since coffee export is one of Tanzania's major incomes I have chosen this subject to explore and investigate further during my field study in the Babati district. However, it was difficult to get information about one district's coffee production in the country and it is easier to draw conclusions from quantitative data. This is the reason why I have chosen to look at Tanzania's total coffee production and coffee export in my literature studies. I think it is necessary to demarcate in which area this field study were held. I have only studied and interviewed people in the Babati district in Tanzania. Since the district is divided in different villages and sub-villages it is interesting to show this with a map over the district. This helps also to explain the way that the coffee needs to be transported to Moshi in the northern part of Tanzania. During my field study the main question of issue was to find out if the coffee farmers felt that they depended on fluctuations in the world market or if they had any possibilities to influence the market. The map below shows the different villages and the red marked villages are the one I visited during the field study in the Babati district.

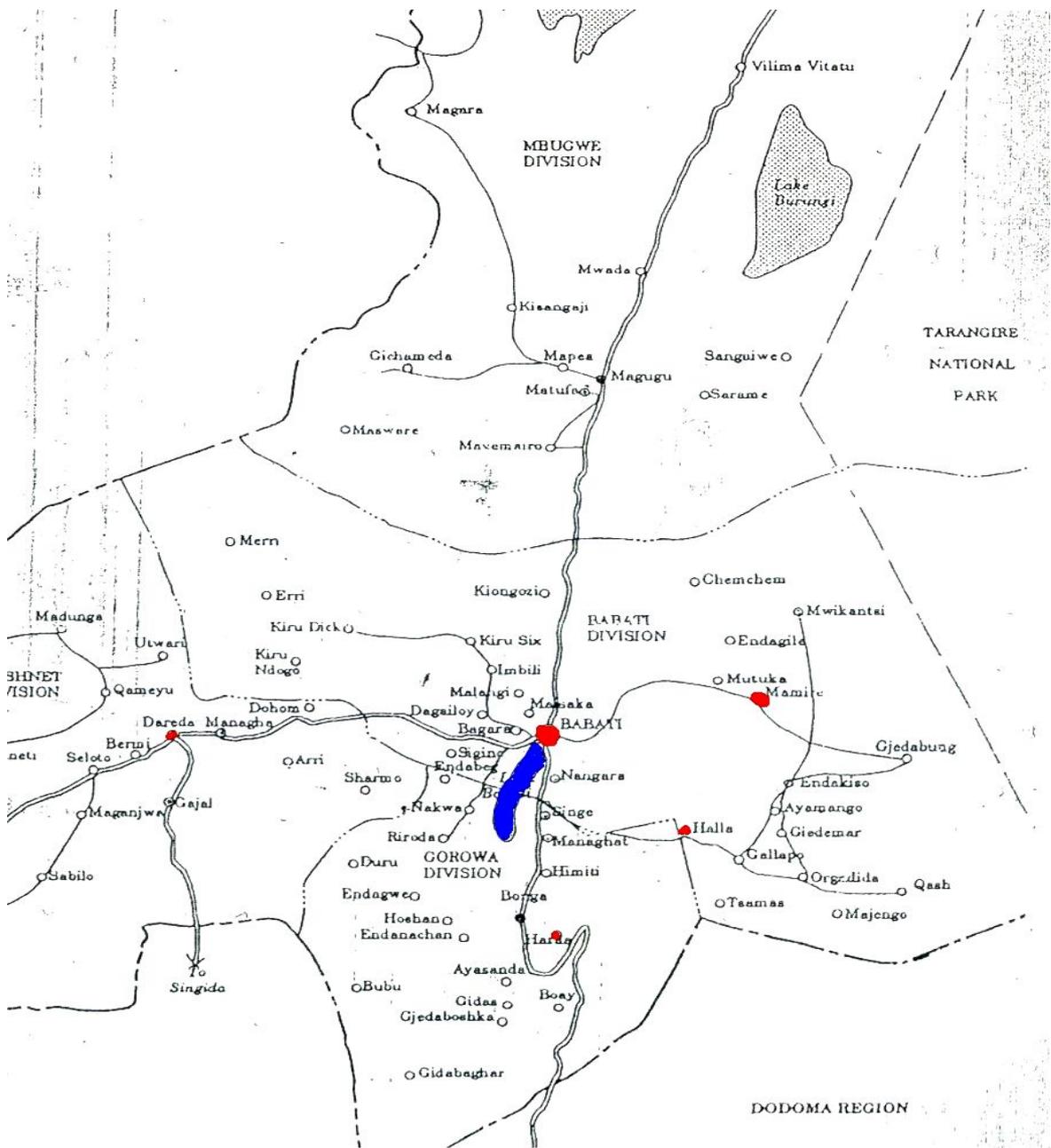


Figure 2: Babati district

Work up: Megha Huber  
 Scale 1:450 000

### 1.3 Purpose and questions

My purpose is to look at economical, social and environmental impacts of coffee cultivation at household and national levels in Tanzania. My intention is also to look at the connection between Sweden and Tanzania's coffee production.

This aim of research leads further to the following questions:

- Which are the dominating interests behind the coffee production and what are their effects?
- To what extent is pesticides used as an instrument to achieve an intensified production and are there any alternatives?

### 1.4 Method and sources

This section contains the methods I have combined and shows how and what literature I have chosen in the essay.

#### 1.4.1 Information search and triangulation with grounded theory

Economic development yields many gains but it also often leads to degradation of resources and environmental conditions. It is important for any development project to acquire information on the impacts of resource use on the environment. It is a hard task to obtain a viable valuation and I have therefore chosen to describe the development of coffee cultivation, and analyze positive- and negative impacts of coffee cultivation from a qualitative point of view. The qualitative point of view is not so formalizing in a generalizing way (like the quantitative). It has more of an understandable purpose (Holme & Solvang, 1996). Before my visit in Babati I started collecting information about coffee cultivation in order to get a theoretical understanding of the problems related to coffee production. I collected most of the information on the Internet. I found out where I could get more literature via data lists on the Internet and visited the African institute in Uppsala thanks to the Internet. I am aware of the importance in a qualitative approach

that the data is reliable and valid and that there is a risk that some of the information is not scientific but I chose articles which I found reliable. The data I collected were both primary and secondary and I think they are both are reliable and valid. According to Sayer, a researcher must be careful with expectations on results of their study because expectations can lead the researcher in a certain direction (Sayer 1992). I have tried to use Grounded theory that is more a method than a theory which is the reason why it is in this section. Grounded theory means that you as a researcher do not have a theory as starting point for the research, instead it is developed side by side with the drive of data, and these data becomes the starting point for the theory education (Sandberg, 2002). This makes it possible to have few preconceived notions within the matter. Sayer shows the relationship between theory and observation. Observation is not theory neutral but neither not theory connected. What shows to be most appropriate is the theory that we should use ourselves of. Sayer explains the use of method as a way to meet the world in order to understand it better. The method is a way to explain and to understand. How we carry out research and which analyses we implements is a practical question where we should take into consideration the different splitters in Sayer's triangle. The triangle consists of object, the study's aim and method. Grounded theory advocates a permanent progress and retrogression between the collection of data and analysis, and empery and theory. This way makes it possible to make the conclusion that it exists standards and causal connections of unexpected nature. Relationships between people or phenomena that are temporary or conditioned must have an empirical question that can only be responded to with observation. There exists no forcing for an item to behave in a certain way only because it cans (Sayer, 1992). I have juggled back and forwards with my theory in cycles in a hermeneutic way where I in connection with increased literature studies got (an) increased understanding for the problem and in this way could discern the main thread in the essay. One way to make a study more reliable is to use different kind of methods to investigate one occurrence. This makes it possible to get several points of view of the object studied. When two or more methods are used to reach the same purpose it is called triangulation (Björklund, 2004). I have used a combination of observation and interviews. Observation is often a time demanding method but can in certain situations give a more objective information (Björklund, 2004; 71).

