

University of St.Gallen
Graduate School of Business Administration,
Economics, Law and Social Sciences (HSG)

Master's Thesis



Bottom of the pyramid marketing:
The case of low cost drip irrigation for coffee and other crops in
Nicaragua

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May 18, 2009

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Abstract

More than a billion people live on less than a dollar a day. Many organizations have tried to fight against this miserable condition, but none could eradicate poverty. Frankly speaking, quite the contrary is the case; by giving the products away free of charge, the whole market was destroyed. A lot of different approaches, theories and debates try to solve the bad life situation of billion of people. This master thesis focuses on C. K. Prahalad, who invented a new approach breaking this vicious cycle by thinking of people at the bottom of the pyramid (BOP) as creative entrepreneurs. The main focus lies on general strategies firms need to implement for being successful at the BOP market. This thesis specially focuses on the BOP market for low cost drip irrigation for coffee and other crops in Nicaragua. The focus is relevant because a significant number of small coffee producers depend on coffee revenues to survive in Nicaragua. The results of this thesis: Companies need to deal with three major challenges, namely supply chain, promotion and financial support. In doing so, they ought to think out of the box and find fundamentally new business models, because the BOP market is different from developed markets. Only in finding creative and innovative new ways, a firm can successfully operate in the BOP market.

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1 Introduction

“More than a billion people now live on less than a dollar a day; eight million people die each year because they are simply too poor to live; ten million children die each year because they have the terrible misfortune of being in a poor country with a high infant mortality rate”.¹ When people hear about these facts, they generally react shocked, but they helplessly watch the situation and don’t know what they should do about it. A lot of different approaches, theories and debates try to solve the bad life situation of billion of people. Many organizations have tried to fight against this miserable condition, but none could eradicate poverty. Quite the contrary is the case, they provided assistance with products and services by giving them away free of charge and in doing so, they destroyed the whole market.

This master thesis focuses on one of the above mentioned approaches that claim to eradicate poverty. C. K. Prahalad invented a new approach for breaking this vicious cycle by thinking of people at the bottom of the pyramid (BOP) as resilient and creative entrepreneurs and value conscious consumers. In his opinion, there is a great opportunity at the BOP and firms can be successful by serving this market. But if companies operate in developing countries, they need to factor the differences between developing and developed countries in their strategy, because common instruments, which work very well in developed countries, do not necessarily work in developing countries too. Therefore, firms need totally different business models for operating in this new area.

Because of the fact that “to be poor is believed by many who are, and most who are not, to be an unpleasant thing,”² it is the mission of today’s generation to change this situation. With the approach of Prahalad, this master thesis shows how totally different business strategies can change lives of thousands of people for the better and at the same time be rentable for companies.

¹ Banerjee (2007), p.1.

² Galbraith (1979), p.1.

1.1 Research question

Regarding the topic of this master thesis, the research question can be defined as follows:

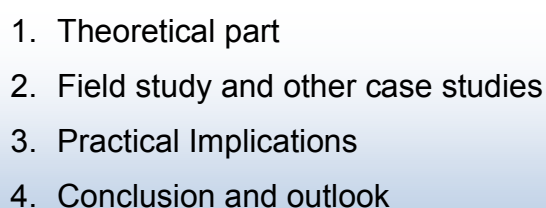
What does BOP marketing really mean and in what aspects does this approach make a difference for firms? With special focus on the case of low cost drip irrigation for coffee and other crops in Nicaragua.

The main focus will lie on strategies firms need to implement for being successful at the BOP market. A special focus will lie on the BOP market for low cost drip irrigation for coffee and other crops in Nicaragua. The research question consists of two sub questions, which are strongly interlinked. On the one hand, the master thesis will spotlight the specific case of Nicaragua; on the other hand, the paper will give general advices to firms based on the Nicaragua experiences.

The research question is relevant because a significant number of small coffee producers depend on coffee revenues to survive in Nicaragua. By modifying their irrigation situation, their life can be changed in an efficient way. Furthermore, by analyzing the marketing strategy for low cost drip irrigation in Nicaragua, general advices can be given to companies, which like to serve the BOP market by using an innovative and efficient business model.

1.2 Methodology and structure

After defining the research questions, the methodology and the structure will be explained. The master thesis consists of four major parts:

- 
1. Theoretical part
 2. Field study and other case studies
 3. Practical Implications
 4. Conclusion and outlook

To give a good overview of C. K. Prahalad's approach, some general information about the BOP market will be given, including its characteristics, challenges and advantages, in the theoretical part. In the second part, the field study of Nicaragua and other case studies will be presented. The third part will give some practical implications for firms which serve the BOP market. Finally, a conclusion and outlook will be drawn in the fourth part.

The methodology of the theoretical part is a research in books and articles. For the second part, it is a study on low cost drip irrigation for coffee and other crops in Nicaragua conducted in August until October 2008 in Nicaragua. For the third part, the field study, other case studies and research in books and articles are fundamental.

This master thesis contains ten chapters. **The presented chapter** stands for introduction, research question, methodology and structure. **Chapter two** gives a short introduction of the BOP approach by C.K. Prahalad. The focus will lie on defining the BOP as well as characteristics, challenges and advantages of this kind of market. **Chapter three** presents an overview of the different aspects of people's life at the BOP in order to give a better understanding of their buying behaviour. The overview in chapter two and three gives the reader the necessary context and background for understanding better the following chapters. **Chapter four** provides some general information about the irrigation situation in Nicaragua and the project of IDE (International Developing Enterprises). **Chapter five** explains the characteristics of a social marketing plan and stands in high connection with **chapter six**, which describes the exact marketing plan for drip irrigation in Nicaragua by using the social marketing plan. **Chapter seven** deals with other case studies in order to compare them to the field study. **Chapter eight** gives some practical advice to firms operating in the BOP market, based on the field study and the other case studies. **Chapter nine** summarizes the whole discussion and **chapter ten** is an outlook. The whole structure of the master thesis is also illustrated in figure 1.

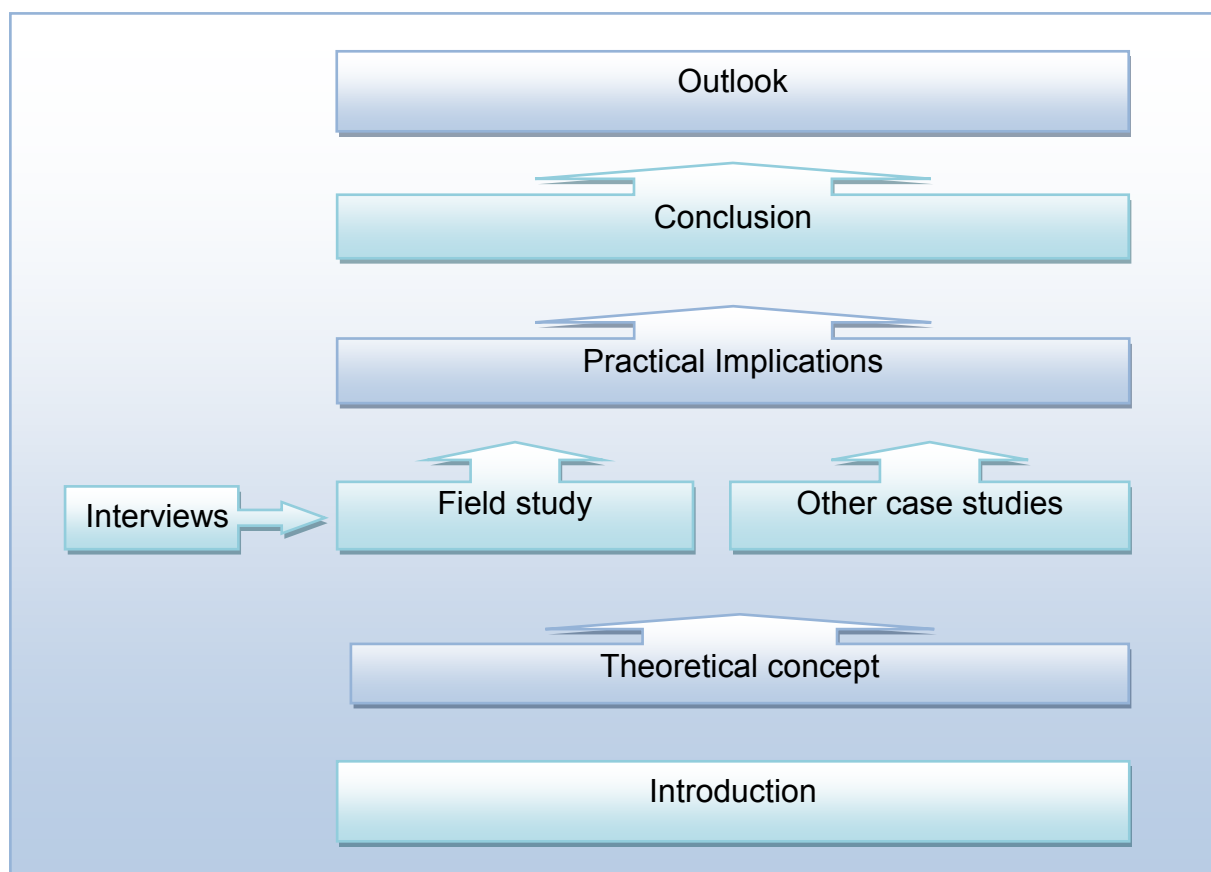


Figure 1: Structure of the master thesis (Source: own figure)

It must be reminded that the goal of this master thesis is not to criticize the approach of C.K. Prahalad, but rather to use this approach and give an idea how it could be implemented in praxis.

2 Bottom of the pyramid markets

This chapter gives a general introduction of the BOP framework for getting a clear picture of the characteristics, challenges and advantages of the BOP market. “Prahalad wants to alleviate poverty worldwide. His work and research focus on the theory that providing aid to the world’s poor will never be sufficient to raise them from the pit of poverty. Enabling them to participate in the world’s economy through entrepreneurship is the key that can help mitigate poverty”.³

2.1 Definition of the bottom of the pyramid framework

The bottom of the pyramid (BOP) framework was established, as mentioned before, by C. K. Prahalad. He captures the distribution of wealth and the capacity to generate incomes in the world in the form of an economic pyramid.⁴ The BOP is composed of Tier 4 and 5 as shown in figure 2. It consists of the 4 billion people living on less than \$2 per day. According to Prahalad, organizations like the World Bank, civil society organizations, various aid agencies and the United Nations (UN) have all done their best to fight against poverty, but they were unable to eradicate poverty.⁵ Aware of this fact, Prahalad wrote his book *“The Fortune at the Bottom of the Pyramid”* with the following proposition: “If we stop thinking of the poor as victims or as a burden and start recognizing them as resilient and creative entrepreneurs and value-conscious consumers, a whole new world of opportunity will open up.”⁶ In connection with this statement, Prahalad means that poverty alleviation has to become a business, which can be very successful.

³ Moore (dateless), p.15.

⁴ Prahalad (2005), p.4.

⁵ Prahalad (2005), p.3.

⁶ Prahalad (2005), p.1.

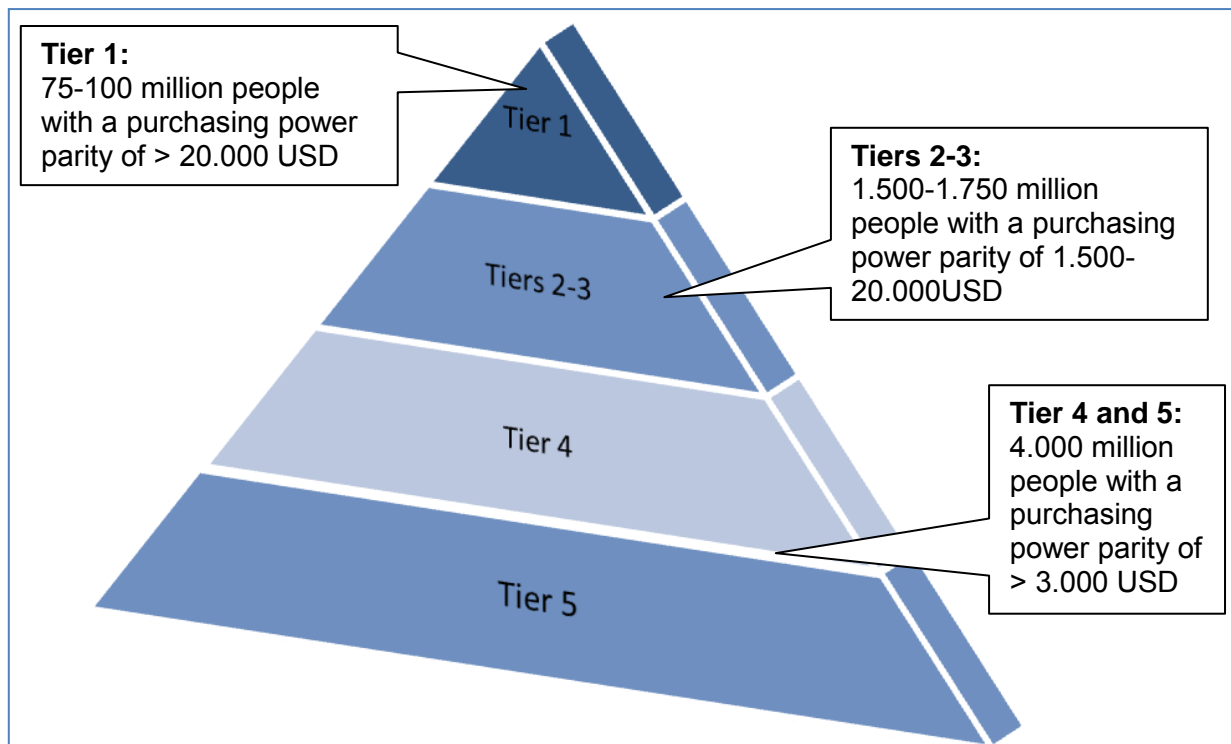


Figure 2: The economic pyramid (Source: Prahalad & Hart, 2002)

2.2 Characteristics and challenges of the BOP market

Before poverty alleviation can become a business, firms need to know what characterizes the BOP market. In the following paragraph, nine characteristics of this kind of market will be discussed. It is needless to say that much more attributes exist, but this master thesis focuses on the following nine, because they are significant for the market in Nicaragua. The nine characteristics are:

1. Size of the BOP market and its segments
2. Significant unmet needs
3. Dependence on informal or subsistence livelihoods
4. Impacted by a BOP penalty
5. Time frame for product development and consumer adoption
6. People at the BOP are brand conscious, but also extremely value-conscious
7. Distribution and transport infrastructure is inefficient
8. Customers at the BOP are risk-averse
9. The BOP markets is connected

➤ *Size of the BOP market and its segments*

The BOP as a global market establishes a total household income of \$5 trillion a year. "Asia has by far the largest BOP market: 2.86 billion people with income of \$3.47 trillion. This BOP market represents 83% of the region`s population and 42% of the purchasing power [. . .] Eastern Europe`s \$458 billion BOP market includes 254 million people, 64% of the region`s population, with 36% of the income. In Latin America the BOP market of \$509 billion includes 360 million people, representing 70% of the region`s population but only 28% of total household income [. . .] Africa has a slightly smaller BOP market, at \$429 billion. But the BOP is by far the region`s dominant consumer market, with 71% of purchasing power. It includes 486 million people – 95% of the surveyed population".⁷

The described BOP market ranges widely in size, as shown in figure 3. Water (\$20 billion) as well as information and communication technology (ICT \$51 billion) are relatively small segments.⁸ Other segments are medium scale: health (\$158 billion), transportation (\$179 billion), housing (\$332 billion) and energy (\$433 billion). Some segments, such as food (\$2.895 billion), are very large.

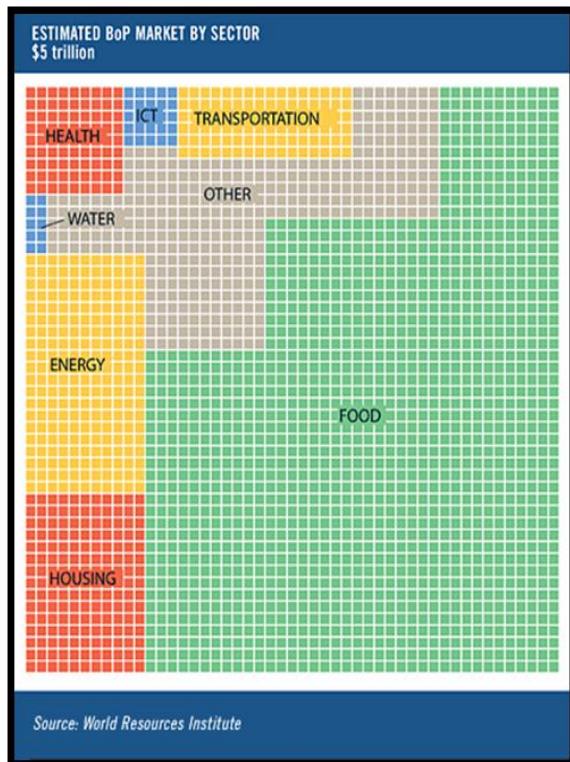


Figure 3: BOP market by sector (Source : World Resources Institute, 2007)

⁷ World Resource Institute (2007), p.9.

⁸ It could be that the ICT market is twice as big as measured, because of rapid growth.

➤ *Significant unmet needs*

People at the BOP often have no more than what is absolutely necessary. They have no bank account and therefore no access to financial services. Furthermore, many lack access to sanitation services, basic health, water and electricity.⁹ So there is a great opportunity for companies, because there are so many needs that can be served.

➤ *Dependence on informal or subsistence livelihoods*

The BOP characterizes a lack of good access to markets to sell labour, handicrafts or crops. For that reason, people have to deal with local employers or middlemen. "As subsistence and small-scale farmers and fishermen, they are uniquely vulnerable to destruction of the natural resources they depend on but are powerless to protect. In effect, informality and subsistence are poverty traps".¹⁰

➤ *Impacted by a BOP penalty*

It is normal that people at the BOP pay higher prices for goods than other consumers in the pyramid, namely "in cash or in the effort they must expend to obtain them – and they often receive lower quality as well".¹¹ They often need to walk a long way to get their needs.

➤ *Time frame for product development and consumer adoption*

Timing has a different dimension for individuals living at the BOP. "Their way of living also has far less variation, especially in rural environments. That, coupled with the poor access to communications in some areas means that consumer adoption cycles can take longer than in the developed market."¹² For that reason, firms need to be patient if they operate in the BOP market, because it takes more time to get the product to the consumer.

➤ *People at the BOP are brand conscious, but also extremely value-conscious*

The common believe that people at the BOP are not brand savvy is wrong. They aspire to have brands because they represent high quality, but also a lifestyle they

⁹ World Resource Institute (2007).

¹⁰ World Resource Institute (2007), p.5.

¹¹ World Resource Institute (2007), p.5.

¹² Kemanian (2007), p.3.

like to achieve.¹³ “They don`t have the buying power to consume more at a time but they too aspire to use good shampoos and cosmetics and bulk of these products are bought by them in sachets from time to time”.¹⁴ Because of the fact, that people at the BOP don`t have a lot of money, they try to find the best option for their money.

➤ *Distribution and transport infrastructure is inefficient*

Fluidity of business is hindered by the insufficient quality of roads and infrastructure. Furthermore, access to remote areas is problematic.¹⁵ So it can be extremely difficult to reach costumers. In Nicaragua for example, most coffee farmers live away from the villages in the hills. Furthermore, they don`t leave their farms often.

➤ *Customers at the BOP are risk-averse*

Because of their financial situation, people at the BOP run a real risk if they invest in something. They try to minimize their risk and therefore don`t buy a product just like that. They read up on a product until they know everything about it and feel sure that they minimized their risk, because a bad investment can destroy their lives.

➤ *The BOP markets is connected*

“China and India are the fastest growing cell phone markets in the world. At the end of 2003, China had installed handset base of 250 million, whilst India had 30 million and Brazil 40 million”.¹⁶ So there are ways to reach this kind of costumers, even if it is difficult.

After characterizing the different challenges of the BOP, three major challenges will be defined with regard to the field study in Nicaragua. The *first challenge* is the cultural distance between corporate decision makers and the poor. “Because of this difference in world view, corporate leaders may overlook crucial business opportunities in low-income markets if they do not proactively transform their organizational culture”.¹⁷ The *second challenge* is a serious lack of infrastructure that causes difficulties for operating at the BOP. Furthermore, there is a lack of formal institutions. “This means that company success may rely on local leaders and

¹³ Kemanian (2007).

¹⁴ Agarwal (2008), p.5.

¹⁵ Kemanian (2007).


¹⁶ Kemanian (2007)

¹⁷ Rangan (2007), p.1.

community agents who have the social capital to bring people together and build incentives for everyone to play by the rules.”¹⁸ Therefore, social capital is a key to overcoming challenges related to weak economic institutions. The *third challenge* is that firms find ways to bring BOP activities to scale and sustainability within the roles dictated by traditional targets.¹⁹

2.3 Advantages of the BOP

After discussing the different characters and challenges of the BOP market, this paragraph will focus on the different advantages for firms who want to operate in the BOP market. There are five central advantages at the BOP:

- 
1. Size
 2. Rapid growth
 3. Less competitive environment
 4. Opportunities for cost-saving
 5. Opportunities for innovation

➤ *Size*

As mentioned before, four billion consumers with a purchasing power of \$5 trillion form the BOP markets. However, a lot of products are not available because only a few firms have paid attention to this kind of market in the past. Even though there are low profit margins, the unit sales can be high due to the high number of consumers. Therefore, volume drives profits rather than high margins.²⁰

➤ *Rapid growth*

“The BOP market represents a vast market today and an opportunity for new sources of growth in the future”.²¹ Several African countries, but also Asia, Latin America and Eastern Europe are growing fast.²²

¹⁸ Rangan (2007), p.2.

¹⁹ Rangan (2007).

²⁰ Dansk Industri (2007).

²¹ Dansk Industri (2007), p.20.

➤ *Less competitive environment*

Most companies are oriented towards the consumers in the top segments, but these markets are marked by intense competition. “In contrast the BOP markets are highly underserved and make up a “Blue Ocean” of business possibilities in an environment characterized by limited supply competition.”²³ As figure 4 shows, markets can be divided into the “Blue Oceans” and “Red Oceans”. “The Red Oceans represent the well known market space and thus represent all of today`s existing industries. In the Red Oceans, companies fight to exceed their rivals in order to grab a greater share of the existing demand. [. . .] In the Blue Oceans, there is no competition and companies have a huge opportunity to create demand rather than fight over it”.²⁴

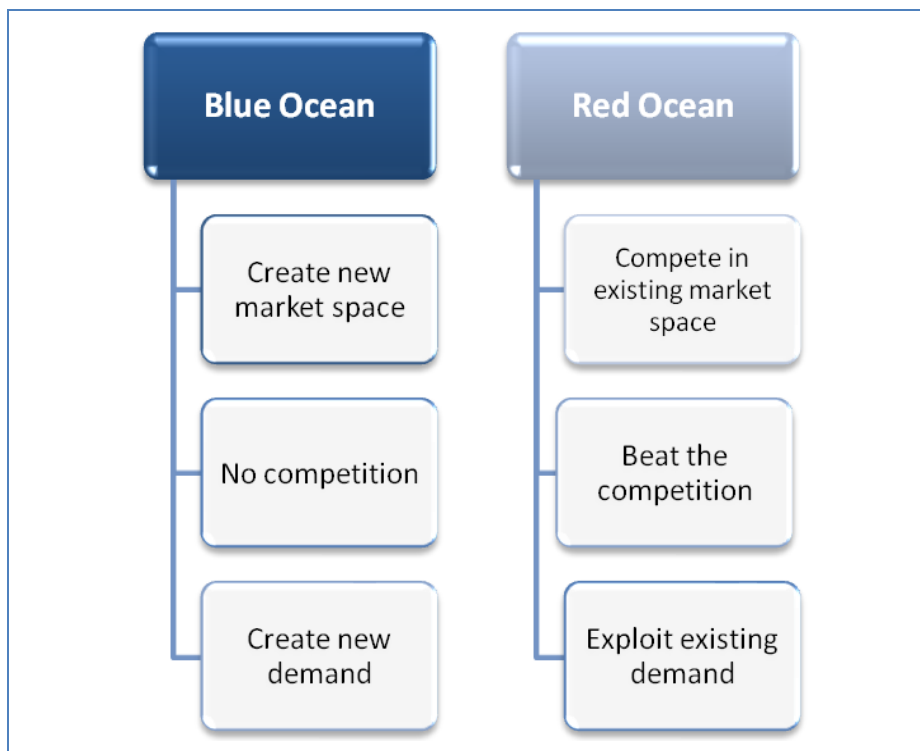


Figure 4: Blue and red ocean (Source : Dansk Industri, 2007)

➤ *Opportunities for cost-saving*

Because of the fact that cost structures are lower in developing markets, there are a lot of cost-saving opportunities in the BOP market. “Producing locally, using local suppliers and distributors can lower the production costs substantially”.²⁵

²² Dansk Industri (2007).

²³ Dansk Industri (2007), p.21.

²⁴ Dansk Industri (2007), p.20.

²⁵ Dansk Industri (2007), p.21.

➤ *Opportunities for innovation*

Products for the BOP call for innovations, therefore companies need to develop new products, “which potentially can act as incubator of new technologies and products in developed markets”.²⁶

²⁶ Danks Industri (2007), p.21.

3 Life of people at the BOP

After characterizing the BOP market, this part will show different aspects of the life of people at the BOP. Firms need to know exactly how actually a person lives on less than one dollar per day in order to being successful in this area. For demonstrating how their daily lives looks like, I will draw on a survey made by the Massachusetts Institute of Technology, Department of Economics. They prepared survey data from 13 countries²⁷ to show the economic lives of people at the BOP.

3.1 How people at the BOP spend their money

“A common image of the extremely poor is that they do not get to make many real choices. Indeed there must be some people who work as hard as they can – which may not be particularly hard, because they are underfed and weak – and earn barely enough to cover their basic needs which they always try to fulfill in the least expensive way [. . . .] A poor person was by definition someone without enough to eat”.²⁸ But the survey shows that persons who have no more than a dollar per day don’t use every penny for buying calories. “Among our 13 countries, food typically represents from 56 to 78 percent among rural households and 56 to 74 percent in urban area”.²⁹ A significant amount of money is spent on alcohol and tobacco besides food. But even more surprisingly is the fact that spending money for celebrations is a very important part of the budget. “In Udaipur, over the course of the previous year, more than 99 percent of the extremely poor households spent money on a wedding, a funeral, or a religious festival”.³⁰ On the other side, they don’t spend a lot of money for entertainment such as movies and theatre. To own a radio is not very uncommon. For example, 60 percent of Nicaraguans and Guatemalans and above 70 percent in South Africans and Peruvians have a radio. There is a contrast between Nicaragua and Udaipur. In Nicaragua, 57 percent of the households have a radio, 21 percent own a television, but just a few spend a lot of money for festivals.

²⁷ Countries: Cote d’Ivoire, Guatemala, India-Hyderabad, India-Udapiur, Indonesia, Mexico Nicaragua, Pakistan, Panama, Papua New Guinea, Peru, South Africa, Tanzania & Timor Leste

²⁸ Banerjee & Duflo (2006), p.4.

²⁹ Banerjee & Duflo (2006), p.5.

³⁰ Banerjee & Duflo (2006), p.5.

Summarized could be said that households at the BOP could spend more money on food as they do; it depends on what they spend on alcohol, tobacco and festivals. “Even the extremely poor do not seem to be as hungry for additional calories as one might expect. Deaton and Subramanian (1996) found that even for the poorest, a 1 percent increase on overall expenditure translates into about two-thirds of a percent increase in total food expenditure of a poor family. Remarkably, the elasticity is not very different for the poorest individuals in the sample and the richest”.³¹

3.2 How people at the BOP earn their money

For understanding the buying behaviour of people at the BOP, one needs to know also how they earn their money. That way, a firm can find out where the risk is located for people at the BOP, which influences their buying behaviour too. “All over the world, a substantial fraction of the poor act as entrepreneurs in the sense of raising the capital, carrying out the investment, and being the full residual claimants for the earnings”.³² In Nicaragua, between 47 and 52 percent operate a non-agricultural business. It is very common that many people at the BOP have multiple occupations. Furthermore, there exists a lack of specialization: “They do some agriculture, but not to the point where it would afford them a full living (for example by buying/renting/sharecropping more land)”.³³ Many of these businesses are too small for being efficient. “Risk spreading is clearly one reason why the poor, who might find risk especially hard to bear, tend not to be too specialized in any one occupation”.³⁴

³¹ Banerjee & Duflo (2006), p.6.

³² Banerjee & Duflo (2006), p.10.

³³ Banerjee & Duflo (2006), p.12.

³⁴ Banerjee & Duflo (2006), p.20.

4 General information about Nicaragua and the project

After completing the theoretical part, this chapter presents the background information for the field study based on a survey of low cost drip irrigation for coffee and other crops in Nicaragua. For more detailed information, the whole report of the field study can be found in the Appendix.

4.1 Nicaragua and coffee

In the mid 1800s, coffee came to Nicaragua. Since then, this resource plays an important role in the economy of this country. “Coffee has been an engine for Nicaragua`s national economic development process. It is among the nation`s primary sources of foreign exchange and provides the economic backbone for thousands of rural communities.”³⁵ There exist more than 40,000 coffee farmers. 95 percent of these coffee farmers are micro and small-scale producers and they are dependent on their revenues from coffee. Thereby, 76 percent of the estimated 22,724 coffee producers have five manzanas (0.7 hectares) or less³⁶, as shown in table



Figure 5: Nicaragua (Source : Equal Exchange, 2009)

2. “In the late 1990s, coffee annually contributed US\$140 million to the national economy and provided the equivalent of 280,000 permanent agricultural jobs”.³⁷

³⁵ Equal Exchange (2009), online.

³⁶ IDE (dateless(a)), p.3.

³⁷ Equal Exchange (2009), online.

Farm Size (manzanas)	#of Farms	% of total farm count	Total area (manzanas)	% of total area
1.0 to 2.5	9,925	43.7%	18,502	10.7%
2.5 to 5.00	7,349	32.3%	27,257	15.8%
5.0 to10.0	3,031	13.3%	22,594	13.1%
10.0 to 20.0	1,161	5.1%	17,195	10.0%
> 20.0	1,258	5.5%	86,372	50.2%
Total	22,724	100.0%	171,920	100.0%

Table 1: Smallholder Farmers in Nicaragua (Source: IDE, dateless(a))

“Coffee accounts for an estimated 30% of the foreign currency generated from agricultural exports”.³⁸ During the coffee crisis, when prices crashed in 1999-2003, three big banks collapsed due to their high levels of coffee debt and other scandals. “It is difficult to isolate the impacts of the coffee crisis from the series of negative shocks (Hurricane Mitch, drought, declining commodity prices) that continue to affect Central America. In Nicaragua, the 1999-2001 droughts added further stress to low coffee prices”.³⁹ During the first two years of the crisis, Nicaraguan labourers lost over 4, 5 million days of work. Hundreds of families lost all their money, left their homes and went to the major highway to Managua, where they lived in miserable conditions. “After three years of these annual marches the rural workers’ union won small plots of land for more than 3000 landless coffee farm-worker families. This bottom-up land-reform process and historic agreement is known as El Acuerdo de las Tunas, named for the school along the Pan American Highway where the agreement was finally signed”.⁴⁰

A very important development in Nicaragua related to coffee is the cooperative movement. The first cooperative in Wiwilí was formed by Augusto Cesar Sandino in the 1920s, “and later the Somoza dictatorships occasionally promoted cooperatives to maintain elite control of the agro-export sector and fend off the risks of communism”.⁴¹ In the early 1970s there were only 11 cooperatives. The revolution in Nicaragua in 1979 and the Sandinista government, which lasted from 1980 to 1990, influenced many of the cooperatives. “During this time, cooperatives were given land that was redistributed to those who were once farm workers”.⁴² From 1993 to 2001, the total number of agricultural cooperatives decreased by 40%. They realized that

³⁸ Equal Exchange (2009), online.

³⁹ Equal Exchange (2009), online.

⁴⁰ Equal Exchange (2009), online.

⁴¹ Equal Exchange (2009), online.

⁴² Equal Exchange (2009), online.

they need to unite more for focusing on commercialization practices and for being prepared for the increasing demand of the changing coffee economy, as they came in contact with European Fair Trade. “These newer export-oriented cooperative unions included specialized agricultural processing infrastructure, strong quality assurance programs, and highly trained professional staff. They have developed this business component of their organizations while simultaneously strengthening their capacity to support education, housing and environmental projects among their members”.⁴³

Many cooperatives use their money from Fair Trade premiums for creating social programs and reinvest in their own organization. For instance, they built their own dry processing plants. The advantage of this process is that they can cut down on production costs and have better control of quality. “Many of the cooperatives have established educational scholarship programs for the members and their children. Others have used their Fair Trade premiums to create Women’s Savings and Loans Programs, and to support income diversification projects including agro-ecotourism programs and beekeeping”⁴⁴.

4.2 A public private partnership

IDE (International Development Enterprises) is an international NGO and has developed low cost drip irrigation systems which are sold by half of the cost of conventional systems. For its project in Nicaragua, IDE made a public private partnership with Nestlé SA⁴⁵, the ECOM Group⁴⁶ and the Rainforest Alliance⁴⁷. “The purpose of this project is to test, introduce and monitor low cost drip irrigation in coffee in Central America and embed this technology into socially, environmentally and economically sustainable certified coffee value chains”.⁴⁸ It is the main goal to increase the coffee production and therefore the income by selling low-cost micro-

⁴³ Equal Exchange (2009), online.

⁴⁴ Equal Exchange (2009), online.

⁴⁵ NESTEC Ltd, the technical arm of Nestlé S.A., one of the largest coffee roasters.

⁴⁶ ECOM Group is the second largest coffee trading house and counts with a very vast infrastructure of technical support.

⁴⁷ Rainforest Alliance is a US-based NGO and works to conserve biodiversity and ensure sustainable livelihoods.

⁴⁸ IDE (dateless(a)), p.1.

irrigation technologies, further improve agronomic practices and link them to certified quality coffee markets.

4.3 Low cost drip technology

“Scarcity of water is a major constraint faced by farmers, big and small, across the world”.⁴⁹ Often there is not enough water available for irrigation, for that reason farmers need to reduce or stop cultivation. This has a very bad effect on their daily life, because they really depend on their earning from agriculture. Enormous quantities of water are required for conventional flood irrigation. Furthermore, the conventional systems wastes a significant portion of the water applied. The development of drip irrigation systems is linked to research on efficient water application. “In drip irrigation systems, water flows through plastic pipes laid across the field and is applied directly at the root of plants through drippers [. . .] It also inhibits the growth of weeds in the fields by restricting water supply to intended plants, thus leading to substantial savings of labour and expenses on inter-culture. Additionally, drip systems save power as more area or plants can be irrigated in a short span of time compared to flood irrigation”.⁵⁰

When IDE started working in India, they recognized that farmers were using Pepsee Drip. Some candy manufactures in Madhya Pradesh, a state in India, begun to sell liquid candy juices in plastic tubes, which are very small, thin and transparent. “Farmers quickly adopted this tubing for drip irrigation – they started by puncturing holes in these tubes and laying them out in fields like laterals of a drip system. These were called Pepsee Drip, a name derived from the candy juice sold in the tube sections. By applying scarce water resources conservatively, the Pepsee Drip could save the plants in the fields from drying up during pre-monsoon days”⁵¹.

IDE has realized the need of people for irrigation and has developed low cost drip irrigation systems in India and Nepal. Currently, they are transferring the technology to Central America and adapting it to the specific conditions in Nicaragua. In this country, the farms are located on steep hills, which creates a necessity for

⁴⁹ IDE (dateless), p.3.

⁵⁰ DIE (dateless), p.3.

⁵¹ DIE (dateless), p.5.

developing simple pressure control systems. Figure 6 shows a typical drip irrigation system for one hectare.

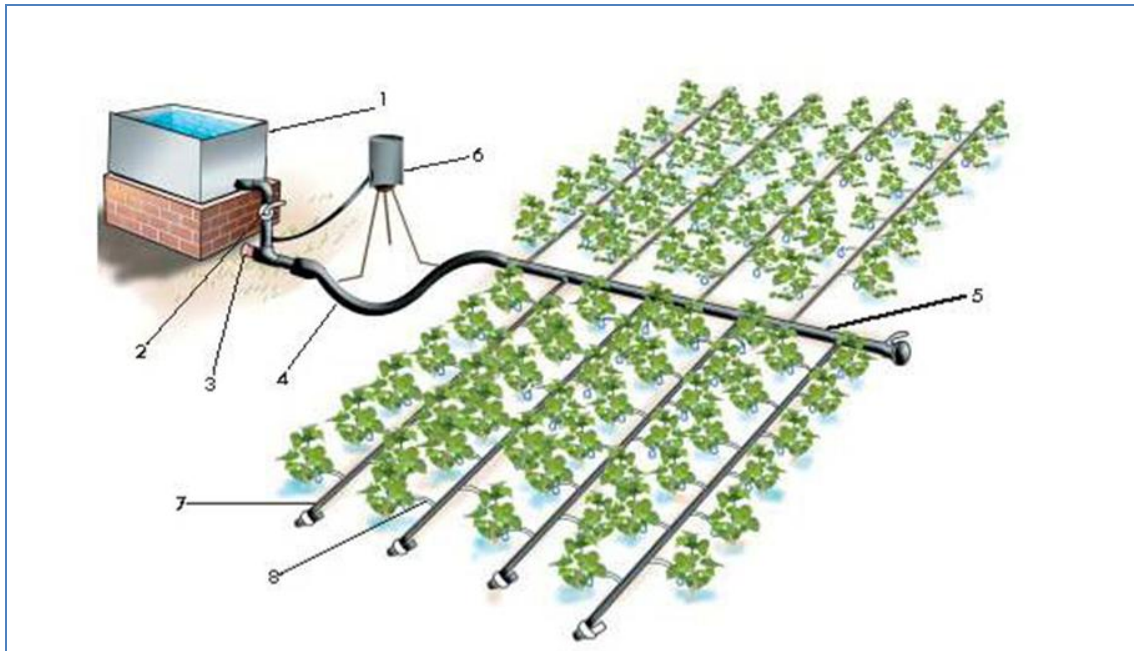


Figure 6: Technical description of IDEal Goteo (Source: IDE, dateless)

1. **Water source:** Ideal drip works with gravity pressure produced from a spring tank that is a couple of meters higher than the coffee field being irrigated.
2. **Control Valve:** It is made from plastic or metal. It is used to regulate the flow of water in the system.
3. **Filter:** The use of micro-tube as emitter in the IDEal Drip System has minimised the chances of clogging and, therefore, a low-cost in-line screen filter is efficient enough to make the system free from clogging.
4. **Mainline:** Poly vinyl chloride (PVC) or Polyethylene (PE) pipe to convey water from the source to the sub-main.
5. **Sub-main:** To convey water from screen filter to the lateral tubing.
6. **Fertigation:** It is optional for the farmer to use water soluble fertiliser through the IDEal drip irrigation system.
7. **Laterals:** For providing water to each row of coffee trees.
8. **Micro-tube:** Micro-tubes must be installed in the field when the drip-tape is inflated and should be inserted 10 cm inside the lateral tubing with their inlet ends pointing downstream.
9. **Lateral connector fitting:** are used to connect lateral tubing to the sub-mains.⁵²

⁵² IDE (2006), p.9-12.