### 1.4.2 Interviews

The primary material consists of formal interviews with a number of persons in Tanzania and statistical data. My interviewees were small-scale coffee farmers that had been chosen for me by the Land Management Program (LAMP), LAMP's district advisor and Mr. Patrick Msbaha the agriculture department at FARM-Africa. Our class was given a lot of help from LAMP and especially Ms Ulla Maj, development advisor, Mr. Calyst Kaviche Technical Advisor and Mr. Anatoly Rwiza, District Forest Officer when we visited the Babati district. I have interviewed people who are both in decision positions and people affected by their decisions. The interview with Ulla- Maj Jern was held in Swedish. The interviews with Kaviche, Msabaha and Jern were held without interpreters present. The interview with the Chagga farmer Archibold Lyimo was held without translators but Triphonia Temba and Mr. Kaviche were present. The other interviews in Tanzania were held with interpreters which makes the risks for misunderstandings larger between the respondent and the transmitter with a third component. None of us had English as a mother tongue so it is possible that some of the information is incorrect. I had always an interpreter with me in case the farmer or I would need any help with translations. Even though the risk for incorrect information is large with an interpreter I felt that I could rely on the interpreter Temba. When she felt that she had misunderstood the farmers she asked them and if there were any problems with the translations she always corrected herself. The interviews with the farmers were held in Haraa (see map in page 4). I did more interviews with other farmers in the Babati district but I have chosen to not give their commentaries in this essay. During the interviews I did not use a tape recorder because I was told that the farmers could be nervous because of them (Jern 2004:224). According to Jacobsen you could risk to relax too much and miss important parts of the interview if you only use a tape recorder (Jacobsen, 1993). Instead I chose to just note the most important things they told me during the interviews. The interviews were also qualitative where I used a check list and the questions I asked were open, every now and then I summed up what had been said. This made it easier to make sure I understood the farmers correct. The interviews took approximately 30-45 minutes. All the interviews were held at the farmers' plantations which gave me a better overview of how they faced the problems with the fluctuations on the world market of coffee and how

they have changed the ways of production. I think it was easier that we came to the farmers so they did not became too nervous and did not have to drive all the way to Babati town. They did not get paid for their interviews but it felt like they really wanted to share their knowledge to us and also learn something from us. Since I did not know much about how coffee harvests, prices and diseases these interviews gave me lots of input for my essay. During my interviews I was also able to make some observations and spend some time with the coffee cultivators in order to understand their way of thinking and how they grasp the problems with the coffee market.

I tried to come in contact with Gösta Eriksson, an importer of coffee that Jern suggested I should contact by phone in Sweden, but after many phone calls to different governmental instances and institutes I gave up this idea. Instead of an interview with him I held one with Frida Ljungberg, a seller at the grossist company Snacksbolaget. Snackbolaget sells lots of groceries to restaurants in Stockholm, one of their commodities is coffee. The interview was held in the restaurant Oxid Bar and lasted for 15-20 minutes.

### 1.4.3 Literature

The secondary material consists of articles, reports and other relevant literature. Most of the material has been gathered in Tanzania in February. The theoretical framework has been worked out on relevant literature. These authors differs substantially which is the reason I chose to describe them. They are two extremes because they can illustrate two different world orders. Without one of these theories the essay would be too one-sided. Some of the literature I have read where in Spanish and I have got some help with translations from Gunnar Thullberg. In order to empirical test my questions I have (except for my interviews in the Babati district) searched material on the Internet and secondary sources as articles and published dissertations. I will try to conduct an analysis and compare the secondary material with my interviews. If there are any similarities or contradictions between the interviews and my literature I hope to be able to either confute my questions or find them irrefutable. Threw the whole essay I will try to follow the questions asked in order to be able to answer them in my concluding analysis.

Although the issues have been clear since the start the conditions for how they would be responded to have changed during the process. It has not been obvious that the original issues would be left in the final material. They are only basis posts about the course line of action. With my method use I hopefully will land in a reply of these issues, otherwise I transform them. The issues will be responded to in a scientific way in the analysis of my primary and secondary sources.

## 1.5 Outline

The essay is divided in sections where I in the second chapter describe the theories that I have worked with; comparative advantages, the dependency school and the world-system theory. The third section shows the history of coffee, its origin and how it became a trade commodity. The fourth section gives an overview of the different policies that Tanzania has pursued since the beginning of the twentieth century and its economical status today. The fourth section also contains an analysis of socioeconomic and environmental consequences of coffee cultivation and pesticides used to intensify the production. The fifth chapter shows alternatives to reduce the negative environmental effects of coffee growing in the future. The sixth section contains the interviews conducted from my visit in the Babati district. It contains interviews with employees from the Land Management Program and coffee farmers. The seventh section shows Sweden's part of the coffee market. In the eighth section the final analysis and discussion with the conclusions of the study is presented.

## 2 Theory

In this section I will present the theories I will use. In order to understand two points of views of the world's order I have chosen the analysis about comparative advantages from one side and the dependency school and the world-system theory to represent the other side. Finally, I will try to analyze them and use them in order to explain the development of Tanzania's coffee production.

### 2.1 Ricardo and the theory of comparative advantages

Few economic theories have stood the test of time better than David Ricardo's almost two hundred year old theory of comparative advantage, or comparative costs. In contrast to the previous mercantilist views – that exports are good, imports bad – Ricardo did not consider foreign trade to be a zero sum game but rather as something mutually advantageous. If two or more countries specialize in producing the goods they have comparative advantages in manufacturing, all parties gain by the exchange of trade. Free trade, and specialization according to each country's comparative advantage, benefits all countries (Martin, 1997). This theory can explain why countries trade with each other even though a country has absolute advantage. It also explains why countries specialize on goods where they have comparative advantages.

Trade is a driving force for economic well-being based on economic theory. However, there is a conflict between trade and sustainable development because trade may lead to great ecological and social costs, especially for developing countries as Tanzania. With increased trade with foreign countries, the ecological footprints tend to be less visible and it is not easy for the importing country to be aware of what damage the trade causes for the exporting country. The ecological limitation does not disappear, but the importing country seldom has to pay for the external effects. The specialization also leads to an increased vulnerability and decreased possibility to influence one's situation. The comparative advantage of a production of a good leads to increased production and supply and consequently the prices will fall. In extreme cases the price falls under the production costs (Söderkvist, 2004).

## 2.2 The dependency school and the world system theory

The dependency school comes from the development theory that explains the Third World's underdevelopment through the historical state of dependence that these countries have compared to the capitalist countries.

The dependency school started in Latin America. During the 1960's the school turned to the radical approach in neomarxism. At the time the mother country was called center and the previous colony was called periphery. Many dependency theorists like André Gunder Frank suggested a break up with the world market in order to establish a self-trust oriented national development. Frank is one of the central characters in the radical dependency theory. Frank has the thesis that capitalism is a world system, which contains metropolis and satellites. With the transactions of the economic surplus the metropolis got industrialized while the rest of the world (satellites) got underdeveloped. The satellites did not satisfy their own needs but others. Frank developed the theory further with the theory of reduced dependence as a condition to beat underdevelopment. He also studied the different shape of compulsion possession of the economic surplus in the underdeveloped countries (Galeano, 1988).

There are different kinds of underdeveloped countries. The first are the temperate countries of South America who's climatic and vegetal resources made them eminently suitable for the production of those agricultural commodities that requires an extensive use of land. The second group comprises countries in the tropical zone whose agricultural exports were needed mainly as industrial raw material. Most of the countries in Asia, Africa, and parts of Latin America fall into this category. Their role is to supply central regions with such commodities as sugar, tobacco, coffee, teas, cocoa etc (Mabogunje, 1984). According to this theory Tanzania fits into the second group and by exporting green coffee to the center Tanzania remains in its dependency position to the center. This is a possible way to explain why Tanzania still is one of the least developed countries (De Vylder, 2001).

A development of the dependency theory is the world-system theory. It argues that the effect of the structure of the world- system is to ensure that power and wealth continue to prosper at the expense of the powerless and the poor. The relative prosperity of the few is dependent on destitution of the many. The majority in the 'Third world' must suffer so that we in the 'West' can continue to enjoy our privileged existence. Marxism has been a major influence on the development of the world- system theory. Accumulation of wealth at one pole is therefore, at the same time accumulation of misery, slavery, agony of toil, ignorance, and brutality at the opposite pole (Bayliss & Smith, 1999). Emanuel Wallerstein has developed this theory to a modern world-system theory; his first works were in Africa. Here he became unsatisfied with the kind of approach that only looked at one country at a time. There was much that could not be explained about the continued poverty of many African countries if they were only studied individually. For Wallerstein a system has two-defining characteristics. First are the elements within a system that are interlinked. Nothing in the system can be understood in isolation, a holistic approach is necessary. Second, life within the system is self-contained. Wallerstein argues that history has witnessed two types of world-system: world empires and world economies. In a world empire, a centralized political system uses its power to redistribute resources from peripheral areas to the central core area. In a world economy there is no single center of political authority. There are more of a multiple competing centers of power. Resources are therefore not distributed according to central political decree, but rather through the medium of a market. The modern world-system is an example of a world economy. Wallerstein included another economic zone. The semi-peripheral zone that provides a source of labor that counteracts any upward pressure on wages in the core. It also provides a new home for those industries that no longer can function profitable in the core (Wallerstein, 1974).