5 Bottom of the pyramid marketing

After providing some general information on the field study; this paragraph will focus on the BOP marketing. If a firm decides to sell products to the BOP, they need to keep in mind that they have to create a totally different marketing approach. This chapter gives an overview on marketing at the BOP by mainly explain the different parts of a social marketing plan. With the concept of “marketing”, the following definition is meant: “Marketing is a highly specialized activity. It deals with the problem of regulating the level, timing, and character of demand for one or more products of a firm”.⁵³ If firms focus on developing countries, they need to bear in mind that the following characteristics are important related to marketing at the BOP, as defined by Kaynak (1982):

1. A viable monetary system where money rather than goods is used to conduct transactions
2. A large amount of unskilled and semi-skilled labor and little skilled or highly educated labor
3. Unemployment
4. A very small, unsophisticated, capital goods industry that has limited technological capabilities
5. Little capital equipment in operation
6. A small but growing middle class in at least one urban area
7. The desire to increase output per capita
8. Opposition to the investment of foreign capital in the channel of distribution
9. Businessmen who are attempting to maximize profits with consumption as the ultimate goal of all economic activity.

“In developed countries, marketing focuses on creating new needs and wants, whereas in LDCs, marketing is much more than that. Modern marketing for LDCs is a

⁵³ Kaynak (1982), p.1.

system of concepts, tools and skills that enables managers to match the capabilities of organizations to the needs of society".⁵⁴ Many authors tried to describe the marketing environment for undeveloped countries. One of these descriptions was made by Kaynak (1982) and is presented in figure 7. The inner circle presents the controllable elements, the outer circle describes the environmental elements against which the marketer must contend. In creating the marketing plan, namely the inner circle, a company should think out of the box and at the same time, bear in mind the relation with the outer circle for being successful.



Figure 7: Marketing environment (Source: Kaynak, 1982)

5.1 Social Marketing

As Philip Kotler and Gerald Zaltman wrote about the existence of some marketing principles that can be used to sell not only products and services but also ideas, attitudes and behaviors, social marketing became a discipline. Kotler and Andreasen define social marketing as "differing from other areas of marketing only with respect to the objectives of the marketer and his or her organization. Social marketing seeks

⁵⁴ Kaynak (1982), p.21.

to influence social behaviors not to benefit the marketer, but to benefit the target audience and the general society."⁵⁵ French & Blair-Stevens defined this kind of marketing as followings: "Social marketing is the systematic application of marketing, alongside other concepts and techniques, to achieve specific behavioral goals, for a social good".⁵⁶ The National Social Marketing Centre identified six important key features of a social marketing:

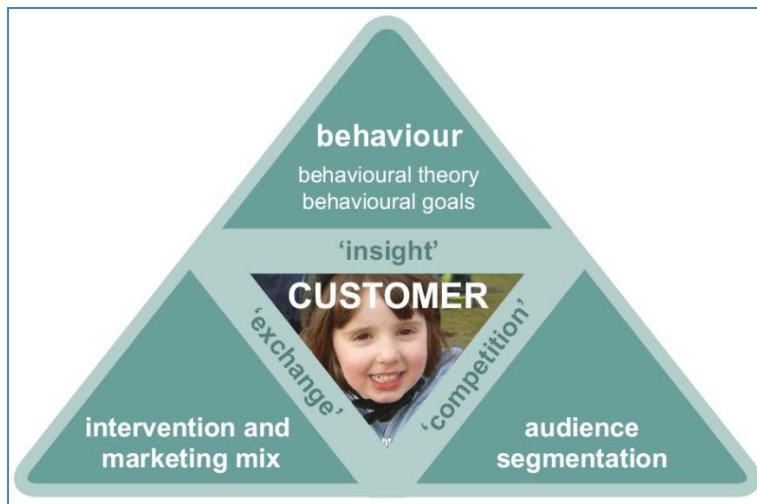


Figure 8: Customer triangle model (Source: NSM Centre, 2007)

- **“Customer or consumer orientation** - A strong ‘customer’ orientation with importance attached to understanding where the customer is starting from, their knowledge, attitudes and beliefs, along with the social context in which they live and work.
- **Behaviour and behavioural goals** - Clear focus on understanding existing behaviour and key influences upon it, alongside developing clear behavioural goals. These can be divided into actionable and measurable steps or stages, phased over time.
- **'Intervention mix' and 'marketing mix'** - Using a mix of different interventions or methods to achieve a particular behavioural goal. When used at the strategic level this is commonly referred to as the 'intervention mix', and when used operationally it is described as the 'marketing mix'.
- **Audience segmentation** - Clarity of audience focus using audience segmentation to target effectively.

⁵⁵ Weinreich (2006), online.

⁵⁶ National Social Marketing Centre (2007), online.

- **‘Exchange’** – Use of the ‘exchange’ concept – understanding what is being expected of people, and the real cost to them.
- **‘Competition’** – Use of the ‘competition’ concept. This means understanding factors that impact on people and that compete for their attention and time”.⁵⁷

“The ultimate effectiveness and success of social marketing rests on whether it is possible to demonstrate direct impact on behavior. It is this feature that sets it apart from other communication or awareness raising approaches, where the main focus is on highlighting information and helping people to understand it”.⁵⁸ Normally there are four Ps regarding the Marketing Mix: Product, Price, Placement and Promotion. Social marketing adds a few more P`s. This master thesis will focus on three additional P`s: Publics, Partnership and Purse Strings.

- **Product:**

“The social marketing "product" is not necessarily a physical offering. A continuum of products exists, ranging from tangible, physical products (e.g., condoms), to services (e.g., medical exams), practices (e.g., breastfeeding, ORT or eating a heart-healthy diet) and finally, more intangible ideas (e.g., environmental protection)”.⁵⁹ In order to find a sellable product, consumers must realize that they have a problem and that the offered product is a good solution for that kind of problem. The research focus lies on the discovery of the consumers' perceptions of the problem and the product, and to find out how important it is for the customer to find a solution for the problem.⁶⁰

- **Price:**

The costs the costumer needs to raise to obtain the product can be monetary, or the consumer needs to give up intangibles, such as effort, time or risk. If the costumer perceives the benefits as greater than their costs, he will probably decide to adopt the product. A company needs to consider many issues by setting the price. If the price is too low or the product will be provided free of charge, the consumer assumes

⁵⁷ National Social Marketing Centre (2007), online.

⁵⁸ National Social Marketing Centre (2007), online.

⁵⁹ Weinreich (2006), online.

⁶⁰ Weinreich (2006).

that the product is low in quality. On the other side, if the price is too high, some will not be able to afford it. "Social marketers must balance these considerations, and often end up charging at least a nominal fee to increase perceptions of quality and to confer a sense of "dignity" to the transaction".⁶¹

- **Placement:**

The supply chain includes everything, like the warehouse, trucks, sale force, retailers or a place where the product is sold. Regarding the social marketing, the decisions about the channels through which costumers are reached with training and information is also included. This aspect involves shopping malls, mass media vehicles or in-home demonstrations. "Another element of place is deciding how to ensure accessibility of the offering and quality of the service delivery. By determining the activities and habits of the target audience, as well as their experience and satisfaction with the existing delivery system, researchers can pinpoint the most ideal means of distribution for the offering."⁶²

- **Promotion:**

"Promotion consists of the integrated use of advertising, public relations, promotions, media advocacy, personal selling and entertainment vehicles".⁶³ A sustaining demand for the product should be created. Promotion not only includes announcements, but also media events, "Tupperware"-style parties or in-store displays. For social marketing it is important to talk with people to find out in which way they can be reached best.

- **Publics:**

Social marketing needs to address many different audiences in order to be successful. Thereby, it includes external and internal groups. "External publics include the target audience, secondary audiences, policymakers, and gatekeepers,

⁶¹ Weinreich (2006), online.

⁶² Weinreich (2006), online.

⁶³ Weinreich (2006), online.

while the internal publics are those who are involved in some way with either approval or implementation of the program”.⁶⁴

- **Partnership:**

Targets of BOP markets are often so complex that a company cannot do the whole work by itself. The firm needs to team up with other organizations for being effective. Therefore, companies need to find out which organizations are working in the same field and have similar goals.

- **Pursue Strings:**

For a social marketing plan, firms should work together with foundations, governmental grants or donations for making sure that people at the BOP can afford the product. Firms need to think about where they will get the money to create a successful social marketing plan.

5.2 Marketing Plan for Nicaragua

As seen before, totally new strategies are needed in order to define a marketing plan for a product at the BOP. It is a real challenge to create a marketing plan for low cost drip irrigation in Nicaragua. For serving these challenges in an appropriate way, the field search focused on three main factors, as demonstrated in figure 9: Supply chain, financial aid and promotion. After studying the situation in Nicaragua, if these three challenges can be changed in opportunities, the IDE project will be successful.

⁶⁴ Weinreich (2006), online.



Figure 9: The three challenging factors (Source: own figure)

The focus lies on these three challenges for the following reasons: Because of the fact that a company needs to make sure that the product will reach small farmers, the supply chain is very important, If a firm doesn't find ways to reach the consumer at the BOP, they can't be successful, even if they have the best product. Furthermore without financial aid, however, the farmers cannot afford to buy the system, even though they like to buy it. In addition, firms have to come up with adequate promotion strategies in order to reach the target costumers in an efficient way. For that reason they need to learn to think out of the box. These three factors will require special attention and may even seem to involve some risk. More importantly, however, they offer great opportunities for IDE to be successful.

5.2.1 Results from the interviews

In order to show how these challenges can be turned into opportunities, the most interesting facts drawn from interviews with farmers, retailers and representatives of financial institutions will be summarized. Figure 10 shows with whom and how many interviews were made in Nicaragua. Due to these peoples' immediate contact with daily problems and expectations, the following summary contains important information about how to deal with the three challenging factors.

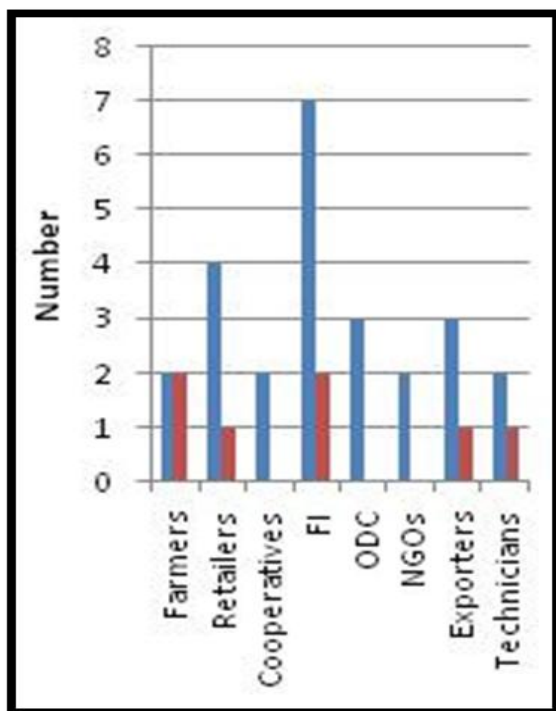


Figure 10: Interviews in Nicaragua (Source: own figure)

1. Farmers: Farmers are very satisfied with the system and do not encounter any problems using it. Regarding promotion, they find it very important to have a look at the irrigation system. Therefore, demonstrations need to be installed. In their spare time, the farmers like to stay with their families and friends, to do sports and go to church. These locations seem to be good places to do product marketing.

2. Retailers: Other retailers' drip irrigation systems are more expensive than the IDE system. The cheapest one costs at least 900 dollars. It is important to keep in mind that up to now, it has not been customary to sell irrigation systems to small farmers. If retailers sell those systems to small farmers, they do so with the help of financial institutions. All of the retailers have the same promotion strategy: They work together with cooperatives and NGOs, as it is too expensive and very difficult for them to reach small farmers through their own promotion. However, retailers are very interested in the IDE system and some of them would like to sell the system in their shops, too.

3. Financial Institutions: Banks have been changing their strategy for some time so that small farmers are now part of their target group. Five institutions are interested in working together with IDE to help farmers to get credit. In order to get credit, farmers

need to prove that they are the owners of their land, that they have some experience as a farmer and a moral solvency. Usually, farmers pay the credit back as soon as they have got money, for example after the harvest.

5.2.2 The four Ps

Based on the interviews and field research, a marketing plan has been set up. In this chapter, various marketing activities regarding product, price, placement and promotion are proposed. The three added P`s of the social marketing, publics, partnerships and pursue strings, will be integrated in the description of the 4 P`s.



Figure 11: The four P's in Marketing (Source: own figure)

5.2.2.1 Product

Talking about product policy, I would first of all like to focus on the quality of the product. As we have seen in chapter 2.2, people at the BOP are brand conscious. Even if nobody – neither farmers nor technicians – came up with any problems with the IDE drip irrigation system, IDE needs to make sure that the product is of high quality if they start to promote their product in Nicaragua. Poor quality in the product creates a great risk. As the interviews have shown, farmers need to see the system before buying it. If one system is not working very well, other farmers will hear about the problems and not buy the system. To change minds afterwards is very difficult.

That is why a quality check for each product is of great importance to guarantee a product of high quality. The ECOM technicians, who will only work for IDE, might be able to conduct those tests.

If the quality is guaranteed, IDE needs to create a strong brand. It is not sufficient to have a product with high quality if nobody knows the product. Up to now, IDE is not very well known in Nicaragua. It is important that people have a picture in mind when hearing somebody talking about the product of IDE. The goal is that people associate IDE with high quality so that they have a positive image of the product.

In order to create a strong brand, a helpful instrument is to divide the brand into a technical image and an emotional image. The technical image is made up of the product features (hardware), whereas the emotional image consists of the services regarding the product (software).

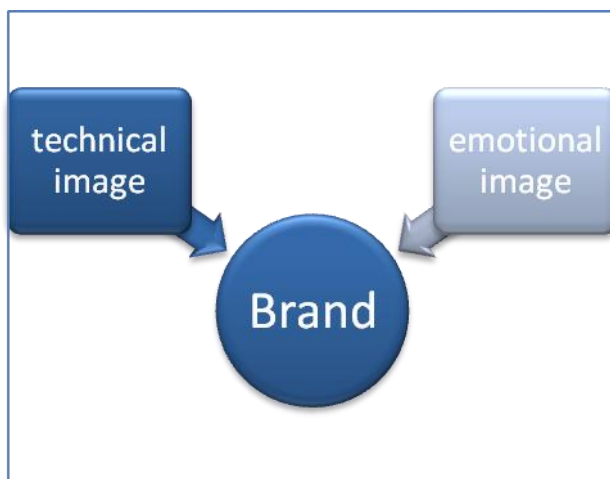


Figure 12: Creating a brand (Source: Meffert, 2000)

The technical image, on the one hand, is created by the product itself (primary performance), whereas the emotional image is created by services (secondary performance). A strong technical image can be achieved by ensuring the high quality of the product. In order to see its quality, potential customers need to be able to test a product. For that reason, it is very important that demos are being installed. The emotional image, on the other hand, is always combined with the product (as shown in figure 6). IDE should offer value-added services, i.e. services that combine the

high quality of the product with the creation of an additional value for the costumers. Both images are very important and need to be integrated in the marketing plan.

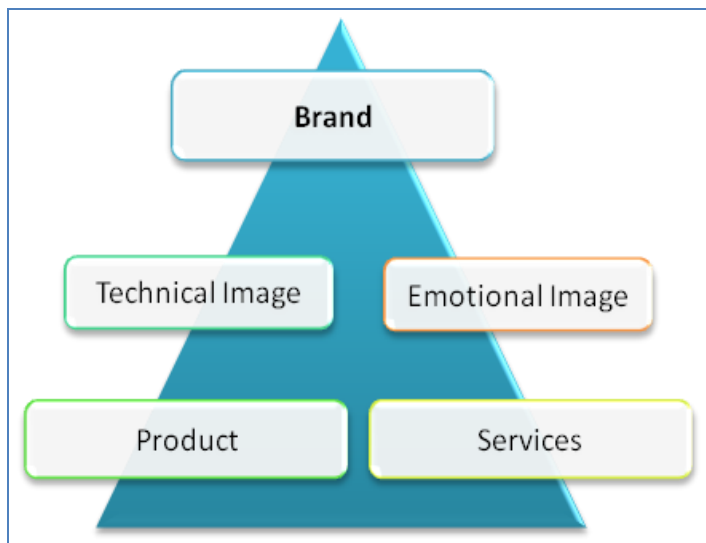


Figure 13: Creating a technical- and emotional image (Source: Meffert, 2000)

Figure 13 gives an overview of the services which could be provided, within the scope of primary and secondary performance. The individual parts of figure 13 will be discussed later in more detail. A few comments should be made regarding the pink boxes on the left side of figure 13, as they belong to the product policy. The IDE drip irrigation system is of high quality. This is why it might be a good idea to give a warranty of several years on the IDE products. Because of the fact that risk reduction is a very important factor for small farmers. If IDE can give them a warranty, it is easier for them to make this investment, because they know that if something is wrong with the product, a new one is guaranteed and if they got a credit to buy the system, they can make sure that the system will work for the whole time they need to pay the credit back.

		Primary Performance	
		Product	Service
Secondary Performance	Product	All parts of the product	Manual T-shirts/ hats Demos
	Service	Warranty Product insurance Technical customer service	Financial aid Sport events

Another service IDE might want to offer is product insurance. That way, the farmers would not have to take any risk. Most importantly, IDE should provide a technical customer service at any time, in order to solve problems in a very short time and systems are not destroyed by false handling.

5.2.2.2 Price

Regarding the price, IDE assumes cost leadership, as shown in figure 7. The four most significant sellers of drip irrigation have higher prices for low cost drip irrigation than IDE.