## Summary

Ricardo's idea that free trade will benefit all countries can explain why the western world does not quit exploiting the less developed countries as Tanzania. It also thinks from the investors point of view and oversee the problem that the investors does not come from Tanzania so the money stays in the country but in multinational companies. The other theories are the dependency school that had its golden ages in during the 1970's but now is a bit too radical. Still I think it is up to date and useful for this essay. It explains the poverty in the poor countries with the center-satellite model. The world-system theory has divided the world's countries in three parts; the center, the semi-periphery and the periphery. The theory shows some optimism that the poor countries in the periphery could reach the semi-periphery if they struggle and get help from the center. Still they depend on the center's investments. I think these theories are relevant for my essay in order to understand the set of problems in a country that relies in the income from one source like the coffee industry in Tanzania. I do not want to give a biased account and this is the reason why I have chosen theories that might seem like paradoxes. I could not use the theories altogether but I will try to apply them in this essay.

### **3 History of coffee**

In this section the origin of coffee, history and its tradition will be presented. How coffee was spread around the world and became one of the most important commodities in international trade will also be described.

#### **3.1 The origin of coffee**

The coffee tree originates from Ethiopia where it grows wild near the place name Kaffa. It is probably from here the word coffee has its origin (Internet 17). It was spread to the Arabic peninsula about 500 A.D. At this time coffee was a rare product and was seen as a religious beverage. Initially the berries and leaves from the coffee tree were boiled and it was not until the 13<sup>th</sup> century the bean started to be roasted (Internet 8). The coffee came to Europe in the middle of the 17<sup>th</sup> Century and reached Sweden for the first time in 1685 (Internet 8). When the trade in larger scale started all the coffee was shipped from the city Mocha in south western Arabia (Internet 8). Coffee has also played a big part in the American history. The Boston tea party was a protest against the British colonial custom of tea which says has started the American Revolution. The choice of coffee or tea showed which side you chose. This is the reason why the Americans stopped drinking tea and moved over to coffee (Internet 18).

This is the main reason why coffee plantations were started in North and South America. The price of coffee was cheap because the workers were slaves and villein. It is here the social structure in Latin America and the pattern of center and periphery started. This pattern is kept and is still visible today (Angelico, 2006). When the colonies came to an end the former colonies tried get rid of their heritage of cheap production for the industrialized world. But the turbulent market takes the former colonial countries play and the fluctuations of coffee prices starts. One secondary indicator to the stock market crash in 1929 was the price fall of coffee. The main coffee producing country had badly weather in the 1950's, which caused a price raise of coffee. The former mother countries politics instruct the former colonies to produce more coffee if they wanted to earn more money. This function just as inflation and the coffee market soon suffered of over supply.

These cycles of over supply and lack of coffee still lasts and one cycle of over supply in the 1990s has lasted until 2004 (Bartholdson & Norbrand, 2005).

One example of how deep this coffee crisis has been and affected the coffee producers is that in the end of the 1980's the coffee producing countries in South had export incomes round 10-12 billion USD a year. In 2004 the export incomes from coffee was half this amount (Bartholdson & Norbrand, 2005). One of the indicators to this was that a new coffee producer soon became the second largest producer of coffee after Brazil. When Vietnam started to produce larger volumes of coffee, it causes an over production of coffee of bad quality on the world market. This was only beneficial for the coffee roaster factories in North, they could improve their profit when the green coffee became cheaper. The big losers were small coffee producing countries who could not keep up with the larger competition. What they got paid for their green coffee did not even cover their costs (Angelico, 2006).

The International Coffee Organization was established in 1963 and has continued to operate under successive agreements since then to prevent tensions provoked by speculative activities. Fifty producing countries, representing 90% of the world production, and twenty-five consuming countries (85% of the market), agreed on a system to stabilize prices. The quotas served to maintain prices within a prestabilized range set by the member countries in the International Coffee Organization (ICO). The agreement had only limited success and on the 4<sup>th</sup> of July 1989, the ICO failed in establishing new quotas (Internet 6).

The EU has no tariff peaks in their customs to green coffee but has a tariff escalation against refined products such as roasted coffee. This protectionist politics is to ensure the inner market in the EU. This impedes the development in Tanzania in areas as processing raw material and industrializing. When there are no customs or small customs in green coffee the penalty duty of the processing gets high. The structure of the customs locks the countries to continue their export of raw material and complicates their industrialization (De Vylder, 2001).

## Summary

The history and development of coffee as a trade product has been presented. Even though it is not about Tanzania specific the problem of the coffee market can be applied on Tanzania. The problem with Ricardo's theory is that the countries comparative advantages get visible. The welfare profit of foreign trade is illustrated static with only two states of equilibrium; with or without trade. The effects of the growth in the long run are taken into consideration. A question is also if the poor countries should settle with comparative advantages in raw material while the richer countries strengthen their comparative advantages? A big problem is the tariff escalation from e.g. EU that complicates Tanzania's chances to industrialization. The penalty duty on roasted coffee and none or small customs on green coffee makes it clear that the dependency pattern still works. The developed countries still exploits the undeveloped countries natural resources.

## **4 Tanzania's economical status**

In this chapter I will show how the fluctuation on the world market has hit Tanzania and what kind of country it has developed to be during the different kinds of govern rule. The problems with aid-dependency and the demands from the IMF and the World Bank will also be taken into consideration.

### **4.1 Economy and loans**

Tanzania is above all an agriculture country. 85 % of the population works with agriculture and cultivated products as coffee, which is one of the most important export products (Nationalencyklopedin, 2000). The amount of coffee workers in Tanzania is about 270 000 and because a large amount of them are small-scale producers there are no exact numbers of how many coffee farms there are. 90 % of the coffee farms are small scale producers and 10 % plantations. Tanzania is the 8<sup>th</sup> largest producer of coffee in Africa and 24<sup>th</sup> in the world (Internet 20).

Tanzania was one of the first African countries that reached independence. Julius Nyere was their first president and did not leave the politics until 1990. He was the leader who developed the African socialism where social reforms for poor were in center. Tanzania was for a long time a symbol for good development, and Sweden walked at the head for the richer countries that wanted to support the young nation financially (Internet 6).

This is one of the reasons why the battle was so severe when Tanzania's economy collapsed during the 1970's. The oil crises, the nose dive of the price of coffee, the war against Uganda, costly expensive reforms, corruption and misrule were all background reasons to the economic disaster. Tanzania became quick one of the worlds most aid dependent countries (Internet 6). The problem is that the natural resources seldom favor the Tanzanians why they are extracted and owned by multinational countries. In most cases there are not enough capital and resources to start a domestic extraction in Tanzania. Africa has today a very little part of the world's economy and with small possibilities to influence it. In the end of the 1970's Tanzania like many other African countries had a great economic crises. IMF and the World Bank have a stated goal of

economic liberalization in Tanzania. This was publicly resisted until 1986 when the Tanzanian government signed an agreement with the IMF. They were heavily in debt to foreign countries and it grew to not sustainable proportions (Internet 5). The donors and loan givers could exercise a large influence because of the countries dependency situation started to demand on deregulation and economic reforms. If Tanzania should get any loans they had to make a structure adjustment program (SAP) (Stock, 1995). In 1982 the first structure adjustment program were introduced and many others have followed them (Ewald, 2001). The reforms have gone straight against the countries own policies and development strategies and Tanzania who had a clear vision of independence, became one of the countries in the third world that were pressured deepest in a dependency situation. In 1985 8 % of the countries GDP were development support, five years later half of the GDP came from development support (Närman, 1995).

In 1986 some market economic reforms started after demands from aid donors. The economic growth has since then approximately been 4 % per year. The SAP is processing slower than calculated, especially because of the lacks in infrastructure and public administration (Internet 6). The SAP has implied large reductions in the social sector. Salaries to teachers and the health sector have declined to a minimum and different kind of charges for social services has been introduced (Ewald, 2001). The unemployment has increased and the poor has affected deepest. The elite, who has the power over decisions in the society, has regained profit thanks to the SAP and the differences in the society have increased (Porter & Sheppard, 1998).

IMF and the World Bank are despite of this very pleased over Tanzania's success in following the SAP. Very few countries have passed trough so many fundamental reforms in such a short time. The inflation is under 5 % and they find the macro-economy in balance. This development has lead to continued increase of aid donors, but the donors have had a great influence over how the money were spent, especially in the infrastructure and social sector (Ewald, 2001). SAP has meant economic efficiency and growth in some sectors, but the debt has at the same time become so big that the advantages of the reforms have been eaten by the repayment demands. When the

economy had stabilized, the country had great expectations of foreign investors who would look for a market in Tanzania. Unfortunately the interest for Tanzania has been close to non-existent. The SAP has also meant a lot of negative impacts like deteriorate environment, political defeat and a marginalization of poor and women (Simon, 1995). At the same time, the coffee farmer gets less paid for his coffee and the segments between poor and rich are increasing (Internet 1).

Tanzania's economy keeps on growing fastest on the African continent. Last year the economic growth was 5.6 %. The economic and politic reforms continue. The inflation is low (4, 4 % in 2003) and the export grows (Internet 19).

The world market prices at traditional export products as coffee has in the latest years increased and the Tanzanian production is vulnerable for competition. It is nothing wrong with the product, but the weak infrastructure on the unmodern manufacturing process in combination with bad packaging technique, design and marketing makes it difficult to maintain the market (Internet 19).

## Summary

In this section I have showed how the governs has affected the country's development to become an aid dependent country. This has forced Tanzania to structural adjustment programs in order to get continued loans from IMF and the World Bank. In order to be able to pay loans, countries in Tanzania's position started to produce larger harvest, which has lead to a large fall in the coffee price on the world market. Tanzania's part of the world market in the coffee is small, which makes it very vulnerable to price fluctuations. This is another kind of dependence but still it is a dependence where IMF and the World Bank represents the former centre and Tanzania remains a part of the periphery with this system. IMF and the World Bank try to help Tanzania to be able to pay their interests of their loans with structural adjustment programs. Still there is a light in the tunnel and the Tanzanian economy grows. The coffee industry is still very vulnerable because it such a small part of the world market and is not able to compete because of unmodern manufacturing processing.

## 4.2 Overview over coffee production and environmental problems

In this chapter I will try to present the coffee industry and the problems it has faced during the intensification of the production and change of the methods in the production. To maximize the profit the use of chemicals occurs in order to prevent coffee diseases that can threaten the harvest.

### 4.2.1 Different methods

Higher production volumes have not only followed the development of new high yielding methods to grow coffee worldwide, the new methods have also led to high pressure on the environment. However, there is no connection between the amount of coffee produced and the number and severity of the coffee pests in any area (Ponte, 2002).

Coffee goes through various stages of primary processing in the country that produce the coffee before it is exported. The main goal of primary processing is the separation of the bean from the skin and pulp of the cherry. There are two methods of doing this: (1) the wet method where ripe cherries are harvested, pulped, fermented and washed, dried, peeled and polished; (2) the dry method, where the cherries are harvested, dried and hulled. The wet process involves removal of the pulp and mucilage followed by drying; the parchment and silver- skin are removed later by hulling. The dry process involves drying of the whole cherry until the green bean inside separates from the outer layers, which are later removed by hulling. In the first case, the result is Mild (or washed) coffee, normally of the Arabica type. In the second case, the final product is hard coffee, either Hard Arabica or Robusta. The distinction is important as Mild Arabica, Hard Arabica and Robusta coffees are traded separately. In all three cases, the end product is called green coffee (Ponte, 2002). The wet method is more troublesome and expensive than the dry method. Before the coffee can be sold it must be picked and cleaned. Today the picking is mostly done with machines, but nice coffee is still picked by hand. Eventually you sort the beans after size and are packed into sacks to be sent to the world market (Internet 8).

Another problem in Tanzania is not the quality of the beans, but the poor transportation possibilities in the country and if the coffee stays too long in the container it is packed in if the transport gets delayed when leaving the country gives the beans a hard aftertaste (Internet 20).

Almost all African coffee is exported as green coffee. Before liberalization, parastatal companies carried out coffee hulling and curing functions in the marketing board system, and by hulling industries under contract for the stabilization funds. In both systems, hulling and curing functions have been in process of liberalization and/or privatization. At the beginning of the liberalization of primary coffee marketing in Tanzania, cooperative ownership of curing plants had created problems for private traders, who were denied processing of their coffee (Ponte, 2002).

#### 4.2.2 The use of chemicals

With the aid of large state credits and reduced prices of agrochemicals to 3 percent of the value, the government promoted a higher use of fungicides and pesticides. The development from the traditional way of cultivating towards a higher intensity method has since then been the norm and the growth in production by the year 2000 is following the same lines, i.e.; higher use of agrochemicals (Simán, 1992). The modern producers feel that they are in a situation with a high risk. The costs of the imported agrochemicals contribute around 25 per cent of the total production costs for the technological grower and 20 per cent for the semi-technological and the rather low coffee prices make production unprofitable (Simán 1992). In addition to the high costs the grower's meet more and more restrictions on their use. Of the agro-chemicals used in coffee cultivating more than half, 8 of 13, are highly toxic or dangerous for the human being. Besides their toxicity, they have negative impacts on the environment, and very intensive farming can cause declining soil fertility and soil erosion. Chemical farming methods can render the land sterile after only 7-10 years (Internet 2).

### 4.2.3 Monoculture

A new coffee plant developed approximately twenty years ago poses an additional environmental problem. The sun coffee plant produces three times as much as a traditional coffee plant by traditional methods. This high-yielding coffee plant was introduced with the technological replay in the eighties. When the coffee plantations cut down the shade trees to make room for this new sun coffee plant, a mono crop, they lost approximately 90 percent of the bird diversity. Furthermore, the direct sunlight lead to deforestation and soil erosion and the tropical rains wash the unprotected soil into the rivers. It is natural because the shade and undergrowth provide nutrients to the plants and immunities to the pests (Ponte, 2002). The shadow trees strengthen the ecosystem and the higher the bio diversity is the better the plantation can defend it self against diseases and noxious attacks (Bartholdson & Norbrand, 2005).

There has been an interesting evolution in the history of hulling. Until 1993 farmers were not allowed to sell hulled coffee. Most dry cherries were hulled by major factories, which had a monopoly on specified areas of operation. As a result of long-term debate on quality and pricing systems the government allowed farmers to choose if they wanted to sell dry cherries or hulled coffee. Because the price is better if you sell hulled coffee almost all farmers choose to hull the berries themselves. This change in the processing system created more jobs for women and more value stayed at local level. On the other hand it introduced a delay in the flow of coffee in the marketing system- the turnover is slower than the industrial hulling. It has also resulted in lower quality of coffee because small-scale hullers tend to break coffee beans easier, especially the highly priced large ones. Lower coffee quality has also resulted from domestic market liberalization in Tanzania (Ponte, 2002).

#### 4.2.4 Broca & Leucoptera

Broca or coffee rust is the most devastating disease of coffee plants, caused by the fungus *Hemileia astatrix*. The symptoms of coffee rust include small, yellowish, oily spots on the upper leaf surface that expand into larger round spots that turn bright orange to red and finally brown with a yellow border. Rusted leaves drop so that affected trees are virtually denuded. Such trees usually die within a few years. Its spread increased in the eighties with the technological changes implementing sunlight that is favorable to the pest. There are several reasons for the increase of Broca in the coffee farms; lack of financing to buy copper to combat the disease, incomplete technical recommendations, excellent climate conditions for the development of the fungus (Le Pelley, 1968). I.e. high precipitation, and favorable humidity and temperature; good production and deficient attention, fertilization, shadow regulation. It is even transferred by the cutters in their clothes (Internet 7).

One of the most common pesticides is Baysiston that is used against fungus and insect attacks. This is a really dangerous pesticide and could be deadly if you do not use protection. It could also cause symptoms as vomiting, diarrhea, breathing difficulties and convulsions (Bartholdson & Norbrand, 2005). The pesticide is manufactured by the German chemistry and drug company Bayer AG. Baysiston is forbidden in the EU since 2003 (Bartholdson & Norbrand, 2005). The common pesticide Paraquat against weed and it causes thousands of deaths every year. The substance attacks the lungs and leads to death by suffocation (Bartholdson & Norbrand, 2005). Another common pesticide is Endosulfan is also used against weed and it is necessary with a proper protection equipment as protection glasses, gloves, long armed sweater, long legged pants and breathing protection. The substance has been forbidden since 1995 in Sweden and 2005 in the EU (Bartholdson & Norbrand, 2005).