AMANCO	AQUATEC	R&M	CAMOSA
1,000 – 1,200 dollars	1,400 – 1,800 dollars	900 dollars minimum	1,200 dollars

Table 2: Biggest seller of drip irrigation (Source: own figure)

This raises the question whether or not the irrigation system will be perceived as inferior to other systems. This problem can be avoided by creating a strong brand. On the one hand, the IDE brand has to stand for cost leadership, on the other hand, it has to be associated with high quality. After studying the situation in Nicaragua and Honduras, it can be said that farmers will not perceive a cheaper irrigation system as inferior. If small farmers can see that the system works well, they will be glad to

accept a cheaper price. Furthermore, studies of the bottom of the income pyramid indicate that small customers often prefer cheaper solutions because they have not enough money to buy the expensive product, even though the life cycle of cheaper products may be shorter,. More important for them is quality.

Another price related question is whether or not there should be a discount policy. A discount policy can be very effective and therefore, there should be discount policies for farmers as well as for those selling the system (large and small retailers, cooperatives and NGOs).

Discount policy for farmers: An efficient way to improve sales is to create incentives by encouraging the farmers to tell others about the IDE system. If those other farmers buy a system, the first farmers are entitled to a discount of 10 %. However, this discount should be linked to a deadline, e.g. one year. Mouth-to-mouth propaganda is one of the most important things because of the difficulty to reach people at the BOP and because other farmers can influence friends to buy the system too. This is a very cheap and easy way of propaganda.

Discount policy for retailers: If retailers buy a certain quantity of IDE products, there should be a discount too. However, it is important that IDE has a strict discount policy regarding retailers (for instance 15 % off if they buy 25 systems, 20 % off if they buy 50 systems). This means that not every retailer should profit from another discount policy. Furthermore, retailers should be provided with technical assistance and with promotional material.

In order to push the number of sales, it seems important to adopt a particularly attractive price policy at the very beginning. For instance, farmers only pay 20 % of the price at first and after one year, they pay the rest if they liked the system. That way, also farmers without financial background can use the system. However, giving away the systems for free for one year should be avoided. The farmers need to feel responsible for their system, which can be ensured by the fact that they have to pay at least part of the price. If they don`t feel responsible for the system, they will not handle it very well or for the right purpose. This can be seen by the example of the mosquito protection, which people used as bridal veil.

Regarding the raising of funds, agreements with the different financial institutions are recommended. A good idea would be to arrange a deal so that farmers can pay back the money within a period of two years (so that they could pay back part of the loan after the harvest). It is important to give farmers enough time to pay the credit back. It makes sense to give them the opportunity to buy the credit back after harvest, because then they have money to do that.

5.2.2.3 Placement

One of the three challenging factors is supply chain. IDE needs to make sure that the systems can be installed fast at the right place. Until now, the drip irrigation systems were distributed by ECOM technicians. However, this channel seems to be insufficient in order to reach a great number of costumers.

Furthermore, it has to be kept in mind that technicians do not have any marketing experience. They are not specialized in this area. It is therefore important to make sure that they receive an appropriate marketing training for selling more products. In addition, IDE might want to pay them a commission for each system they sell. As a matter of fact, IDE needs further partners besides the technicians. That`s why IDE needs to find further distribution channels along the lines of the following supply chain:

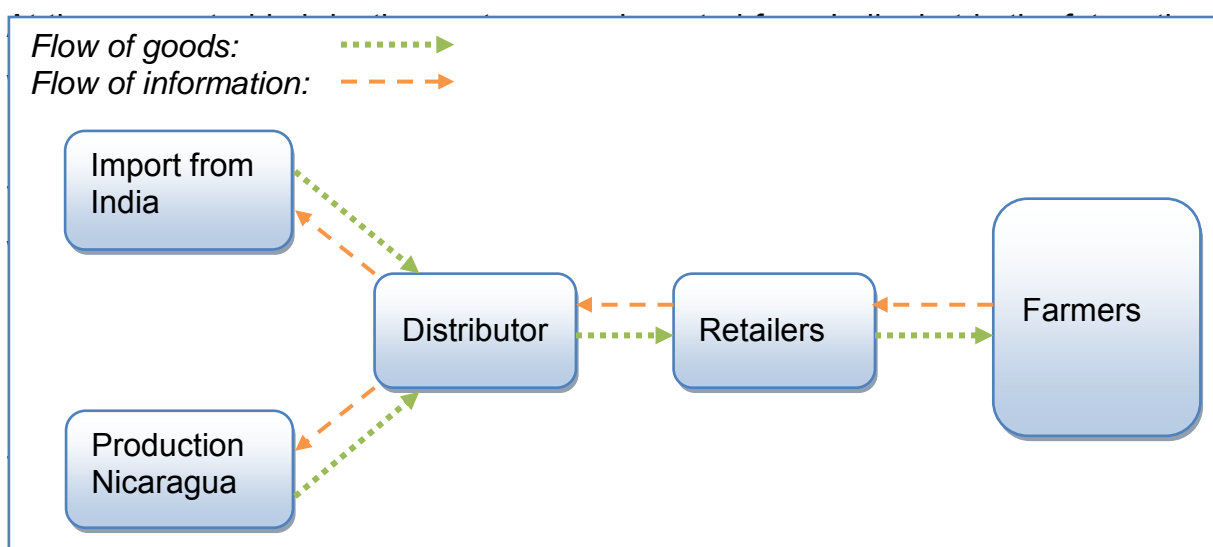


Figure 14: Supply chain (Source: own figure)

Local retailers: The cooperation with small/ local retailers will allow IDE to strengthen its local position. This is very important and should be the most used

supply chain, because local retailers are better connected to small farmers than larger retailers.

NGOs: NGOs can also play an important role. They can demonstrate the irrigation system on their fields and also sell them. NGOs like TECHNOSERVE have many small producers and experienced technicians who can support this.

Cooperatives: They have the opportunity to demonstrate the system and sell it. Cooperatives play a key role in recruiting new costumers. As seen in paragraph 4.1, cooperatives have a long tradition and they play a important role in Nicaragua. Firstly, they are able to tell which of their farmers are potential new costumers. Secondly, they take care of their farmers. In other words, they have the possibility to financially support their farmers. Thirdly, they have meetings with their farmers and can demonstrate the drip irrigation system. The details of their actual involvement will be discussed in the next paragraph "Promotion".

5.2.2.4 Promotion

In order to define a successful marketing strategy, the following three points have to be considered:

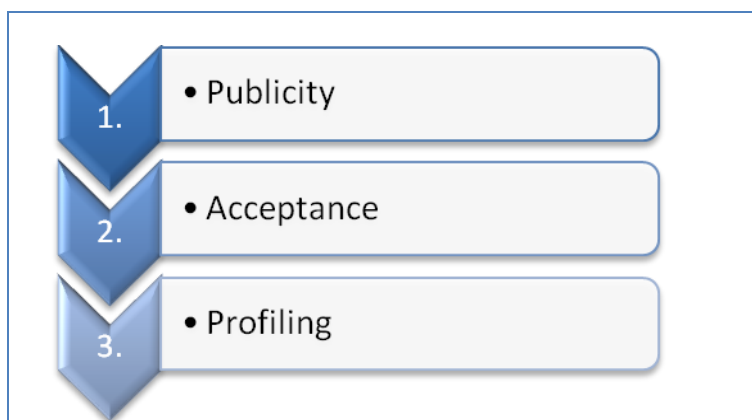


Figure 15: The three steps for a successful promotion (Source: Meffert, 2000)

First of all, the product needs to be advertised (publicity). It then becomes part of the decision-making process of the costumers. Customers realize that this product exists and include it in the decision-making process. Secondly, for being short listed, costumers need to have a positive attitude towards the product (acceptance). It is not sufficient that they know the product; they need to have a positive image of it. Finally,

the product stands out from the competition due to a clear profiling (profiling). That's the moment when the product stands out against the other products.

To achieve these three goals, it is very important to know the exact characteristics of the target market. This involves a close analysis of the customers' buying behavior. Because of the interviews it can be said that buying a drip irrigation system means a high involvement for small farmers. The farmers' investments entail a real risk because of their financial situation. This means that they won't buy an irrigation system just like that. Before buying a system, they will take their time to inform themselves very well. However, each farmer is an expert in his own field, so if he can see that the system works well and brings great benefits, he will certainly buy it.

In order to convince the farmers, it is important to find people or organizations that can influence them, namely people in which the farmers trust. Figure 9 shows the different people and organizations in which the farmers trust: Family and friends, leaders, other farmers, cooperatives, NGOs and ECOM.

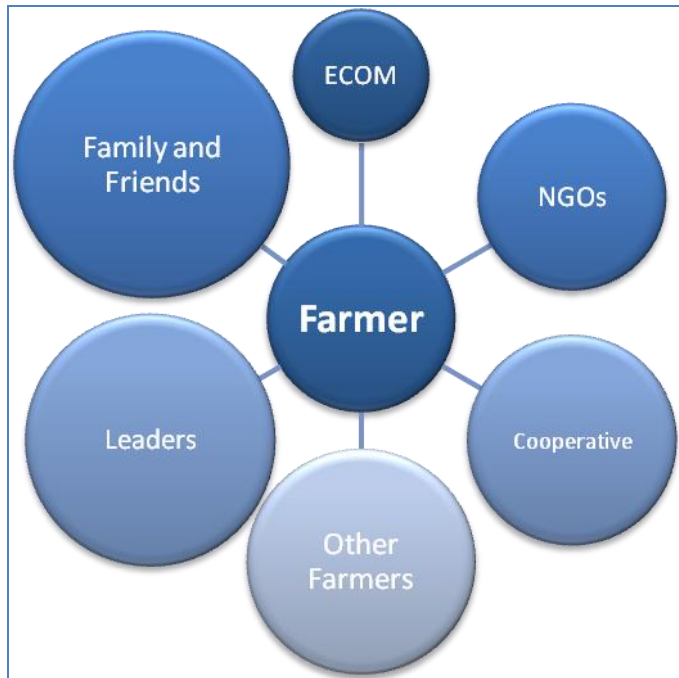


Figure 16: People or organization in which the farmer trust (Source: own figure)

Family and friends: The most important people for the farmers are their families. As farmers are often conservative people who do not like to change their practice, IDE needs to focus on their sons. The generation of their sons is more open-minded and

will probably manage the farm in a few years. The farmers' sons like doing sports, especially football and baseball. They also like going to concerts. IDE could go to sports events and distribute shirts with the IDE logo for free. This idea came up when after realizing that people in Nicaragua always wear shirts with logos from various organisations, such as NGOs or cooperatives. Furthermore, IDE could invite the farmers' sons to come to the village for some fun activities, such as watching a movie. This might be very attractive, as many of them don't have electricity at home and therefore cannot watch movies. At these events, IDE could give a demonstration of the drip irrigation system and hand out manuals to the farmers. The farmers have the chance to take those manuals home and discuss them with their families. The distribution of manuals is an efficient way of doing marketing, due to the fact that farmers do not feel very comfortable if they have to go to the village. It is very important that the manual explains in a very simple way how the system works and that it names its various benefits. There should also be many pictures and illustrations.

Leaders: It is great to being able to help small farmers by selling them a drip irrigation system. However, it is crucial to also include farmers with more hectares, particularly at the beginning. People from ECOM said that if you can find the leader of a region and convince him to use the system, you will sell thousands of products. Of course, leaders can only convince early adaptors. Nevertheless, there is a great number of early adaptors. In order to find out who is the leader of a particular region, IDE needs to work together with cooperatives.

Other farmers: To reach late adaptors, it is important to deal with other farmers too. For this reason it might be a good idea to install demos at some farms and then invite other farmers to visit these installations. That way, the farmers of a particular farm can also share their experience with their visitors. Their visitors will be more convinced if it is another producer who does the promotion. Another interesting option would be the installation of a billboard in front of a farm, so that other farmers can see that the owner of that particular farm works with the IDE drip irrigation system. It might be useful to indicate the owner's postal address/phone number (so that he can be called for more information) and mention some of his experience with

the system. In Nicaragua and Honduras, many farmers have billboards installed at their farms stating the organisations they work with.

Cooperatives: These kinds of organisations will play an important role because they know much about their producers. It is important that IDE works in close collaboration with them. From my experience with cooperatives, I can say that they are willing to demonstrate the system in a showcase and in the field. They also have the possibility to organise gatherings where they can introduce the system and distribute manuals. Their involvement has the advantage that IDE does not have to take farmers out of their daily environment.

ECOM as an exporter: Exporters also play an important role in the promotion of the drip irrigation system. Just as the cooperatives, they know their producers very well and farmers trust them. This means that ECOM has the same possibilities as the cooperatives. They can organize gatherings where they show the farmers some pre-installed irrigation systems and hand out manuals.

For the above mentioned reasons, It is suggested to do open air marketing. This kind of marketing consists of outdoor activities. There exist different places to do open air marketing as shown in figure 17.



Figure 17: Open air marketing (Source: own figure)

As explained before, farms are good for marketing, because farmers prefer to stay on their farm. They feel very comfortable there and don't like to be in a situation they aren't familiar with. Another possibility are the farmer's markets. Most villages have a vegetable market. There, farmers could have a look at the system and talk about it. In order to reach the sons of the farmers, promotion at sports events and concerts might prove very efficient. Due to the fact that farmers go to church, it might be possible to demonstrate the system after church. As a pastor said, many people travel two or even four hours to get to church, so religion plays a very important role.

6 Selected case studies

In this part, different case studies will be analyzed and compared to the proposed activities regarding the promotion for drip irrigation. The focus will lie on four different aspects of the proposed marketing strategy for low cost drip irrigation: sports, the church, microfinance and leasing. The goal is to find out how other organizations use these resources for serving this kind of market successfully.

6.1 Role of sports

Worldwide, dozens of local initiatives within the street footballworld network believe that football has an important social impact on development. There exists a Football for Hope Movement, which is an alliance between streetfootballworld and FIFA. The goal of this movement is to build a bridge between development and football.⁶⁵ “Football has a positive effect on those who play it, both in terms of health (physical activity) and life skills (the value of team sport). But beyond that the game serves as an effective tool in community programmes for social development”.⁶⁶ The key elements of this movement are sustainability, inspiring exchange and promoting best practice. Football is used as a tool for social development in the field of sustainable programmes in the field of health, peace, environment, children`s rights, education, social integration and anti-discrimination.⁶⁷

In the following part, some projects within the Football for Hope Movement will be presented. In Africa, the Movement supports the project “Grassroot Soccer”. This project was founded by professional football players for mobilizing global football in the fight against AIDS. “The organization trains local role models [. . .] to deliver an interactive, football-themed behavior development curriculum to young people, who are then empowered as peer educators to teach the community at large what they have learned”.⁶⁸ Grassroot Soccer thinks that soccer is an universal language. “GRS realized that the true power of soccer has always been connections that it creates

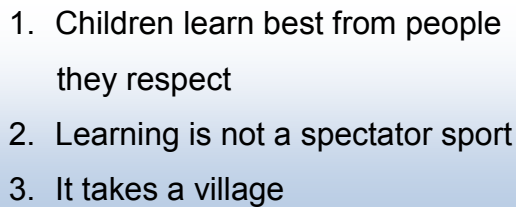
⁶⁵ FIFA (2004).

⁶⁶ FIFA (2004), p.5.

⁶⁷ FIFA (2004), p.18.

⁶⁸ FIFA (2004), p.19.

between people. Using footballers as role models, and using the popularity of soccer to engage hard to reach young people, GRS has combined social theory, public health methodologies, rigorous evaluation and a huge dose of passion“.⁶⁹ Three principles are leading this project:

- 
1. Children learn best from people they respect
 2. Learning is not a spectator sport
 3. It takes a village

1. Children learn best from people they respect

Children respect their heroes, so they have a unique position for influence them. That way, celebrities are used as spokespersons.

2. Learning is not a spectator sport

It is a good learning strategy if people are active participants in the learning process and also teach what they have taught to other people.

3. It takes a village

Soccer can fascinate the whole community and playing soccer can change the thoughts of young people.

Another project is the Spirit of Soccer in Cambodia, which uses soccer to teach people about the dangers of landmines and unexploded ordnance. “Through football, children and coaches learn and spread the message about the dangers of landmines”.⁷⁰ The Spirit of Soccer trains coaches in techniques endorsed by FIFA and Mine Risk Education.

“Colombianitos” is another project located in Colombia which uses football to reduce crime and drug abuse and promote education. “Their football-based programme, Goals for a Better Life, has so far successfully supported a very effective recreational

⁶⁹ Grassroot Soccer (2007), online.

⁷⁰ FIFA (2007), online.

approach to education”.⁷¹ With their program, they try to promote positive lifestyle habits. As the director of the programme says: “We speak football when addressing our critical issues. And children listen. That`s how we connect with them”.⁷²

6.2 Role of pastors

Beside the role sport can play in reaching people at the BOP, religion plays also an important role in undeveloped countries. The Bethlehem Mission of Immensee has a project in Espinar, a province of Peru. Espinar is located in the Andes at a specific amount of 3`900- 4`900 above sea level. Only very rich people dispose of gas and kerosene as energy sources for warm water. The most part of the population cooks with dried cow pies. One family burns seven kilos of cow pies every day. But this organic fertiliser is needed for agriculture. Just 25 % of the population are connected to the electricity network. The goal of the Bethlehem Mission is to improve the situation by using solar power. The Motto is: Not only preaching, but also acting and demonstrating. When people of the Mission visit different villages, they demonstrate people how to heat with elementary resources. Together they construct solar ovens, solar showers and solar collectors. People from the village visit the Mission centre, where they can see different styles of ovens and can cook with the energy of the sun. This course costs 45\$, which covers the price of the material. Afterwards, the participants can keep the manufactured solar oven or shower to use it at home. The project is very successful and connects religion with action.⁷³

6.3 Microfinance

As shown, sport and religion can play an active role by influencing people at the BOP, but without money, people can`t afford a desired product. Therefore, it is very essential to find financial instruments. A very successful instrument is microfinance. Microcredits were developed by ACCION International in Latin America and Grameen Bank in Bangladesh to fight against poverty in the 1970s. Through the pioneering work of Muhammad Yunus of the Grameen Bank, it became an effective

⁷¹ FIFA (2004), p.20.

⁷² FIFA (2007), online.

⁷³ Bethlehem Mission Immensee (dateless).

poverty-alleviation tool.⁷⁴ “Microcredit involves loaning poor people small amounts of money [. . .] for use as capital to start or expand small businesses, sometimes called microenterprises”.⁷⁵

For example Cemex, an international cement and construction company in Mexico, provides credit for cement and architectural consulting. That way they could reduce construction time by one-third and costs by 20 percent. The system is working because they took together three families, which joint responsibility for weekly payments. Repayment rates reach 99 percent.⁷⁶

As mentioned before, another very successful project is the Grameen Bank. This institution adopted the following methodology: A field manager and its staff are covering an area of some villages. “The manager and workers start by visiting villages to familiarise themselves with the local milieu in which they will be operating and identify prospective clientele, as well as explain the purpose, functions, and mode of operation of the bank to the local population”.⁷⁷ They build groups of five borrowers, at the beginning only two of them receive a loan. That’s an efficient way to find out if members conform the rules of the bank. “Only if the first two borrowers repay the principal plus interest over a period of fifty weeks do other members of the group become eligible themselves for a loan. Because of these restrictions, there is substantial group pressure to keep individual records clear. In this sense, collective responsibility of the group serves as collateral on the loan”.⁷⁸

6.4 Microleasing

By speaking about microfinance, a related instrument should be mentioned, namely microleasing. Thereby, the product itself is the credit and its income return is the interest. The problem of microfinance is that the credit must be paid back in rates, but often, the farmer has not enough money for taking this risk. Microleasing solves this problem. The leased product serves as security and the pay-back rate depends on

⁷⁴ Thinkquest (2006), online.