## Summary

Some of the problems with the environment due to the coffee production are diseases that attack the coffee trees. These diseases occur and are spread when you manufacture the crop in a monoculture. The use of chemicals in the coffee plants helps the farmer to avoid some diseases but also makes the coffee trees less resistant against other diseases. The unsafe working environment for the workers is also a problem when they use the chemicals and do not have any safety clothes to cover their body or face which makes them inhale poisoned steam. Chemicals as Baysiston and Endosulfan have been forbidden in the North but are still used in the South. Companies in the North produce these pesticides which makes the pattern of development for North and underdevelopment for South which become more dependent of North in order to produce the cash crop coffee. Ricardo's theory of comparative advantages can be applied here because North produces pesticides and South coffee which results in more trade than in just one direction. The problem with the use of pesticides for farmers is that the chemicals is expensive and eats up the profit for the small scale farmer and makes another dependency pattern visible.

## 5 Alternative methods

Trends in the use of technological innovations in coffee are not only linked to profits, there is also a reverse side of the medal; environmental degradation. There is a need to look for an adjustment that goes beyond modern technology. A post-modern coffee culture that incorporates the valuable from the existing methods with the new is still undiscovered. A natural way of controlling weeds and pests is a sought-after article. Coffee plants, which have been left without weed control, show greater water stress during dry spells than plants free of weeds. The coffee plants are likely to show deficiency in nutrients due to weed competition, which may result in low quality of the coffee beans. Effective control of weeds is, therefore, a vital component of coffee management if high coffee yields of good quality are to be obtained. The results obtained in an experiment carried out on a private farm, Masatepe km 50 Masaya highway 1987-90, show that the pineapple intercropping system between rows of coffee plants decreased the weed cover, the weed biomass production and the weed diversity most effectively. A recommendation to coffee growers is that pineapple should be intercropped with coffee. The pineapple does not affect the growth and yield components of coffee and, moreover, a second income is obtained (Aguilar, 1993). Other crops intercropped with coffee are bananas and beans (Bartholdson & Norbrand, 2005). One form of pest control involves using wasps to combat broca, a form of beetle that attacks coffee berries. The wasps eat the beetles. This technique has been used for many years, but more aggressively in the last three years due to the increased volume of specialty coffee being produced (Aguilar, 1993). The use of shadow trees such as the neem tree is used in ecological farming as a natural pesticide. It is used mostly as an insecticide but can also be used against fungus (Bartholdson & Norbrand, 2005).

One possible way to get more profit for the small scale farmer is to move on to ecological farming. Ecological products give the producers a greater benefit and these markets are expanding because people in developed countries want and asks for ecological products. The world market for ecological products comprised in 1997 for approximately 12 billion

dollars and is estimated to grow about 20-25% per year. EU alone stands for 50% of the world market. Coffee is one of the products that are most traded (De Vylder, 2001).

Local ecological knowledge is based on long practical experience which are hoped to contribute to an overall vision and understanding for those slow key variables that can be important in an ecosystem. Local ecological knowledge is not a static phenomenon and an example of this could be taken from Mama Issara in Tanzania. They have successfully maintained an operational agricultural system without using fertilizers or other chemical matters for over two hundred years. They have changed some crops and partial their cultivation strategies. This is an example on how external knowledge could be filtrated through local institutions file and adjusted to the local context (Söderkvist, 2004). There are no simple connections between trade and environment. Potentially the trade will promote the environment because it leads to a more efficient use of natural resources. This includes natural resources and could lead to economical development which could be used for environmental protection. To make this reality an efficient environmental politics must be apply both national and international (Brännlund & Kriström, 1998).

Direct export of coffee to the Fair Trade market in the UK is one way to create greater producer control over links in the supply chain is instrumental to increasing the benefits of trade to the primary producer (Tallontire, A). One example of this is The Kilimanjaro Native Cooperative Union (KNCU) that began to export on its own account when restrictions were lifted on cooperative activity. For the KNCU, direct export, as opposed to leaving the supply chain at the coffee auction, is seen as a means of potentially exerting greater control over the market. The KNCU is a secondary level cooperative representing approximately ninety primary cooperatives in three districts of the Kilimanjaro region of Tanzania, Rombo, Hai and Moshi rural. Its headquarters are in Moshi town, which is also the center of the coffee industry in Tanzania, being the home of Tanzania Coffee Board, the coffee auction and a number of private export and coffee buying industries.

## Summary

In this section I have shown that there are some alternative methods to chemicals and that people in the West where the coffee mainly is exported demand organic coffee. The fair trade organizations have spread a consciousness to the buyers that demand not only organic coffee but also fair salaries for employees in the coffee producing countries. Since Tanzania has become a part of the marketing system they try to reach the international market directly through organizations like the KNCU. The KNCU is supported by Fair trade organizations. If the farmers move on to ecological farming not only does they use the soil in a sustainable way they also spread their risks. Ecological farming includes intercropping which means that the farmer not only cultivates on crop. Coffee is often intercropped with pineapple and this makes the farmer less dependent on the coffee market. The dependency theory means that if the farmer would not buy chemicals from the developed countries would reduce their dependency to the developed countries. This is one way for the less developed countries to break the dependency pattern. The comparative advantages are also enlarged for Tanzania in this scenario because the developed countries demands ecological coffee. This is a win- win situation for Tanzania.

## **6 The field study in the Babati district**

In this chapter my study field will be presented. I present the results of my own observations and interviews that I made in Tanzania between February 22 and March 3 2004 in Babati. Tanzania Assistance Strategy (TAS) is intended to promote local ownership and leadership to provide a framework in which the development parties will work.

Agriculture is the primary means of survival of the majority of Tanzanians and Agriculture and Land are crucial issues in the TAS. The LAMP (Land Management Program), which Sweden has supported since 1990, has as major goal to improve the livelihoods of the farmers and their families. Smallholder management and natural resources including agriculture is in focus within LAMP and is foreseen to be an important component also in the new District Development Program (DDP). The role of the ministry of agriculture is vital for the promotion and development of the agricultural sector.

### **6.1 Production in the Babati district**

The coffee production in the Babati district is not big because it is a difficult crop to rely on (Jern 20040224). One of the LAMP projects goals is to educate farmers to become more independent with organic farming. To make farmers independent from subsidies and donors the LAMP project does not support the farmers with subventions but they help them to find selling channels in the market. A farmer can today not sell direct to a company in another country. They must first sell the coffee to the village and then further to the national market. There have been some problems with this system because the farmers are not paid in advance. They must put out a lot of money and have to trust the national market to sell the coffee for a good price. In recent years, they have been forced to wait for their money until the next harvest and first then they found out that they would not make a profit because the price of coffee had been decreasing. The problem is that the farmers do not have any insight in the market. They must trust the persons in positions over them to make the right decisions for them (Jern 20040224).

They had some problems in Kilimanjaro with organic farming. Apparently the farmers said that they were organic coffee farmers and it became a huge scandal when it came to knowledge that they were using pesticides. She said that people are not aware of the big demand that is put to organic farmers and that they are really testing the farmer's soil. It takes 3-10 years to get the soil clean from pesticides, which makes farmers cheat. When they are cheating they give all the rest of the farmers' bad reputations and no organic coffee buyers will buy from any farmer in that district (Jern 20040224).

In Uganda there is an example of a village that stopped harvesting for three years. They just let the coffee plants be, let the pests that could attack them attack them and then let the plants stick it out. After three years the plants were sterilized and immune against all diseases in a natural way without pesticides. These plants can then be sold at the market as resistant coffee plants. The problem is just that the farmers do not have enough money to leave the plants for three years. If a company would invest in them first and then let them do organic farming as a business idea it would be good but the farmer would then no longer be self sufficient (Kaviche 20040226). Mr. Kaviche also told me about a farmer in Babati that used tobacco leaves and cow dung against weed, which is an example of interaction between LAMP and farmers. It is not a top-down communication (Kaviche 20040226). I actually got to see it with my own eyes in one of our field studies and visits at local farmers.

The main income for people in the district is agriculture where intercropping between maize and beans are dominating. The traditional and the modern system are mixed to improve the crops. The traditional form of agriculture does not take care of soil erosion and because the farmers are not aware of different layers in the soil they often have similar crops from the same family. The modern variety is a mix between crops from different families and the modern farmers prepare the land with tractors, ploughing and sowing recommended seeds (Msabaha 20040228).