⁷⁵ Thinkquest (2006), online.

⁷⁶ A.T. Kearney (2007).

⁷⁷ Grameen Communication (2009), online.

⁷⁸ Grameen Communication (2009), online.

the activity. With irrigation, it begins with the harvest time. Even better is that the leased product produces the pay-back by itself. For example the milk of a cow which can be used to pay the credit back. If enough milk has been produced, the cow will belong to the farmer. Swisscontact has a project with the Kenya Development Agency (KDA), which leases cows, goats, chickens, irrigation systems and flour mills to small farmers.⁷⁹

Leasing has many advantages in comparison with microcredits. Firstly, in developing countries, medium and long term finance are often not available for small customers. Therefore, the *availability* of leasing can be a good alternative. Secondly, "leasing does not require the lessee to provide long and detailed financial records nor to get involved in the provision of complex collateral security such as mortgages over land and buildings".⁸⁰ The *simplicity* is higher. Thirdly, the *transaction costs* are lower because of the simple and quick procedures.⁸¹ Lastly, there is an increased *security* for the farmer, because he can buy it back by the leasing product itself.

⁷⁹ Swisscontact (2008).

⁸⁰ Havers (1999), p.2.

⁸¹ Havers (1999).

7 Practical Implications

After discussing the different aspects of serving the BOP market, explaining the results of the field study in Nicaragua and adding some other case studies, some practical implications for firms, who want to serve the BOP market, should be given.

“We are giving fifty billion of overseas aid. There are a billion poor people in the world. Why don`t we just find the poor and give them one dollar a week and do nothing else. No questions asked. What they do with the money is not our concern. That would probably do more to relief poverty than anything else”.⁸² This statement doesn`t reflect the reality as seen by discussing the field research and the case studies. For being successful, good and creative innovations are needed, which include a new price-performance, ecologically sustainability and affordability for everyone.

In general, it could be said that firms need totally new business models for being successful at the BOP. Paul Polak, founder of IDE, gets the point: “I wish I could say that my work on poverty over the past twenty-five years has followed a carefully thought-out plan, but it was much more a process of jumping on opportunities that appeared unexpectedly and then learning from each experience”.⁸³ Thereby it is very important to understand how markets, which are characterized by low buying power, high risk to invest and no prefinancing, work. Firms need to create a dual-platform approach: “Keep offering developed markets the existing portfolio of products and services, while adding a distinct and separate set of products and services for emerging markets”.⁸⁴ What this exactly means for firms will be the subject of this chapter. Firstly, some general implications will be given; afterwards, the different aspects will be discussed by using the three challenging factors. Lastly, some instruments for finding good solutions will be shown.

⁸² Desai (2003) quoted in Schabbel (2006), p.85.

⁸³ Polak (2008), p.5.

⁸⁴ Martinez & Haddock (2007), p.10.

7.1 General Implications

As mentioned before, companies are supposed to think out of the box and they should try to discover the totally different world of developing countries. Before they start operating in such markets, they should be aware of some significant differences regarding strategically instruments. William Easterly describes such an approach which will be discussed in paragraph 8.1.1. Another general implication will be discussed in paragraph 8.1.2.: Efficient aid will support people of help themselves, for not making them depend on their helper. As paragraph 8.1.3 will show, firms need to work together with other institution for being really successful. Furthermore, firms should find ways to influence the behavior of their customer, as presented in paragraph 8.1.4. Finally, some general implications about product and price will be given.

7.1.1 Searchers and Planners

For showing the differences between serving a market of a developed country and a BOP market, the approach of William Easterly will be used. His approach shows how different the strategy should be while serving a BOP market. He divided the different ways of serving into Planners and Searchers. "Let's call the advocates of the traditional approach the Planners, while we call the agents for change in the alternative approach the Searchers. The short answer on why dying poor children don't get twelve-cent medicines, while healthy rich children do get Harry Potter, is that twelve-cent medicines are supplied by Planners while Harry Potter is supplied by Searchers".⁸⁵ Easterly believes that for a constructive approach for foreign aid, the mentality of Searchers is important. "In foreign aid, Planners announce good intentions but don't motivate anyone to carry them out; Searchers find things that work and get some reward. Planners raise expectations but take no responsibility for meeting them; Searchers accept responsibility for their actions. Planners determine what to supply; Searchers find out what is in demand. Planners apply global blueprints; Searchers adapt to local conditions".⁸⁶ The great difference between Searchers and Planners is that Searchers are aware of the fact that they don't know

⁸⁵ Easterly (2006), p.5.

⁸⁶ Easterly (2006), p.5-6.

the answers in advance, whereas Planners think that they already know the answer. “A Planner thinks he already knows the answers; he thinks of poverty as a technical engineering problem that his answers will solve. A searcher admits he doesn`t know the answers in advance; he believes that poverty is a complicated tangle of political, social, historical, institutional, and technological factors”.⁸⁷

The principal task of Searchers is to go where the action is and talk to the people living in the situation the Searchers like to change. Polak recapitulates this kind of idea: “What my afternoon with Joe confirmed for me is that coming up with practical solutions for homelessness requires going to the places where homeless people live, learning from them what their lives are like, why they do what they do, and what opportunities they take advantages of now and hope to take advantage of in the future”.⁸⁸ So it is important for finding a good idea to speak with people and see what they really need to serve their needs in an efficient way. As we have seen from the example of the drip irrigation system, farmers in Nicaragua need a simple system that can be used in hills. By observing what people have done with the Pepsee drip, IDE created the idea of a simple but efficient drip irrigation system.

As we have seen, firms need to be Searchers and not Planners if they operate in such a market. Otherwise they will promote products which people at the BOP neither need nor use. As Polak said: “You don`t need a degree in engineering or architecture to learn how to talk with and listen to poor people as customers. [. . .] The things they need are so simple and so obvious that it is relatively easy to come up with new, income-generating products for which they are happy to pay”.⁸⁹ Life at the BOP is simple, direct, fundamental and immediate. If somebody needs water in Uganda, he goes to the next river and gets it. On the contrary, the developed world first needs to calculate the pipe diameter, then define the performance curve of pumps, find out the ingredients of the water, calculate prices and learn the operation system of water tap. This life is far away from any simplicity.⁹⁰

⁸⁷ Easterly (2006), p.6.

⁸⁸ Polak (2008), p.8.

⁸⁹ Polak (2008), p.64.

⁹⁰ Hunger (2004).

One successful example of a company in being a Searcher is Hewlett-Packard (HP). While looking for potential markets in the BOP, they realized that there is a latent demand for photographs throughout the poorest parts of India. In this country, weddings play a very important role, but most families have no wedding pictures because they have no access to photography. “HP developed two companion technologies to enable low-cost, digital picture taking and printing. Dubbed the HP Photoshop Store, the system could be licensed or sold to small communities, with HP providing the financing. Additionally, HP created a low-cost, high-quality, camera that was powered through a solar backpack. The combination of this system and the low-cost camera, created an entire cottage industry of village photographers. By enabling the local village poor to create small businesses, by enabling commerce, HP found a profitable new line of business”.⁹¹

7.1.2 Helping people help themselves

If a firm found out what needs they like to serve, they should think of an efficient way to operate in this market. The most efficient way is to helping people help themselves. This doesn't mean that they should do everything by themselves in a first step. But in a second step they should learn to act without help. “If you give people fish, you feed them for a day, but if you teach them how to fish- or rather, if you enable them to learn how to fish- then they can feed themselves for a lifetime”.⁹² The best aid is the one that enables people to help themselves. Ellerman proposes in his book “Helping people help themselves” the three dos:

1. Start from where the doers are
2. See the world through the doers`eyes
3. Respect the autonomy of the doers

As discussed in chapter 9.1, firms need to act as Searcher, which means to go, where the customer lives and see the world through his eyes. Thereby it is important that a firm respect the autonomy of the costumer. That should implicate that a firm

⁹¹ Moore (dateless), p.16.

⁹² Ellerman (2004), p.2.

doesn't push the customer to do something, because they think that it is best for him. That problem is described by the fundamental helping self-help conundrum: "In every parent-child, teacher-student, manager-worker, or, generally, helper-doer relationship, there is the frustration of the helper wanting the doers to do something- and wanting them to do it for the doers`own reasons".⁹³ Whatever the helper offers will only supply external reasons. "This is actually a paradox or conundrum; if the helpers are supplying help that directly influences the doers, then how can the doers really be "helping themselves"? . . . and if the doers are to become autonomous, then how can external helpers have any direct influence?"⁹⁴ It is difficult to find out how a person can teach other people to think for themselves while giving them the academic thoughts. One never can be sure that these are their own thoughts and even if they have their own thoughts, the teacher can't be sure that he didn't get the thoughts himself. For that reason it is important that the costumer is respected in its autonomy.⁹⁵

7.1.3 Working together with others

As Ex-UN-Secretary General Kofi Annan pointed out: "We cannot reach these goals without the support of the private sector. Most of all, we cannot reach them without a strong private sector in the developing countries themselves, to create jobs and bring prosperity".⁹⁶ In order to be more efficient, it is important that international organizations work together with the private sector. As seen from the field study, the collaboration between IDE, an NGO, and ECOM, a private sector firm, can be very successful in the future. "Whether by paying premium prices for coffee produced with sustainable practices, donating resources to build schools and hospitals, or championing improved market access for developing country exports, a multinational firm can bring unique resources, leverage, and experiences to the development table".⁹⁷ The unconventional partnering between firms, governments, NGOs or groups of multiple stakeholders leads to the necessary capabilities. Public-private partnerships are becoming more common in operating at the BOP. The partnership

⁹³ Ellerman (2005), p.4.

⁹⁴ Ellerman (2005), p.5.

⁹⁵ Ellerman (2005).

⁹⁶ Brainard (2006), p.4.

⁹⁷ Brainard (2006), p.3.

between NGOs and businesses has the advantages that efficient distribution channels and service networks can be used. Furthermore, partnerships with financial services can be helpful. For one organization alone, it is difficult to produce all the needed capacity. In working together, they can use the same channels and that it's the way to be successful. As seen from the example Nicaragua, IDE has the opportunity to use the supply chain and network of ECOM. Furthermore, they can profit from the knowledge of ECOM in the field of coffee and irrigation. To conclude, it is important to create partnerships at the BOP in order to being successful.

7.1.4 Influence behavior

Firms which will operate in developing countries need to influence the behavior of local staff because they have also another way of thinking and working. To influence local staff, firms need to find out how their behavior is. Figure 18 depicts in which ways firms can influence their staff. Form personal experiences in Nicaragua it can be said that the staff is between a low and a high willingness, whereas the capability is very low. So it is important to manage clearly and coach actively, otherwise they will not work efficiently. Detailed descriptions are needed also of very simply tasks. As an example, a farmer in Nicaragua liked to test the system in his field and technicians explained to him that he must separate the irrigated crops from the non-irrigated ones. He didn't do that and the results were falsified. Another example: It was explained to the farmer that he needs to irrigate just one field to see the differences. When they visited him one day, he changed the system to another field. The two examples show that very clear instructions are needed also regarding the customer.

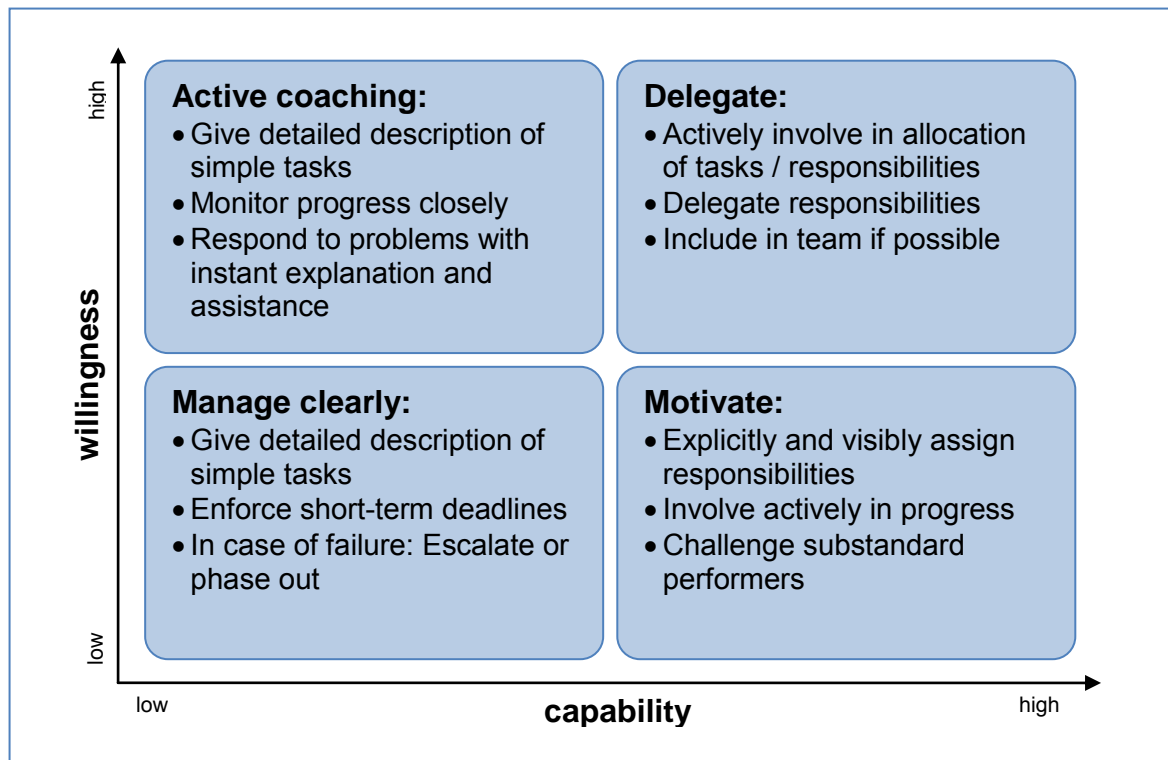


Figure 18: Management of employees (Source: Wiebes et al., 2007).

7.1.5 Product and Price

The main success depends on the product and its price. Firms should guarantee that the product is of high quality and meets the needs of the customer. Every customer in the world has some expectations about a product. "The satisfaction derived from a product varies from one less-developed nation to another, depending upon the consumers' expectations of the product and their socioeconomic and cultural traits. The key to success in product planning is to adapt a product to suit the tastes, needs, and economic characteristics of a particular LDC, rather than to assume that what sells well in a developed country will sell equally well in an unaltered form in a less-developed market".⁹⁸ For being successful, a firm needs to find out what people really want and oughts to keep in mind that also in developing countries, brands and good quality are playing very important roles. "The incorrectly assume the BOP market is not brand-conscious, but it is. The desire for brands is a manifestation of the aspiration for a better life and is no different from any other consumers' desire to have sought after brands".⁹⁹ People at the BOP prefer also products with a brand, but they also want a brand with a high value association. "With less disposable income,

⁹⁸ Kaynak (1982), p.186.

⁹⁹ Moore (dateless), p.16.

poor consumers also have less margin for error in their purchases, therefore steering their preferences toward established, proven brands”.¹⁰⁰ “Well-known multinational brands are favoured over domestic brands by 70 percent”.¹⁰¹

People at the BOP shop every day because of their financial situation. ,They know exactly the different qualities and prices of products and therefore, they know the best place to buy each product. They prefer to buy goods at street and open air markets because they believe that the quality and price is better there. Furthermore they can interact with other people. “For low-income consumers, a wide product assortment and broad acceptance of credit cards are less important than hygiene and dignified treatment”.¹⁰² For that reason it is important to keep in mind that the buying decision is not only driven by price alone. But the price plays also an important role, because people often have only little money to spend. “The extreme price sensitivity of BOP consumers requires dramatic cost reductions to create products and services that these consumers can afford”.¹⁰³ This leads to a low margin per unit in exchange with a high volume of sales.

7.2 Three challenging factors

After explaining some general implications, three challenging factors should be discussed as described at the beginning: Supply chain, financial support and promotion. Firms need to be going strong in these three areas. How to do this will be the subject of the next few paragraphs.



Figure 19 : The three challenging factors (Source : own figure)

¹⁰⁰ Rangan, Quelch, Herrero & Barton (2007), ,

¹⁰¹ A.T.Kearney (2007), p.49.

¹⁰² Rangan, Quelch, Herrero & Baron (2007), p.30.

¹⁰³ Dansk Industri (2007), p.29.

7.2.1 Microfinance

Firms need to support their costumers that they can buy the product. They should work together with financial institutions or find a pay-back system that really works. Otherwise, nobody can afford the product.

7.2.2 Supply Chain

Supply chain is one of the really challenging points regarding the outcome of an operation at the BOP. If the product is of high quality and the price is low but firms can't reach the target group, they will fail. Firms need to have creative ideas how to reach the right customer in the right time. There are a lot of innovative solutions; one example is Coca-Cola who tried to find a way to deal with Russia's ineffective distribution networks. They began to sell their product directly out of shipping containers. Each container is equipped with a sale office.¹⁰⁴ IDE also made a good deal by using the distribution channels of ECOM.

7.2.3 Promotion

If we think about promotion, it is more important than in every other aspect to think in different ways because promotion strategies which work well in developed countries could be disastrous in developing countries. Talking to people and finding out how they really can be touched is very important. I have spoken with young people in Nicaragua and they told me nothing until I asked them if they liked to play football. Afterwards, they told me their whole life. As FIFA said we are talking football and people understand us. Firms need to find the right way to talk with people.

¹⁰⁴ Martinez & Haddock (2007).

7.3 Different models for finding the right way

In this part, three instruments should be presented which can help to find ways to operate in the BOP market: The flatbread factor, 3-stage model and the four A`s. They can be helpful in order to think about different strategies.

7.3.1 The Flatbread Factor

The flatbread factor stands in relationship with the Gruma SA. That`s a company in Mexico whose line of business is the production of corn flour and related products. The company is very successful and has a lot of customers also in Japan, Korea, Singapore, Hong Kong, Thailand and the Philippines. But why is such a firm also successful in Asia and has plans to expand to the Middle East? “Ultimately, its most versatile and marketable product has proven to be not a food, but a process – more specifically, the ability to roll any kind of flour, from corn to wheat to rice, into salable flatbread. Most people from India do not eat corn tortillas, but they do eat a flatbread called naan, made from wheat, which Gruma sells in the United Kingdom and plans to sell in India. The Chinese don`t have much taste for corn tortillas either, but they buy wraps made by Gruma for Peking duck”.¹⁰⁵ That`s meant with “Flatbread Factor”: being able to adapt a whole product to different countries. The flatbread factor contains a very important message, namely to be very flexible as a firm and realize what the different developing countries really need. Companies must have the ability to be alterable. That`s very important if they want to operate at the BOP. So they need to keep the flatbread factor in mind.

7.3.2 3-stage Model for working with the BOP

For planning a project for the BOP, the 3-stage Model can be helpful, because it is important to have a plan.

¹⁰⁵ Martinez & Haddock (2007), p.3.