Intercropping is difficult so if the market demand rises for maize the farmers choose to run maize only. Trade or barter between villages occurs. If you cultivate coffee, bananas,

beans and maize it is possible to sell the coffee and get a profit. With this money the farmer can improve his crops with better benefits. Pesticides are used but not taken to extremes in this district. The climate in the district has two seasons; one short rain season between October and December, and one long rain season between February and May. The larger farms are in the highland areas of Babati district. It is colder there so the pests are not spread as easily as in the lowland where the climate is warmer (Msabaha 20040228).

New technology or improved crops encourage people to join this development project (LAMP). Farmers are divided in a village to a group between 10-15 people. The whole village is not a part of the experiment but if the rest of the village sees an improvement of the crops they will adopt the new way. This extension system is paid from donors such as NGO:s and aid. To sell the new ideas they arrange field days where farmers can study and see the difference. Technology and education from donors is the way new aid is trying to work with to make sure the money goes in the right pocket without any corruption loss. Almost all coffee plantations are intercropped with bananas. But only the coffee is sold to the Mlimani rural cooperative society. The cooperative sells the coffee from the villages and sub villages further to Moshi where they process the coffee (Msabaha 20040228).

The market system is the largest problem for the farmers because the market for their crop helps them to get cash for the next season. If they do not have money they cannot improve and get modern. This means that education and rich people can improve their crop while the poor farmers cannot. This will soon lead to a gap between farmers. The farmers produce enough but it is not easy to sell because of different prices from the time they harvest and the time they sell. If they had the opportunity to store, they could time the market and sell when the price is higher. Aid donors encourage farmers to store so they could get a larger profit. It is not the seller that decides the price but the buyer. If the demand is not increasing but the harvests are. The world market price will fall and the looser is not the large companies but the small-scale farmers (Msabaha 20040228).

The use of pesticides is increasing in the country but the district does not use lots of chemical pesticides or industrialized fertilizers. Organic farming can be an alternative to pesticides and lower the risks for accidents. If you use local plants that are made for this climate you do not have to use pesticides and people can start with organic farming. This development does not go fast because the farmers do not get big harvests, but it is larger compared to the traditional agriculture. The economy in the district relies a lot on agriculture which is the main reason why they are trying to improve and make the sector more efficient. They teach the sellers to look for markets for their crops. It is better with low scale farming than large scale and this is intensified in the Babati district. New crops with better profit as sugar cane and sunflowers are introduced to the farmers and developing at the moment (Msabaha 20040228).

### 6.1.1 Farmers

Paolo Jacob comes from Kilimanjaro and differs from the traditional ethnicity. He is an Iraqw farmer and sells his coffee to the Mlimani rural cooperative society, the local cooperative which buys coffee from farmers and takes it to Moshi Coffee Querying. This village has potential farmers that are not Tanzanian. They are comported from different parts in the northern parts of Africa (Jacob 20040226).

Mr. Jacob had been a coffee farmer since 1973 in Bruza sub village that has 60 households. He landed the procedure from coffee plants. The idea came from his father. In 1976 he had his first harvest. He had 150 plants and it gave a harvest of 1 tin of 20 liters. In 1979 he had 200 plants. In 1984 he had 300 plants and in year 2000 400 plants. So he extended the plot. He explained the procedure of planting. First you prepare a hole in October- November. The hole is about three feet deep. After one month it is mixed with the top layer. After this you put the plant in the hole and in about three years the coffee tree it will become about half a meter. To prevent leaf rust he prunes the trees. The product also becomes better if you prune it. The trees could easily get infected: CBB (Coffee Berry Borer), Leaf Rust and Stem borer who are caused by insects are the most common diseases that can destroy the harvest. To block these diseases he uses some pesticides. Blue copper flour mixed with 20 liters of water is used against leaf rust. He

sprays it to leaves two times a year, one time in Jan- Feb and one time in April. In April-May he uses red copper against CBB and another pesticide is used to heal stoke borer. Before expert advice was given from the council he used to spray all plants but now he only spray the plants that are infected. When the coffee is rife and red then they pick it off the trees by hand. He has a machine that takes the capsule off the beans; it peels them (1/5 kg takes 5 minutes) (Jacob 20040226).



Figure 3 & 4: *Coffee peeling machine and coffee trees intercropped with bananas*  
Work up: Megha Huber

After this he puts the beans in water and leaves them there for 3-4 days. This procedure is followed by washing the beans and letting them dry in the sun for 12 days. Finally he sells the beans to the local market which sells them further to the national market. Coffee has a long harvest time which last from July – November. He sells 7-10 tins of bags and one bag contains 16 tins of 20 liters. He did not get any advice or donations from LAMP but from the council. The agricultural center gave him advice about how to harvest. Since he has been a farmer for a long time he could tell me about the price fluctuations and the total dependence of the world market price of coffee that has decreased (Jacob 20040226). The table below shows what Mr Jacob got paid for one kilo coffee since he started growing coffee. At the time of my visit (2004) 1000 shilling was worth about 10 USD.

1976-1994	Bad harvest
1995-2000	Good harvest
1998	2500 shilling for one kilo coffee
2000	2000 shilling for one kilo coffee
2002	1000 shilling

Figure 5: *Table of the price development of coffee for Mr. Jacob*

Work up: Megha Huber

He must invest 150 000- 200 000 shilling in pesticides every year and only profits 250 000 – 300 000 shilling and some times less. So he just makes enough to survive. Many farmers are becoming disappointed in the coffee business because the world market price is decreasing every year instead if increasing. They change to other crops and markets with more demand. Mr. Jacob has not planned to change crop. Coffee must be sold quickly because the quality is better when it is fresh than if you store it. They cannot add anything to get a larger harvest. Experts give them advice once a month in groups. Special demand makes a farmer to get advice more often. However, it is a special business where they have been taught to accept waiting. When the government gives advice to the farmers to get direct to the market, they follow it. One type of agro forest with intercrops of bananas and coffee are recommended both from the district council and LAMP. Organic coffee is encouraged in this country (Jacob 20040226). The traditional farming is improved. African soil is generally malnutrition and sensitive for erosion (De Vylder, 2001). Earlier the plantations in the district where very vulnerable for erosion, but in 1995 they started put counters around the plantations and with different benches that made the soil less erodent. Mr. Jacob's coffee plantations were intercropped with bananas. The bananas and the coffee plants where planted the same day. The bananas gave a harvest on the first year (Jacob 20040226).

Mr. Archibold Lyimo is a traditional coffee farmer. He is a chagga farmer and planted the coffee himself. When we arrived he just pruned the coffee trees, *Albezia* species. He planted the coffee trees after the British system with 9 feet from tree to tree and they were planted in squares. To prevent rust he uses pesticides against leaf disease and insects. These are sprayed every 21-day 4 times a year. To peel the coffee beans he uses a

machine. The farm has 2000 trees and is 2 hectare. The farm is 30 years old. When the coffee price fell down, because more people started agriculture in Asia, he found other incomes like maize, bananas and beans. He does not inter crop the banana trees with the coffee trees, they have a special field. He gets 40 coffee bags per harvest. When he harvest he employs some labor but otherwise he has no employees. The employees gets 300 shilling per tin and you could pick up to 6 tins per day. 18 tins make 50- 60 kg-dried coffees, which is one bag of coffee. He has planted the trees in lines, contouring and lets the weed be to prevent erosion. He feels that he is too old to take care of the coffee plantations and he has no sons who want to take care of it. His sons live in Dar es Salaam (Lyimo 20040226).



Figure 6: *Stem borer*  
Work Up: Megha Huber

Emanuel B Kumbi is a Barabai farmer and has 2-hectare coffee but has also other crops as bananas, trees and livestock. He uses some pesticides as Blue copper and Red copper and Baysiston. He used to spray the whole farm so the insects would shift to another farm or to the forest. He invests about 240 000 shilling in pesticides every year. He pays people to prepare the plants against CBD and leaf rust. Protection is not used when they

use pesticides, only clothes that cover the body but no mask or gloves. He has operated this farm since 1963 ( Kumbi 20040226). In some years they got high production. But in general they had high productivity one year followed by low production the next year so there were never large profits. Large harvests are often accompanied with diseases, which makes the harvest smaller next year. He gets about 15 bags of coffee per year, which is 15000 kg. The coffee trees were planted 9 feet to 9 feet in squares and bananas are intercropped. Grevillea trees and neem trees are planted to balance contours in order to prevent erosion. To get moisture in the soil he molds, soil conservation structure. The leaves from bananas make a compost system possible. He is daily receiving extension advice like foder grass and bananas. He was one of the first people who visited the training center in Babati 1992-94. The harvest increased and now he is a contact farmer who trains other farmers. He is using agro forestry like the training center taught him and is now the 1:st extension worker for the training center. His plantations are used to educate other farmers and as an example in how they can improve their harvests. He is trying to emphasize the market:

“Infrastructure including connecting is an important factor but without the guarantee market you cannot do much”  
(Kumbi 20040226).

Another interesting point of view from Mr. Kumbi was when we asked him about ecological suggestions for the North:

“First you come and take our country, then you tell us that we should take care of ourselves. Then you teach us how to earn our own money and getting greater harvests if we use pesticides. And now you are telling me that pesticides are not good and if this was not enough you want my advice. I tell you that I do not know what to believe in because the direction is constantly changing. Make up your mind”

(Kumbi 20040226).

### 6.1.2 Democracy and development

One problem that you cannot ignore is that not only the fluctuation in the world market that causes problems for the farmers. The inner problems in Tanzania like the lack of a well- functioning administration, corruption, bad infrastructure, unstable politics, and bad

economic politics affects the farmers. The connection between political anxiety and economic stagnation are strong (De Vylder 2001). A new improved and larger road is planned in the Babati district. At the district council they have the belief that this will make it easier for the farmers to get to the market with their products. Today many of them are dependent on buyers who come to the village and buy their crops. This force the farmers to sell to a lower prize than what their own prize would have been set. If they themselves can transport the products to the market it would be possible to get higher prizes and larger profits (Msbaha 20040228). But when you speak to the farmers themselves they do not have anything to complain about the road that is there today. The problem is rather the fluctuations in demand of crops and the inability to store the crops so they can time the market when the demand after a specific crop is increasing. Today they peel the coffee and put it in water cans for ten days and after that they dry it in the sun. After this they must sell the coffee very quick, otherwise the quality is defeating in a short time. During the time we spent in the Babati District an election were held. Many people that I spoke with did not feel like they could affect the result. They said it was a fake election and the result was clear even before the Election Day. The person who won did not belong to the majority ethnicity, he was Indian, and they had the money in the district. Still they said he was the best choice of those who were candidates in the election. This shows that the political system is not developed and not believed in which makes it difficult to defend its expansion.

## Summary

All the interviews confirmed the suspicion about the dependency to the world markets price of coffee. The interviews accords with the literature that has been presented in previous chapters. It seems like Tanzania's part of the coffee production in the world is pretty stable and won't be intensified. The farmers are getting paid less and their profit is decreasing. All the farmers still used chemicals but were very interested in organic alternatives. The chemicals are also very expensive and make their profit smaller than it would be with organic alternatives that do not have to be imported from other industrialized countries. The interaction between LAMP and the farmers seem to work

pretty good, the farmers got suggestions from LAMP about organic farming and LAMP also got ideas about methods used by the farmers. One farmer used tobacco leaves and cow dung to prevent his plants from weed. Two farmers had intercropped their coffee fields with bananas and other fruit trees that is a way to prevent soil erosion. One farmer had not intercropped his coffee trees with bananas. He had a separate field for each grain and he did not remove the weed from the plantation. He did not improve his plantation from a traditional farm to an organic farm. Still none of the farmers produced ecological coffee which lowers their incomes. The fluctuations in the coffee industry made them change from monoculture to other crops to spread the risks. The interviews also gave me as a visitor an optimistic sight that the plantations tried to be as organic as possible. They were also aware of the opportunity to process the crops in the districts in order to make the profits larger and try to get the investments flow of cash to stay there. But it does not seem like the farmers are aware of how harmful these pesticides can be because they admit that they do not use any gloves or masks when they spray their plants. The only thing that they said was that they used for protection was clothes that cover the body. One possible reason could be that only two decades ago the aid donors told the farmers to use pesticides for a better harvest. One of the farmers was very old and had a traditional coffee farm and maybe he was not a part of the LAMP- project and therefore did not receive new information about the risks. There is also another possibility that LAMP has not informed the farmers enough. If you attach this problem to the dependency theory the reason is that companies in the west continue to sell pesticides that no longer are used in their countries to countries that are less developed. One thing that shows how the dependency theory works is that many of the pesticides the farmers use are forbidden or restricted in the western world; still they produce this chemical and sell it to the countries as Tanzania where the farmers do not use any protection. The risks of getting harmed are large if you read the warning signs on the labels of the products. A clear link is also the amount that goes from the farmer to pesticides. One farmer could actually double his profit if he would move on from using pesticides to organic coffee farming.

## **7 Sweden's part of the coffee production**

In this section I will show the connection between Sweden's consumption of coffee and the production of coffee in Tanzania.

### **7.1 Swedish import**

Sweden import mostly green coffee and roast it in Sweden. One of the reasons of this is that Sweden is a member in EU and they have a penalty duty of refined coffee and no penalty duty of green coffee. There are no penalty duties of refined coffee between EU countries which could have affected the export success of Swedish coffee (Internet 8). In 2004 the amount of imported roasted coffee was 9 979 ton. The import has increased during the 1990's mainly because the large grocery chains own brands are produced in foreign countries. But the export of roasted coffee was even larger, 11 729 ton. Sweden is therefore a net exporter of roasted coffee. The custom statistics does not separate whole beans and grounded coffee, but the predominately part of import as well as export is grounded coffee. The penalty duties influence the import pattern and are a disadvantage for the producing countries in their ambition to export more refined products (Internet 8).

#### **7.1.1 Buyers**

The coffee industry is pretty structured with four dominating companies, two multinational; Gevalia,(Kraft Foods) and Zoega (Nestlé) and two domestic; Ljöfbergs Lila and Arvid Nordqvist. These coffee roastery factories have improved their profits much thanks to the fluctuation in the world market of green coffee (Bartholdson & Norbrand, 2005).

When the coffee has been refined (mixed, roasted, grounded and packed) it usually goes further to a wholesaler and from there to retail trade or cafés and finally to the consumer.

There are three big different coffee products manufactured in stores in Sweden:

- 1 Roasted beans
- 2 Roasted and grounded coffee
- 3 Instant coffees

The amount of organic coffee of all cultivated coffee is about 2 %. The amount in Sweden is approximately 3 % (Internet 8). Gevalia has 43 % of the Swedish market and has one ecological brand (Internet 10). Zoega has 17 % of the market and has one ecological brand (Internet 9). Ljöfbergs Lila cut is 17 % and they have 3 ecological brands and two fair trade brands (Internet 11). Arvid Nordqvist cut of the Swedish market is 11 % and they have one ecological brand and one fair trade brand (Internet 12).

There are few finished products that we buy from the coffee producers but one thing that is changing is that people want their coffee to be higher quality coffee. One example is a coffee roasting factory in Tullinge that buy high quality beans directly from the farmer (Mera Historia, 2006). This makes it possible for farmers to get higher profits for their beans. The coffee farmers that I visited in Tanzania all cultivated Arabica beans which is a bean with higher quality than the Robusta bean. At the moment all beans are mixed at the world market, the origin is unknown and you can not separate the good beans from the bad one's which makes the small-scale farmers profit smaller (Internet 8). Tanzania's part of the world market is less than 1 % and is not one of the most important origin countries for Sweden (Internet 8). This makes it difficult draw conclusions and assumptions of the connection between Sweden's consumption of coffee and the coffee production of coffee.

The only Tanzanian brand that I could find on the market was the instant coffee Africafé (Internet 13). This is a product that is cultivated in Tanzania and is an organic and fair trade brand. It is cultivated by intercropping banana trees and beans. This product is refined in Tanzania, the beans are roasted by hand. The main part of the process take place in a Tanzania which means that a big part of what the consumer pay stays in the origin country. Africafé is however packed in Finland (Internet 14).

### 7.1.2 Distributors

The distributors in Sweden are many when it comes to small brands. Africafé is manufactured by Olle Wallin in Sweden (Internet 15). Otherwise the four dominating companies distribute their brands directly to the retail trade. The large retail traders have their own coffee brands which also are distributed directly to the stores. This makes the costs as low as possible for the stores. The smaller brands and distributors to restaurants and cafés have more middlemen. One example of this is Snacksbolaget that distributes instant coffee, grounded coffee and espresso beans. They have no ecological brands (Ljungberg, 2006:315).

### 7.1.3 Retail Stores

The retail stores are where the consumers go and buy the final product. The large food chains in Sweden do not have any Tanzanian coffee. They have mostly coffee from the four large producers in Sweden and their own brands. A small amount of them is ecological and even smaller are the fair trade brands. One small coffee shop is Gamla stans te och kaffehandel. They have many different coffee beans from all over the world but not from Tanzania. They have one sort of ecological bean from Peru and it costs 199 SKR per kilo or 105 SKR for 500 grams. The cheapest beans cost 135 SKR per kilo and the most expensive 229 SKR. There are flavored brands that cost more but they are not sold per kilo (Internet 16).