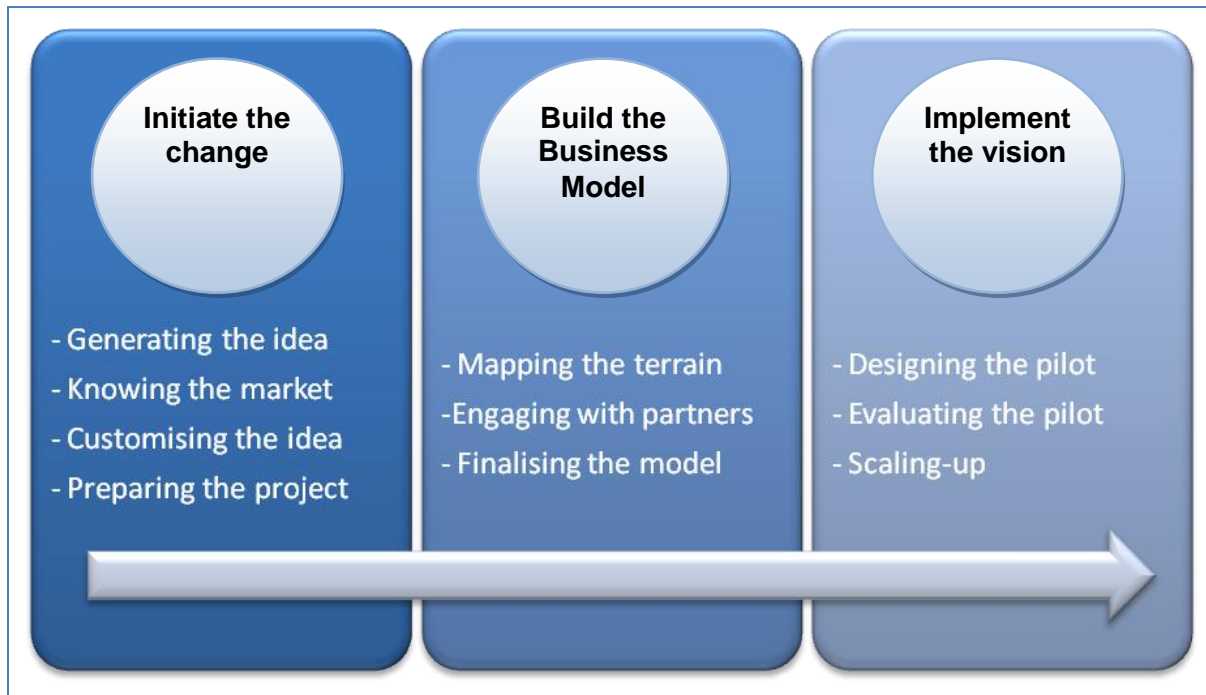


Figure 20: 3-stage Model (Source : Dansk Industri, 2007)

- **First Step: Initiating the change**

The first step is to find the right idea and therefore firms need to think out of the box. In talking to people and finding bridges to cross from own experiences to a new way, new ideas can be created. The second step it is important to understand how the market works to have a realistic foundation for the business idea. The third step is the adoption of the business idea to the expectations of the market.

- **Second Step: Building the Business Model**

In this step, a sustainable business model needs to be built with innovative solutions in order to adopt it to the special conditions at the BOP. For that reason, the specific possibilities need to be mapped out. "It is crucial in this phase to establish partnerships, which can secure a solid base for the project both with respect to financing, as well as for optimising the value-chain, and implementation".¹⁰⁶ Afterwards, the business plan must be finalized.

- **Third Step: Implementing the Vision**

For implementing the project it is important to have a pilot project for testing the proposed strategy and for seeing how the cooperation with local partners works.

¹⁰⁶ Dansk Industri (2007), p.59.

Afterwards, an evaluation needs to take place. That`s important to improve the whole project and to learn from mistakes.

7.3.3 The four A`s

Jamie Anderson and Niels Billou proposed the 4 A`s for addressing the low-income consumers. I think the 4 A`s are a good control instrument to see if a firm is on the right way.

Affordability: People at the BOP haven`t money for large investments. Affordability can be achieved by reducing packaging size to small ones. This is a great option because people can`t buy larger packages, small shops have limited stocking capacity and for scale effects, small packages can be sold for promotional purposes. There are a lot of examples for smaller quantities: Tea packs, pieces of penny candy, computers.¹⁰⁷ “Affordability is often achieved by restructuring the supply chain. Renault is planning an automobile priced at \$3,000 for the Indian marketIn each case the company will not strip down an existing model but instead develop a spacious vehicle especially for Indian buyers”.¹⁰⁸ “Making products affordable for the customer means employing a low-margin, high-volume strategy, and leveraging scale effects to achieve low costs of goods sold”.¹⁰⁹

Availability: Sometimes the infrastructure is so bad that people at the BOP have difficulties to reach conventional retail markets. For reaching these people creative solutions are needed.

Acceptability: “Many low-income consumers retain traditional roles, religious motivations and other unique cultural factors [. . .] As with all consumers, understanding their daily lives and all related needs is most critical”.¹¹⁰ For instance, Indian entrepreneurs make marketing for edible cutlery to cut down on the waste of plastic forks, knives and spoons. It is mad from sorghum flour, a popular heat-and drought-tolerant and nutritious crop. “In other countries – indeed, we must admit,

¹⁰⁷ A.T. Kearney (2007).

¹⁰⁸ A.T. Kearney (2007), p.52.

¹⁰⁹ A.T. Kearney (2007), p.52.

¹¹⁰ A.T. Kearney (2007), p.54.

even to ourselves – edible cutlery seems a bit farfetched. But the product is designed for India`s unique cultural factors, not ours”.¹¹¹ So it is important to consider the circumstances surrounding daily life.

Awareness: In the BOP market there is an absence of conventional advertising. So it is important that people are aware of the product. If there is no TV or Internet, creative solutions are needed For example, Hindustan Unilever uses magicians and dancers to promote their products.. Colgate-Palmolive on the other hand makes marketing with video vans that show local movies and advertising for its personal products. Furthermore, open-air marketing can help reach many people.

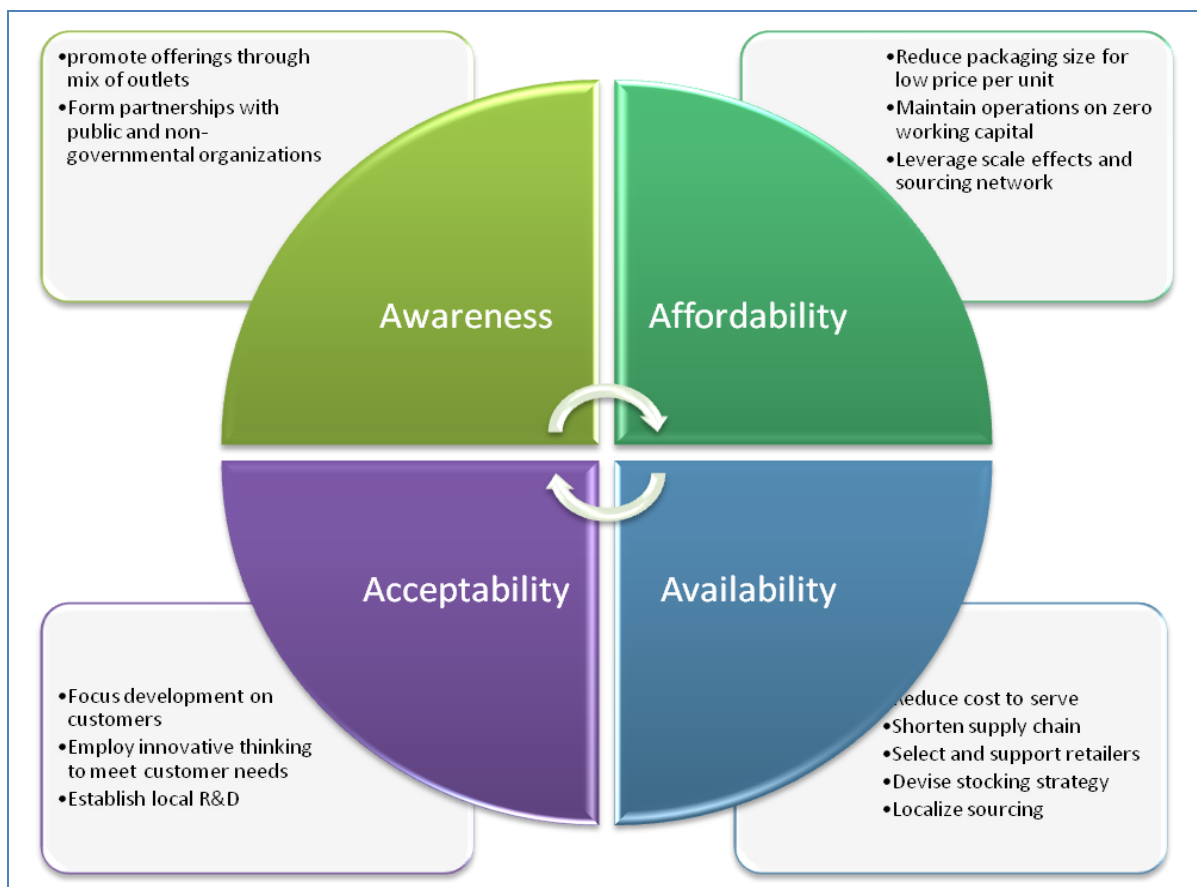


Figure 21 : The four A`s (Source: A.T. Kearney, 2007)

¹¹¹ A.T. Kearney (2007), p.54.

8 Conclusion

“Poverty is unnecessary. People are capable of getting themselves out of poverty. All they need is opportunities. They are not waiting for charity or handouts. Charity is good, but it is not good enough. If you turn it into a business proposition, then it’s very powerful, because it can run on its own steam”.¹¹² People just need opportunities and firms can give them these opportunities while serving the BOP. On the other side it can be very profitable for firms to operate in these markets. The most important rule is that they learn to think out of the box and create totally new business models. Markets in developing countries are very different from markets in developed countries. For finding innovative strategies, firms need to talk with people who have the problem and learn everything about the specific context of the problem. Thereby, companies need to make sure that they can reach a lot of people with their solution and that it has a positive impact that can be brought to scale. Furthermore, the product has to be of good quality and at a low price. It is important to make sure that people have some financial aid if they need it. In every step they should not stop talking and listening to their customer in order to learn from them. Regarding promotion, they need to find the right people who can influence their customers to build a high reputation by a strong and well-known brand.

With every step which a firm takes, the customer has to be in the centre for every decision making process. Observing them and their situation will help to find creative new ways to serve them. As somebody asked Muhammad Yunus how he got the idea of creating a bank for people at the BOP, he answered: I observed how other banks work and then I made the direct opposite.¹¹³

To summarize it can be said that one of the greatest global problems of our time is the bottom of the pyramid, but it is also one of the greatest opportunities. As Polak pointed out: “I’ve finally come to realize that seeing and doing the obvious is probably one of the most difficult things to do”.¹¹⁴ But firms can do it if they look for totally new business models. The most important thing is not to forget that every human being

¹¹² WBCSD (2004), p.16.

¹¹³ Yunus (2007).

¹¹⁴ Polak (2008), p.9.

has its very own dreams and wishes – and they can be very different. So for being really successful, firms need to find out which are the dreams and wishes of a specific customer group.

This idea can be demonstrated by some pictures – by pictures of shoes. The CEO of IDE, Al Doerksen, likes to take pictures of shoes from all over the world. As shown in his pictures, no shoe is like the other. That`s exactly the main message of this thesis: Firms can`t operate in BOP markets with the idea that everyone likes boots. As seen in the pictures, some people just wear jewellery as shoes. But it is not the part of developed countries to judge whether this jewellery is not a shoe at all or not a good shoe. Firms need to think out of the box and learn to realize that everyone has their own shoes and every country its own culture of shoes. That`s not right or wrong, that`s just life. And firms need to think in high heels, boots, wedges, flip-flops and so on to be successful.



Figure 22: Different shoe styles

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Appendix

Report:

Commercialization prospects of low cost drip irrigation systems in Central America



30th November 2008

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Executive Summary

This summary presents the results of my research project in Nicaragua. Over a period of two months, I interviewed 32 people from different parts of the supply and value chain. The project aims at defining a marketing plan for the introduction of low cost drip irrigation systems for small farmers in Nicaragua and its neighbouring countries.

1. Results from the interviews

The definition of a marketing plan for the introduction of low cost drip irrigation systems in Central America poses several challenges. The report focuses on three main challenging factors: supply chain, financial aid and promotion. In order to show how these challenges can be turned into opportunities, I would like to summarize some of the most interesting facts drawn from interviews with farmers, retailers and representatives of financial institutions. Due to these peoples' immediate contact with daily problems and expectations, the following summary contains important information about how to deal with the three challenging factors.

1. Farmers: Farmers are very satisfied with the system and do not encounter any problems using it. Regarding promotion, they find it very important that farmers can have a look at the irrigation system. Therefore, demos need to be installed. In their spare time, the farmers like to stay with their family and friends, to do sports and go to church. These locations seem to be good places to do product marketing.

2. Retailers: Other retailers' drip irrigation systems are more expensive than the IPE system. The cheapest one costs at least 900 dollars. It is important to keep in mind that up to now, it has not been customary to sell irrigation systems to small farmers. If retailers sell those systems to small farmers, they do so with the help of financial institutions. All of the retailers have the same promotion strategy: They work together with cooperatives and NGOs, as it is too expensive and very difficult for them to reach small farmers through their own promotion. However, retailers are very interested in the IDE system and some of them would like to sell the system in their shops, too.

3. Financial Institutions: Banks have been changing their strategy for some time so that small farmers are now part of their target group. Five institutions are interested in working together with IDE to help farmers to get credit. In order to get credit, farmers need to prove that they are the owners of their land, that they have some experience as a farmer and a moral solvency. Usually, farmers pay the credit back as soon as they have got money, for example after the harvest.

2. Marketing plan

In this section, I would like to focus on the marketing plan, exemplified by the well known concept of the four Ps.

1. Product: First of all, IDE needs to make sure that the product is of high quality, because if a system breaks down, this means very bad promotion for the IDE irrigation system. Furthermore, IDE needs to create a strong brand.

2. Price: Different discount policies need to be defined.

3. Placement: There is the possibility to rent an AMANGO warehouse. Furthermore, I would like to propose the cooperation with various retailers, such as large and local retailers, cooperatives and NGOs.

4. Promotion: In general, small farmers are rather conservative. For them, buying a drip irrigation system is a high involvement purchase. For that reason, I defined a list of people whom they trust: family, other farmers, leaders, cooperatives and ECOM. This is why I would suggest an open air marketing strategy. Firstly, small farmers do not particularly like to leave their farms, so one strategy could be to organise gatherings and give out manuals. Secondly, an efficient way to promote the IDE system would be to demonstrate it on farmer's markets. Thirdly, to reach the next generation – the sons of the farmers - promotion at sports events and concerts might prove very efficient.

3. Marketing plan schedule

When it comes to promotion, the right timing is of great importance. Due to the fact that dry season lasts from December to April, the promotion planning should take place between June and August. From September until February, an intense marketing period is recommended. After April, there should be a phase of controlling and adapting the marketing strategy.

I am convinced that three years from now, IDE will have turned the three challenging factors into opportunities. It is important to always keep in mind that changing a culture and creating a market with a well-working supply chain needs some time. At the end of this process, however, a sustainable market will be installed, offering benefits for everyone in the supply chain. IDE will be successful.

4. Expansion to other Central American countries

In this paragraph, I would like to take a quick glance at other countries in Central America and discuss the possibilities of an expansion of the IDE system to those countries. There is a great opportunity to expand the project to Honduras, El Salvador, Guatemala and Paraguay. Paraguay seems to offer a great chance to prove the use of the system in cotton cultivation.

From my point of view, the situation regarding the marketing plan is very similar in the various Central American countries. The only difference is that IDE needs to find other alliance partners in those countries. Honduras presents a great advantage, as IDE can work together with SOGIMEX and therefore with APS. That way, IDE benefits from both technical assistance and a great network. Regarding El Salvador, people from ECOM told me that they are busy trying to set up APS in El Salvador, too. So if this became real, IDE could work with

the same groups as in Honduras. I therefore think that the introduction process will be faster in El Salvador than it was in Nicaragua and Honduras.

5. Conclusion

As was explained at the beginning of the report, the definition of a marketing plan for a low cost drip irrigation system poses many challenges. However, I am fully convinced that IDE will be successful in Central America. I think so because of at least four reasons:

- 1.** Farmers and technicians monitoring the plants noticed that irrigated young plants need only two instead of three years to reach their full size.
- 2.** Technicians and farmers are very satisfied with the IDE irrigation system. They are the ones who work with the system on a daily basis, so their enthusiasm is a very important feedback.
- 3.** The system has many comparative advantages like price, installation and first mover in the field.
- 4.** I found financial institutions that are very interested in working together with IDE and granting farmers a credit. For farmers, this is one of the most important factors as it reduces their risk to a large extent.

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1 Introduction

The general manager of the Honduran retailer R&M pointed out: *If you want to sell drip irrigation systems to small farmers, you first need to change their culture.* I think this is a very important point to keep in mind. Selling drip irrigation systems to small coffee farmers is quite unusual in Central America. Farmers are used to work with conventional systems. For that reason, IDE (International Development Enterprises) will first of all need to change their culture.

This report presents the results of my research project in Nicaragua. The main task was the collection of data through fieldwork and background research. The project aims at defining a marketing plan for the introduction of low cost drip irrigation systems for small farmers in Nicaragua and its neighbouring countries.

The definition of a marketing plan for low cost drip irrigation systems presents a challenge. This report focuses on three main factors: supply chain, financial aid and promotion. IDE needs to find ways to deliver the product to small farmers.

Without financial aid, however, the farmers cannot afford to buy the system. Furthermore, IDE has to come up with adequate promotion strategies in order to reach the target costumers in an efficient way.



Figure 1: The three challenging factors

These three factors will require special attention and may even seem to involve some risk. More importantly, however, they offer great opportunities. This report focuses on ways to identify and take advantage of these opportunities. Over a period of two months, interviews were carried out with people from different parts of the supply and value chain. Chapter 2 gives a summary of the main results of the interviews. Chapter 3 introduces the marketing plan, which

follows the well established four Ps model. Chapter 4 comprises an analysis of the competitive situation. In Chapter 5 follows a discussion of the expansion of the project to other Central American countries. Chapter 6 gives an overview of the marketing plan schedule. Chapter 7 recapitulates why IDE will be successful in Central America, followed by a brief summary in Chapter 8. The report ends with several confidential recommendations to IDE in chapter 9.

2 Evaluation of the interviews

Over a period of two months, I carried out 32 interviews with farmers, retailers, exporters and technicians as well as representatives of local cooperatives, financing institutions (FI), organisations for development and cooperation (ODC) and NGOs. Figure 2 shows the number of interview partners of each group. It further shows that most interviews took place in Nicaragua, while only a few additional interviews were carried out in Honduras.

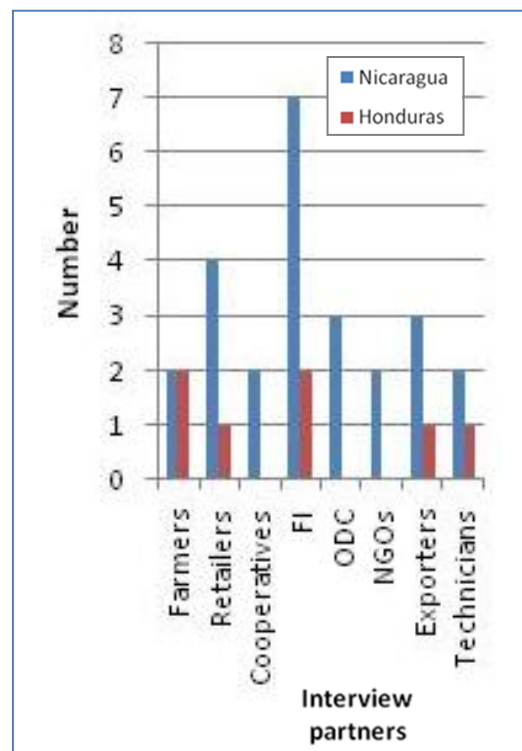


Figure 2: Interview partners

The following paragraphs summarize the main results of the interviews.

2.1 Interviews with farmers

I conducted interviews with four farmers who have been using the drip irrigation system before. The summary of the results will focus on the following four aspects:

1. Satisfaction with the drip irrigation system
2. Financial aid
3. Thoughts about promotion
4. Spare time

Satisfaction: All four farmers are very satisfied with the system. It works very well and there haven't been any problems with it. The farmers told me that usually, it takes young plants four years to grow to their full size. With the drip irrigation system, however, it only takes them two years. The farmers further noticed an increase in quality. One of the farmers particularly likes the fact that he needs less water thanks to the system, as it uses water more efficiently than conventional systems do. All four farmers would buy the drip irrigation system again if they had to choose again.

Financial aid: The farmers I interviewed do not need financial aid. However, they mentioned that there are many possibilities to receive microcredits from cooperatives or microfinance institutions. One farmer believes that if farmers see that the drip irrigation system is working well and if they want to buy it, they will find a way to finance it.

Thoughts about promotion: The farmers advise me to demonstrate the system to

new farmers. They believe that new farmers need to see what they may be going to buy. One farmer suggested that I organise gatherings where farmers can meet and share their experience in regard to the drip irrigation system. He told me that usually they only come together every five months.

Spare time: The farmers use their spare time - if they have any – in various ways. I divided them into two groups: Farmers with more than five manzanas (one manzana corresponds to 0.7 hectares) like going to the village at the weekend to dance or see some friends. Farmers with less than five manzanas stay at home at the weekend. They hardly ever leave their field. They like staying with their families or doing sports. Both groups go to church or a pastor comes to see them. Religion plays a very important role in their lives.



The *first picture* shows a young coffee plant. The *second picture* shows plants that have grown to their full size in a short period of two years thanks to the drip irrigation system. The *third picture* shows non-irrigated plants. A technician is explaining that there is something wrong with them. He cannot definitely say whether the problems are due to water shortage but he is positive that irrigated young plants grow faster and are of better quality than non-irrigated plants.

2.2 Interviews with retailers

I conducted interviews with the following five retailers: AMANCO, AQUATEC, R&M, CAMOSA and P&J (small retailer in Matagalpa). AMANCO, AQUATEC, R&M and CAMOSA are the most important retailers selling irrigation systems in Nicaragua and Honduras. The summary of the results will focus on the following four aspects:

1. The retailers' irrigation systems for small farmers
2. Financial aspects
3. Marketing strategies
4. Interest in IDE product

The retailers' irrigation systems for small farmers: All of the above mentioned retailers sell irrigation systems to small farmers. They sell a great variety of

systems. However, they do not sell many of them to small farmers. Their target group are farmers with several hectares rather than small farmers. All four retailers have warehouses in Managua but are also doing business in other countries such as Guatemala, Honduras, Costa Rica, Panama and El Salvador.



AMANCO's best selling low cost drip irrigation system.



All four retailers sell their irrigation systems at a higher price than IDE.

AMANCO	AQUATEC	R&M	CAMOSA
1,000 – 1,200 dollars	1,400 – 1,800 dollars	900 dollars minimum	1,200 dollars

Financial aspects: If the retailers sell drip irrigation systems to small farmers, these farmers are supported by financial institutions, which grant them a loan so that they can buy an irrigation system.

Marketing strategies: The retailers all have similar strategies. They work together with cooperatives because it is too expensive and too difficult for them to reach farmers through their own promotion. The general manager of R&M in Nicaragua said: *To be honest, I do not think that you need a lot of promotion. That kind of stuff does not work in Nicaragua. You just need to demonstrate your system and find the leader of the group. That's all you need to do.*

Interest in IDE product: All of the retailers are very interested in the IDE drip irrigation system. They were surprised about the price and about the way it works. AMANCO and R&M are also interested in selling the IDE product. Furthermore, the AMANCO representative told me that there might be a possibility for IDE to rent parts of the AMANCO warehouses. However, the retailers would like to first see the IDE drip irrigation system before defining the conditions under which they would agree to sell it in their shops.

2.3 Interviews with financial institutions

I carried out interviews with nine financial institutions in order to find out how to best help small farmers. The evaluation will focus on the following four aspects:

1. How they see small farmers
2. Requirements
3. Payment conditions
4. Interest in new technologies

How they see small farmers: There seems to be an interesting shift in the financial sector in Nicaragua and Honduras. As the banks' representatives told me, they have been changing their strategy for some time and are now welcoming small farmers as clients. Before that shift, it was quite difficult for small farmers to be granted a loan.

Requirements: In order to obtain credit, farmers have to show that they are the owners of their land and that they are experienced farmers. They also need a proof of moral solvency.

Payment conditions: Regarding payment conditions, there exist various practices. Normally, farmers pay back the loan as soon as they have got money, for instance after the harvest. Some institutions are also willing to change payment conditions if a farmer faces unexpected problems, such as a bad harvest, if some of his workers have been very sick over a long period of time or if there is no rain.

Interest in new technologies: All financial institutions are interested in new technologies, as they associate new technologies with development and progress.

2.4 Interviews with NGOs and organisations for development and cooperation

I interviewed three organisations for development and cooperation (COSUDE, GTZ and SNV) and two big NGOs. The summary will focus on the following two aspects:

1. Their experience with and thoughts about drip irrigation systems
2. Marketing strategies

Their experience with and thoughts about drip irrigation systems: Only the NGO TECHNOSERVE works with drip irrigation systems, although it does not use them on coffee plantations. TECHNOSERVE installed monitoring programs. The people from TECHNOSERVE are convinced that Central America is in great need of drip irrigation systems.

Marketing strategies: Based on past experience, TECHNOSERVE recommends demonstrating the system to the farmers. The people from TECHNOSERVE believe that farmers will only buy things which they can see and test. Furthermore, they find it important for farmers to start relying on new technologies.

2.5 Interviews with technicians and exporters

I interviewed three technicians and four other employees from ECOM. I will focus on the following two issues:

1. Their experience with the drop irrigation system
2. Marketing strategies

Their experience with the drip irrigation system: The technicians are very satisfied with the system. It works very well and the results are convincing. They told me that it depends on the conditions of the ground whether the system can be installed or not, but that there are no limits besides that.

Marketing strategies: The ECOM technicians do not have enough time to promote the system. According to them, the farmers are very conservative and stay in their field most of the time. They do not like to change their way of working. The ECOM technicians believe that farmer gatherings are not very efficient, as the farmers do not feel comfortable when away from their farms and therefore do not listen carefully.

2.6 Interviews with cooperatives

I carried out two interviews with cooperatives. Cooperatives play a crucial role in Central America. They vary in size - from fifteen up to 1000 members. I will focus on three aspects:

1. Opinion about drip irrigation systems
2. Financial possibilities
3. Marketing strategies

Opinion about drip irrigation systems: Some of the cooperatives' members work with conventional irrigation systems. The cooperatives think that irrigation is very important, as the rain season tends to be shorter every year.

Financial Possibilities: Some of the cooperatives have the possibility to lend money to small farmers. However, their budget is usually very limited.

Marketing strategies: The cooperatives believe that it is very important for farmers to actually see the system with their own eyes. This is why they proposed to install demos for their farmers. Furthermore, they want to organise gatherings. They know the leaders of the farmers, which is very helpful.

3 Marketing plan: the four Ps

In this chapter, I would like to propose various marketing activities regarding product, price, placement and promotion.



Figure 3: The four Ps

3.1 Product

I would like to define the term “product policy” as analysis, planning, implementation and controlling of activities concerning the product.

Talking about product policy, I would first of all like to focus on the quality of the

product. Nobody – neither farmers nor technicians – told me about any problems with the IDE drip irrigation system. Nevertheless, if IDE starts to promote their product in Nicaragua, they need to make sure that the product is of high quality. Poor quality in the product creates a great risk: As the interviews have shown, farmers need to see the system before buying it. If one system is not working very well, other farmers will hear about the problems and not buy the system. That is why a quality check for each product is of great importance. The ECOM technicians, who will only work for IDE, might be able to conduct those tests.

IDE needs to create a strong brand. Up to now, IDE is not very well known. People need to have a picture in mind when hearing somebody talking about the product. The goal is that people associate IDE with high quality. In order to create a strong brand, the brand needs to be divided into a technical image and an emotional image. The technical image is made up of the product features (hardware), whereas the emotional image consists of the services regarding the product (software).

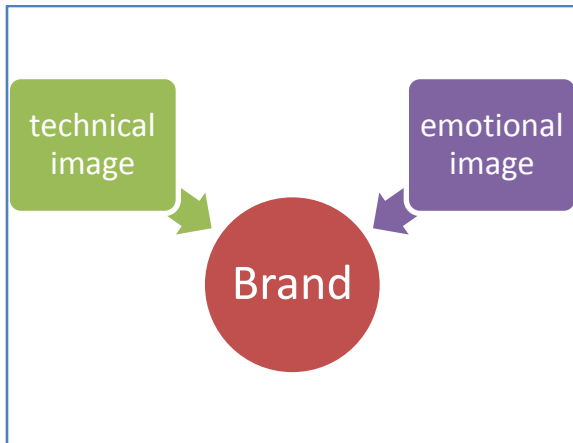


Figure 4: Creating a brand

The technical image, on the one hand, is created by the product itself (primary performance), whereas the emotional image is created by services (secondary performance). A strong technical image can be achieved by ensuring the high quality of the product. In order to see its quality, potential customers need to be able to test a product. For that reason, it is very important that demos are being

installed. The emotional image, on the other hand, is always combined with the product. In my opinion, IDE should offer value-added services, which are services that combine the high quality of the product with the creation of an additional value for the costumers.

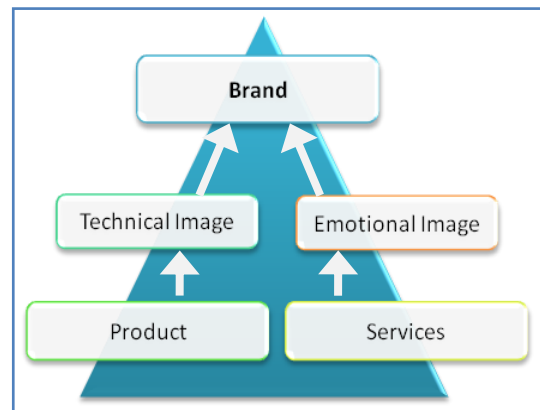


Figure 5: Creating a technical and emotional image

Figure 6 gives an overview of the services provided within the scope of primary and secondary performance.

		Primary Performance	
		Product	Service
Secondary Performance	Product	All parts of the product	Manual T-shirts/ hats Demos
	Service	Warranty Product insurance Technical customer service	Financial aid Sport events

Figure 6: Primary and secondary performance

The individual parts of figure 6 will be discussed later in more detail. I would just like to mention a few things regarding the pink boxes on the left side of figure 6, as they belong to the product policy. The IDE drip irrigation system is of high quality. This is why it might be a good idea to give a warranty of several years on the IDE products. For small farmers, risk reduction is a very important factor. Another service IPE might want to offer is a product insurance. That way, the farmers would not have to take any risk. Most importantly, IDE should provide a technical customer service at any time.

3.2 Price

I would like to define the term “price policy” as the analysis, implementation and controlling of price related activities, such as pricing and the definition of a discount policy.

Regarding the price, IDE assumes cost leadership. This raises the question whether or not the irrigation system will be perceived as inferior to other systems. By creating a strong brand, this problem can be avoided. On the one hand, this brand has to stand for cost leadership, on

the other hand, it has to be associated with high quality. After studying the situation in Nicaragua and Honduras, I believe that farmers will not perceive the cheaper irrigation system as inferior. If small farmers can see that the system works well, they will be glad to accept a cheaper price. Furthermore, studies of the bottom of the income pyramid indicate that small customers often prefer cheaper solutions, even though the life cycle of cheaper products may be shorter.

Another price related question is whether or not there should be a discount policy. In my opinion, a discount policy can be very effective. There should be discount policies for farmers as well as for those selling the system (large and small retailers, cooperatives and NGOs).

Discount policy for farmers: An efficient way to improve sales is to create incentives by encouraging the farmers to tell others about the IDE system. If those other farmers buy a system, the first farmers are entitled to a discount of 10 %. I think it is important that this is linked to a deadline. For example if farmers convince other farmers within one year to buy the system, they will receive an IDE discount.

Discount policy for retailers: If retailers buy a certain quantity of IDE products, there should be a discount too. However, it is important that IDE has a strict discount policy regarding retailers (for instance 15 % off if they buy 25 systems, 20 % off if they buy 50 systems). Furthermore, retailers should be provided with technical assistance and with promotional material.

In order to push the number of sales, it seems important to adopt a particularly attractive price policy at the very beginning. For instance, farmers only pay 20 % of the price and after one year, they pay the rest if they liked the system. However, giving away the systems for free for one year should be avoided. The farmers need to feel responsible for their system, which can be ensured by the fact that they have to pay at least part of the price.

Regarding the raising of funds, I'd recommend agreements with the following financial institutions: BANCENTRO, BANPRO; PRESTANIC, Fundación Jose Nieborowski and FDL. A good idea would be to arrange a deal so that farmers can pay back the money within a period of two years (so that they could pay back part of the loan after the harvest).

3.3 Placement

“Placement policy” is to be understood as the analysis, planning, implementation and controlling of activities regarding product distribution (such as supply chain and distribution strategy)

Until now, the drip irrigation systems were distributed by ECOM technicians. However, in order to reach a great number of costumers, this channel seems to be insufficient. Furthermore, it has to be kept in mind that technicians do not have any marketing experience. It is therefore important to make sure that the technicians will sell more products and that they receive an appropriate marketing training. Furthermore, IDE might want to pay them a commission for each system they sell. As a matter of fact, IDE needs further partners besides the technicians. That's why IDE needs to find further distribution channels. For that reason, I propose the following supply chain:

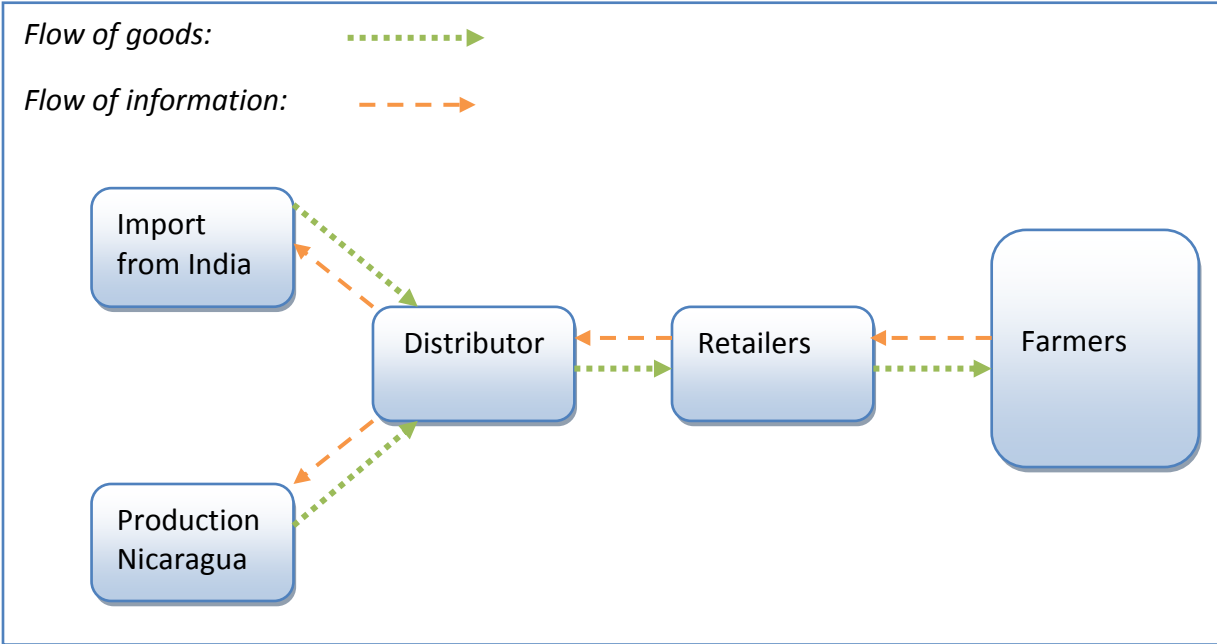


Figure 7: Supply Chain

At the moment, drip irrigation systems are imported from India, but in the future they will be produced in Nicaragua. First of all, they are transported to a warehouse. I have spoken to AMANCO and they told me that it might be possible to rent parts of their warehouses. It might also be possible to rent warehouses from ECOM. From the warehouse, the systems are brought to the retailers. I would propose four types of retail channels: large retailers, local/small retailers, NGOs and cooperatives.

Large retailers: Retailers like AMANCO and R&M are very interested in our product. The advantage of working with large retailers is that they already have the infrastructure and that they are doing business all over Central America.

Local retailers: The cooperation with small/ local retailers will allow IDE to strengthen its local position.

NGOs: NGOs can also play an important role. They can demonstrate the irrigation system on their fields and also sell them. A NGO like TECHNOSERVE has many small producers and experienced technicians who can support it.

Cooperatives: They have the opportunity to demonstrate the system and sell it. In my opinion, cooperatives play a key role in recruiting new costumers. Firstly, they have the capacity to tell which of their farmers are potential new customers. Secondly, they take care of their farmers. In other words, they have the possibility to financially support their farmers. Thirdly,

they have meetings with their farmers, so that they have the opportunity to demonstrate the drip irrigation system. The details of their actual involvement will be discussed in the next paragraph about promotion.

3.4 Promotion

“Communication policy” is defined as the analysis, planning, implementation and controlling of activities relating to communication, such as advertising strategy and media selection.

In order to define a successful marketing strategy, the following three points have to be considered:

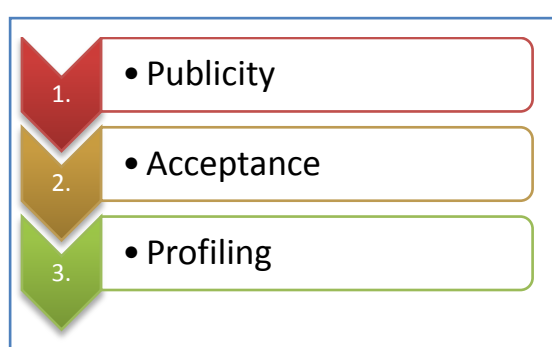


Figure 8: The three steps for a successful promotion

First of all, the product needs to be advertised (publicity). It then becomes part of the decision-making process of the

customers. Secondly, for being shortlisted, customers need to have a positive attitude towards the product (acceptance). Finally, the product stands out from the competition due to a clear profiling (profiling).