### 7.1.4 Consumers

After Finland Sweden is the largest consumer of coffee in the world, per capita the average Swede drinks 3, 2 cups of coffee per day (Internet 8). The consumers in Sweden demand ecological coffee but are not willing to pay more for the ecological product (Mera historia, 2006). They are price sensitive when it comes to coffee because it is considered a ground good in Swedish households (Mera historia, 2006).

## Summary

The pattern of the dependency school is visible when it comes to the coffee production in Sweden. The penalty duty on refined coffee that came with the EU-membership makes it difficult for producing countries to keep the profit in the country. Instead they sell green coffee and let the profit go to middlemen and the production of refined coffee in industrialized countries as Sweden. The four largest producers in Sweden have ecological coffee brands but it is a paradox that the largest multinational companies only have one brand each. One of the domestic brands has three ecological brands and both the domestic companies have fair trade coffee brands. It is a paradox that a domestic company that has less profit and a smaller amount of the market than the multinational still is able to manufacture more ecological brands. None of the large coffee companies in Sweden manufactures Tanzanian coffee. The only distributor of Tanzanian coffee that I have been able to find was Olle Wallin. He distributes Africafé which is a product that is refined in Tanzania. Still the pattern of dependency is shown when the coffee is packed in Finland. The Swedish consumer has a problem with double standards. On one hand they demand more ecological coffee but on the other hand they are not willing to pay more for a product that costs more to produce.

## 8 Concluding analysis, result and summary discussion

Here I will try to link the different parts of the essay together. A connection between the experience, the ambition and the result will be conducted. My purpose was to look at economical, social and environmental impacts of coffee cultivation at household and national levels in Tanzania. My intention was also to look at the link between Sweden and Tanzania's coffee production.

The following questions were:

- Which are the dominating interests behind the coffee production and what are their effects?
- To what extent is pesticides used as an instrument to achieve an intensified production and are there any alternatives?

Coffee is a cash crop which has an enormous demand in North. Sweden drinks most coffee in the world after Finland. The penalty duty in EU against refined coffee and none against green coffee makes it possible for Swedish coffee roaster factories to buy green coffee cheap. This system eats up the improved profit from refined coffee and undeveloped countries continue to export raw material. Peripheral countries as Tanzania are still dependent to the center and it makes them vulnerable to fluctuations on the world market. Despite this shows that the benefits to produce coffee are larger than the costs. The fluctuations at the world market and the price dive of coffee in the 1990's has improved the profit for the coffee roaster factories and caused great losses for the small-scale coffee farmers. The ecological footprint tends to be weaker with a trade commodity that is produced in one part of the world and refined in another which is the case with coffee. It is not possible to account all the environmental damages because there are some values that cannot be figured.

Coffee has been Tanzania's major export product since the beginning of this century, although its relative share of total export is decreasing due to low world prices. One of the major environmental problems when it comes to coffee farmers is the coffee diseases which initiated the use of chemicals. The wide availability of credits at the beginning of

the 80s promoted a rise in production through the use of fertilizers and high yielding methods, and the use of pesticides was implemented. This has led to soil erosion, deforestation and additional pests as Leucoptera. Taking into consideration the harm coffee causes to the environment, new possibilities for the future are developing. Intercropping coffee with bananas instead of using chemicals to control weeds, other options is organic coffee and fair trade coffee.

Ricardo's theory explain why countries trade and why a country specialize on a product where it has comparative advantages. Ricardo's theory thinks from the investors point of view and oversee the problem that the investors does not come from Tanzania so the money stays in multinational companies instead of the country. His theory is that with as much trade as possible, the country will become the benefit and the countries growth will increase. This does not consider that a country like Tanzania has other issues to consider. In addition, it does not answer the question if the less developed countries as Tanzania should settle with comparative advantages in raw materials when the richer countries strengthen their comparative advantages. The core or the center as the North represent in this theory almost only buy green coffee (not prepared) in order to keep the satellite in the dependent position. Another way of making it sure that the satellite stays where the core wants it to be is what the IMF and the World Bank makes with high interests so the satellite never gives any chance to pay its loans back. With these high interests, it is almost impossible for them to create a better infrastructure or a social security net. Aid-donors want to help them with this if they in return buy products from the country that the aid-donor represents. The pattern of the dependency school goes on and on. The world-system theory has almost the same approach as the dependency school, it has only divided the world's countries in three parts instead of two; the center, the semi-periphery and the periphery. Tanzania is not in the semi-periphery so it does not matter if I choose using the center- periphery approach or satellite- metro pole.

Many farmers have moved to other cash crops with larger and faster profits. This was the example with the traditional farmer who moved on to crops were he could get paid faster than from coffee. All the interviews confirmed the suspicion about the dependency to the

world markets price of coffee. It seems like Tanzania's part of the coffee production in the world is stable and will not be intensified. The farmers are being paid less and their profit is decreasing. This is shown in figure 5 which shows the development of Mr. Jacob's profit. He got paid less than half the price he got during the beginning of the 1990's. All the farmers still used chemicals but were very interested in organic alternatives. One farmer actually tried to protect the trees with tobacco leaves and cow dung. The chemicals are also very expensive and make their profit smaller than it would be with organic alternatives that do not have to be imported from other industrialized countries. All the farmers had intercropped their coffee fields with bananas and other fruit trees that is a way to prevent soil erosion. They had made this after suggestions from LAMP. There was only one farmer who had not improved his plantation from a traditional farm to an organic farm. It seemed like the word organic were a little bit abstract for the farmers and like Ulla- Maj told me I do not think that they were aware of the fact that you cannot use any pesticides at all in organic farming. The fluctuations in the coffee industry made them change from monoculture to other crops to spread the risks.

There are some alternative methods to chemicals and people in the North where the coffee mainly is exported demand organic coffee. The interviews gave me as a visitor an optimistic sight that the plantations tried to be as organic as possible. They were also aware of the opportunity to process the crops in the districts in order to make the profits larger and try to get the investments flow of cash to stay there. The pattern of the dependency school is also exposed with the fact that many pesticides are forbidden or restricted in the North; still they produce chemicals and sell it to the countries as Tanzania where the farmers do not use any protection. The risks of getting harmed are large if you read the warning signs on the labels of the products. It is also interesting to see LAMPs function in Babati. It is a less top down controlled system than previous SIDA financed programs to limit the risks of leakage of the finances to the corruption in Tanzania. The program also takes help from competent people from Babati in order to reduce the gap between educated people and farmers and to make the farmers listen to LAMP and have faith to the program. LAMP also listens to the farmers which make the

exchange of information work and an improvement to occur to a greater extent than if it just comes from one direction. This is a similar example like Söderkvist got from the village Mama Issara where external knowledge and local ecological knowledge adjusts to the local context. Still LAMP works as a donor and helps the farmer to self-help make them spread their risks, store their coffee, move on to organic farming and also roast their coffee in the country. To roast the coffee is a way to industrialize the country but oppose this development the EU has a penalty duty against refined products as roasted coffee. The benefits could gain by gradually pass on to ecological coffee farming. The reason for this is that the costs for expensive pesticides vanish for the farmer when he moves on to ecological farming. Ecological farming also means intercropping and the farmers has more crops than in a monoculture, which makes them less dependent on the coffee market. The demands for ecological crops from people in the developed countries increases and the farmers actually get more paid for ecological products. This is all on the plus post and another positive aspect is that ecological farming means that the soil is cultivated in a sustainable way.

The fair trade organizations have spread a consciousness to the buyers that demand not only organic coffee but also fair salaries for employees in the coffee producing countries. This inspires some hope for Tanzania's coffee producers to be less dependent on chemicals and to get better prices in the world market. This can lead to a stream of money kept in the country and maybe to create the infrastructure without donors. I agree with Brännlund & Kriström that there are no simple connections between environment and trade. There is a chance that the trade from coffee will lead to economical development that in return will be used for environmental protection. One important aspect that must not be forgotten is that not only the fluctuation in the world market that causes problems for the farmers. The structure in Tanzania like administration, infrastructure, and politics must also develop. The corruption must be determined and faith to the democratic system must get wide spread in Tanzania. Otherwise it will be difficult for the country to develop and quit its dependence to the developed countries.

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