To achieve these three goals, it is very important to know the exact characteristics of the target market. This involves a close analysis of the customers' buying behaviour. Regarding the interviews, I know that buying a drip irrigation system means a high involvement for a small farmer. The farmer's investments entail a real risk because of the farmer's financial situation. This means that they will not buy an irrigation system just like that. Before buying a system, they will take their time to inform themselves very well. However, each farmer is an expert in his own field, so if he can see that the system works well and brings great benefits, he will certainly buy the system.

In order to convince the farmers, I tried to find people or organisations that can influence them, namely people in which the farmers trust.

Figure 9 shows the different people and organisations in which the farmers trust.

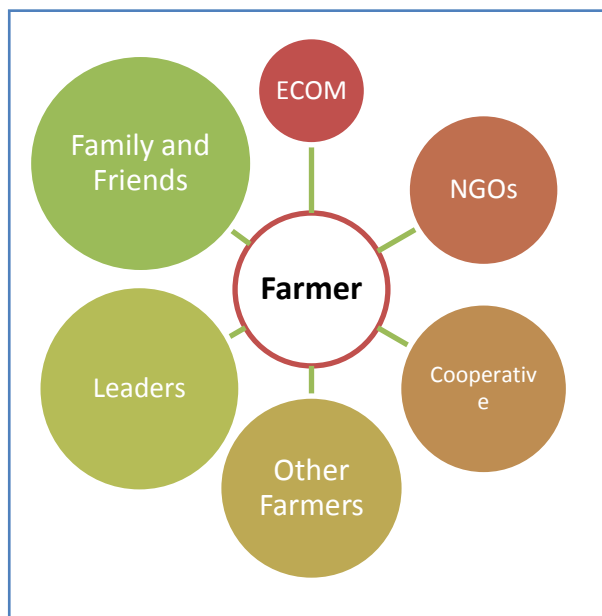


Figure 9: People in which the farmers trust

Family and friends: The most important people for the farmers are their families. As farmers are often conservative people, who do not like to change their practice, IDE needs to focus on their sons. The generation of their sons is more open-minded and will probably manage the farm in a few years. I know that the farmers' sons like doing sports, especially football and baseball. They also like going to concerts. IDE could go to sports events and distribute shirts with the IDE logo for free. This idea came up when I realized that people in Nicaragua always wear shirts with logos from various organisations, such as NGOs or

cooperatives. Furthermore, IDE could invite the farmers' sons to come to the village for some fun activities, such as watching a movie. This might be very attractive, as many of them do not have electricity at home and therefore cannot watch movies. At these events, IDE could give a demonstration of the drip irrigation system and distribute manuals to the farmers. The farmers have the chance to take home these manuals and discuss them with their family. In my opinion, the distribution of manuals is an efficient way of doing marketing, due to the fact that farmers do not feel very comfortable if they have to go to the village. It is very important that the manual explains in a very simple way how the system works and that it names its various benefits. There should also be many pictures and illustrations.

Leaders: In my opinion, it is great to help small farmers by selling them a drip irrigation system. However, I believe that it is crucial to also include farmers with more hectares, particularly at the beginning. People from ECOM told me that if you can find the leader of a region and convince him to use the system, you will sell thousands of products. Of course, leaders can only convince early

adaptors. Nevertheless, there is a great number of early adaptors. In order to find out who is the leader of a particular region, IDE needs to work together with cooperatives.

Other farmers: To reach late adaptors, it is important to deal with other farmers too. For this reason it might be a good idea to install demos at some farms and then invite other farmers to visit these installations. That way, the farmers of a particular farm can also share their experience with their visitors. Their visitors will be more convinced if it is another producer who does the promotion. Another interesting option would be the installation of a billboard in front of a farm, so that other farmers can see that the owner of that particular farm works with the IDE drip irrigation system. It might be useful to indicate the owner's postal address/phone number (so that he can be called for more information) and mention some of his experience with the system. In Nicaragua and Honduras, many farmers have billboards installed at their farms stating the organisations they work with.

Cooperatives: These kinds of organisations will play an important role because they know much about their producers. It is

important that IDE works in close collaboration with them. From my experience with cooperatives, I can say that they are willing to demonstrate the system in a showcase and in the field. They also have the possibility to organise gatherings, where they can introduce the system and distribute manuals. Their involvement has the advantage that IDE does not have to take farmers out of their daily environment too much.

ECOM as an exporter: Exporters also play an important role in the promotion of the drip irrigation system. Just as the cooperatives, they know their producers very well and farmers trust them. This means that ECOM has the same possibilities as the cooperatives. They can organise gatherings where they show the farmers some pre-installed irrigation systems and give out manuals.

For the above mentioned reasons, I would suggest to do open air marketing. By open air I mean outdoor activities. There exist different places to do open air marketing.



Figure 10: Open air marketing

As I explained before, farms are good for marketing. Then there are the farmer's markets. Most villages have a vegetable market. That would be a place where farmers could have a look at the system and talk about it. In order to reach the sons of the farmers, promotion at sports events and concerts might prove very efficient. Due to the fact that farmers go to church, it might be possible to demonstrate the system after church. As a pastor told me, it takes many people two or even four hours to get to church.

4 Competition

After the presentation of the promotion activities, this chapter will analyse the competition situation. In Nicaragua, there exist four main low cost drip irrigation systems distributed by AMANCO, AQUATEC, R&M and CAMOSA. The tables below show different facts concerning these four competitors.

Criteria	AMANCO										
Location	Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Venezuela										
Core competences	AMANCO is the leader in the production and marketing research of tube systems in Latin America.										
Target groups	<p style="text-align: center;">Customers of Amanco drilled down by product segment</p> <table border="1"> <caption>Customers of Amanco drilled down by product segment</caption> <thead> <tr> <th>Segment</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>predial segment</td> <td>58%</td> </tr> <tr> <td>infrastructure segment</td> <td>26%</td> </tr> <tr> <td>agricultural segment</td> <td>14%</td> </tr> <tr> <td>other</td> <td>2%</td> </tr> </tbody> </table>	Segment	Percentage	predial segment	58%	infrastructure segment	26%	agricultural segment	14%	other	2%
Segment	Percentage										
predial segment	58%										
infrastructure segment	26%										
agricultural segment	14%										
other	2%										
Range of Products	In the field of drip irrigation systems for poor farmers, they have different systems, depending on what the customers need.										
Price of Products	1,000-1,200 dollars										
Technical Support	They have a great network of technical support.										
Strategy	For poor farmers, they have a program called Programa BDP Agrícola Amanco. This program includes economic, environmental and social factors. They work together with microfinance institutions to help poor people but have not sold many systems up to now.										
Distribution	The distribution channels for poor farmers are provided by cooperatives.										
Promotion	They told me that they do promotion through cooperatives.										
Summary	AMANCO is the leader of irrigation systems in Central America. It is a large agency with a strong and solid background and a great distribution network. Nevertheless, the IDE system is not competing head-to-head with AMANCO, because the IDE system is cheaper and poor farmers are not part of AMANCO’s target group.										

Figure 11: AMANCO

Criteria	AQUATEC
Domicile	Guatemala, El Salvador, Nicaragua, Honduras, Panama, Costa Rica
Core competences	Aquatec is a Central American cooperation specialising in hydraulic systems with 37 years of experience.
Target groups	Middle and large scale farms
Range of Products	They do not have a particular product for poor producers but deliver the products to those producers if they need one.
Price of Products	About 1,800 dollars
Technical Support	They have a 24-hours technical support.
Strategy	They work together with financial institutions.
Distribution	They work together with cooperatives in order to reach small farmers.
Promotion	Usually, cooperatives do the promotion for them. They told me that it is too expensive for them to do their own promotion.
Summary	AQUATEC is a great player in drip irrigation systems. Nevertheless, the IDE system is not competing head-to-head with AQUATEC because their system is very expensive and poor farmers are not part of their target group.

Figure 12: AQUATEC

Criteria	R&M
Domicile	Guatemala, El Salvador, Nicaragua, Honduras, Panama, Costa Rica
Core competences	They specialise in technologies regarding water.
Target groups	Small, middle and large scale farms
Range of Products	They have a product for small farmers.
Price of Products	900 dollars minimum
Technical Support	They have a very strong technical support. They go to small farmers, analyse their situation and work out a different systems for them.
Strategy	They work together with financial institutions to help farmers pay off their loans by installement.
Distribution	In each area they work together with cooperatives to analyse the situations of different farmers.
Promotion	Usually, cooperatives try to find the farmers' leader in particular are for them. If the leader has got the system, they do not need to do further promotion.
Summary	R&M is a great player in drip irrigation systems and small farmers are part of its target group. Furthermore, R&M has a distribution network that works very well for poor farmers too. However, the IDE system is cheaper.

Figure 13: R&M

Criteria	CAMOSA (John Deere)
Domicile	Honduras
Core competences	They specialise in the distribution of John Deere products.
Target groups	Small, middle and large scale farms
Range of Products	They have got various products for small farmers.
Price of Products	1,200 dollars
Technical Support	They have got a very strong technical support.
Strategy	Regarding financial aspects, they work together with NGOs and the government in order to help small farmers.
Distribution	They have many points of sale in Honduras.
Promotion	They do promotion by demonstrating the system on farmer's markets or by going to the farms and showing the farmers slides of the system.
Summary	Up to now, CAMOSA has sold 300 drip irrigation systems to small farmers in Honduras, so it can be said that small farmers are part of their target group. Furthermore, they have got a distribution network that works very well for poor farmers too. However, the IDE system is cheaper.

Figure 14: CAMOSA

Competitive Advantages:

- *Price:* Products of AQUATEC, AMANCO and R&M are more expensive than the IDE system. That means that IDE has a great competitive advantage regarding the price.
- *Competition situation:* At the moment, there is not much competition in the field of drip irrigation systems for small farmers. That means that IDE has the first mover advantage in the segment of small farmers.
- *Product:* The IDE product is very easy to install and does not require much support.
- *Technical assistance:* Trained technicians can provide quick and individualized solutions.

5 Expansion to other countries in Central America

This chapter gives a short overview of the possibilities to expand the IDE system to other countries in Central America. The main focus will be on Honduras and El Salvador. However, there exists a possibility to introduce the IDE system in Paraguay at some time in the future. As I learned from ECOM, Paraguay might present a great opportunity to prove the use of the system in cotton cultivation.

From my point of view, the situation regarding the marketing plan is very similar in the various Central American countries. The only difference is that IDE needs to find other alliance partners in those countries.

Honduras: Honduras presents a great advantage because here, IDE can work together with SOGIMEX and therefore with APS. This provides IDE with technical assistance and a great network. Furthermore, there is a possibility to work together with AGROPECUARIA LAFISE, which has been financing small producers. They are also interested in doing demos for IDE. The people from AGROPECUARIA LAFISE told me that they have been defining a plan, together with ACA (Acceso

a Crédito para Agricultores), for the initiation of a leasing system for drip irrigation systems in the cultivation of different plants. IDE should try to work towards an agreement with AGROPYME.

El Salvador: As people from ECOM told me, they try to set up APS in El Salvador, too. If this project proves successful, IDE can work with the same alliance groups as in Honduras. For that reason, I think that the process of the IPE product introduction will be faster in El Salvador than it was in Nicaragua and Honduras.

6 Marketing plan schedule

After the very brief discussion of the situation in other Central American countries in chapter 5, I think it is very important to focus on the adequate timing for the promotion of the IDE system. As the dry season lasts from December to April, the promotion planning should start in June and end in August. From September until February, intense marketing activities are highly recommended. After April, there should be a period of controlling and adapting the marketing strategy.

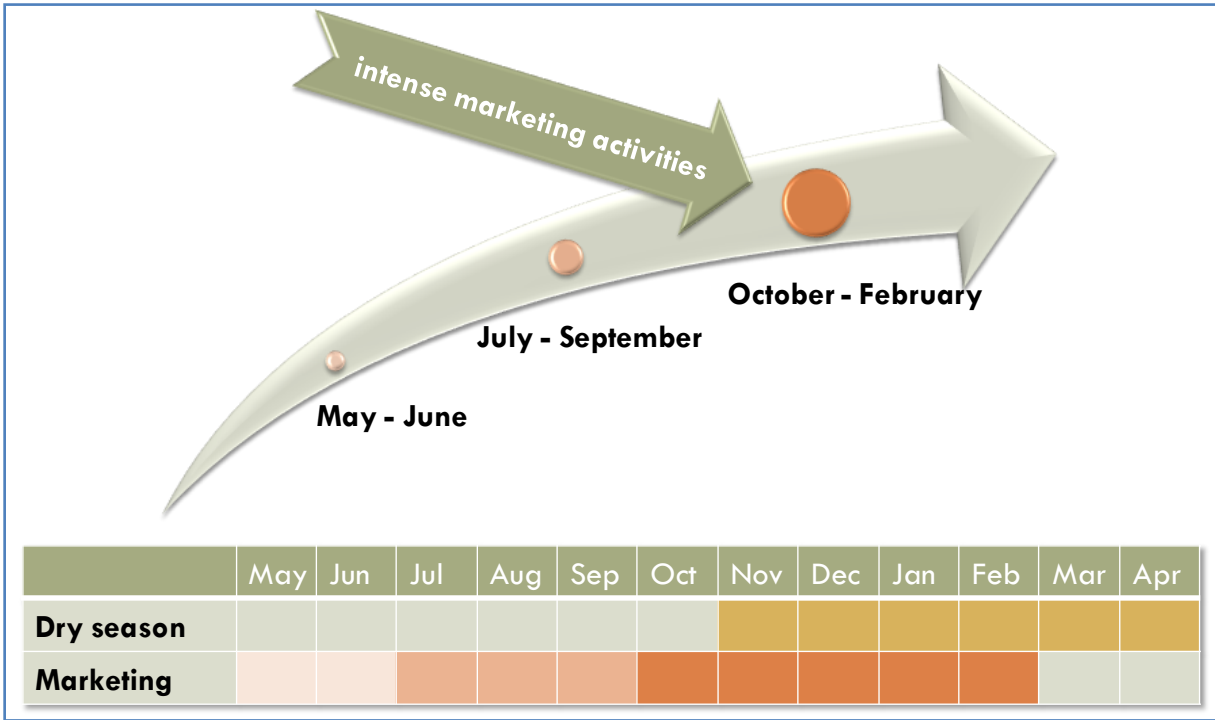


Figure 15: Marketing plan schedule

Figure 15 shows the time of intense marketing activities. Figure 16 illustrates the time table, exemplified by the three challenging factors and the four Ps. Promotion will start in the fourth quarter of each year and last until the beginning of the first quarter of next year. Promotion needs to start as soon as possible. The various supply channels should be installed in the course of the next three years. Regarding financial institutions, IDE can start working towards an agreement right now. By the end of next year, I think they will have a solid basis for financial

aid. I believe that it is of great importance that IDE controls and revises marketing strategies after every promotion cycle.

In my opinion, the situation presented in figure 16 (more detailed marketing plan: Annex I) is realistic and three years from now, IDE will have turned the three challenging factors (supply chain, promotion, financial aid) into opportunities. It is important to always keep in mind that changing a culture or creating a market with an efficient supply chain needs some time. But as soon as the market will be successfully penetrated,

offering sustainable benefits for all members of the supply chain, IDE will be

successful.

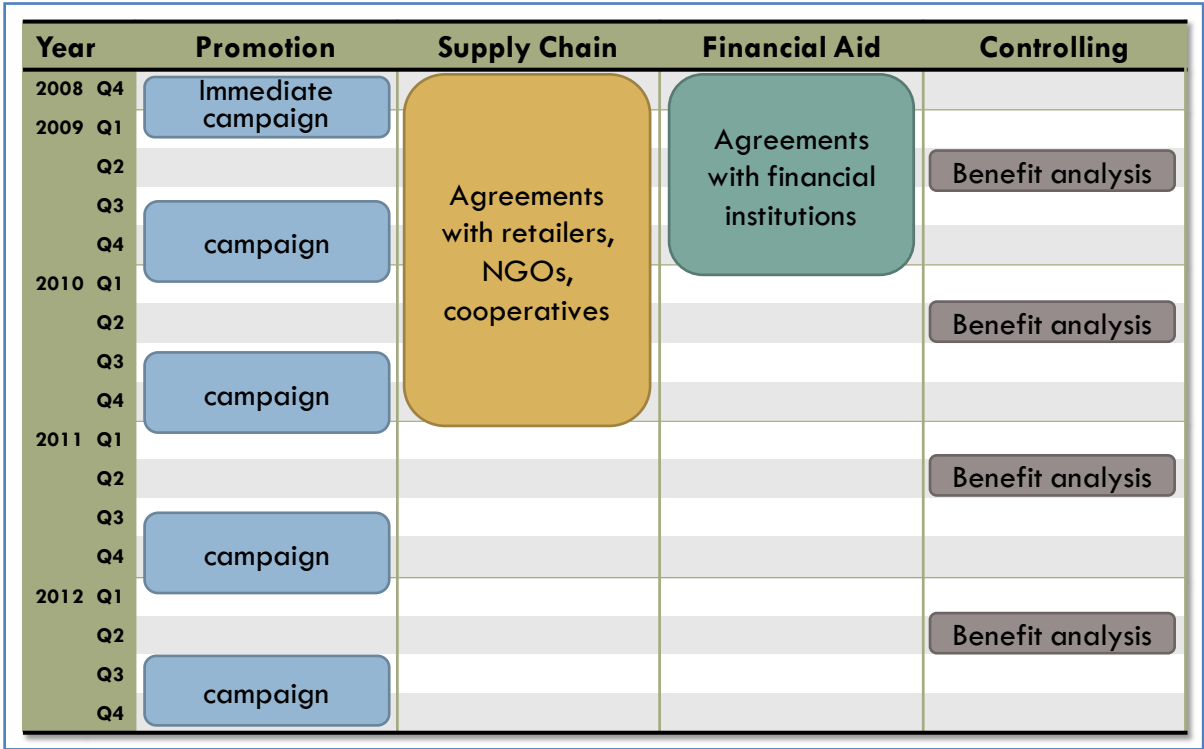


Figure 16: Marketing plan

In my opinion, the installation of the different channels will take three years. By then, the entire network consisting of NGOs, cooperatives, retailers and financial institutions will work efficiently. IDE should start doing promotion in Nicaragua and Honduras at the end of this year. The main focus should be on the installation of demos that should take place with assistance of NGOs, cooperatives and ECOM in the countries concerned. As soon as demos are installed, the farmers should be invited to have a look at the irrigation

system. At the beginning of next year, IDE should work towards agreements, for instance with AMANCO concerning their warehouses and also as regards selling options. Furthermore, IDE should start negotiating with cooperatives. Regarding financial aid, IDE should talk to BANCENTRO in Nicaragua and AGROPECUARIA LAFISE in Honduras in order to reach agreements regarding small farmers. All of these steps are very important to provide the project with a solid basis. If IDE has negotiated

agreements with financial institutions and retailers, they can start promoting a package for small farmers, reducing the farmers' risk. After that, IDE will be prepared to start an intensive marketing period beginning in September 2009 that involves all of the mentioned promotion aspects. In the course of 2009, other retailers and financial institutions should be integrated into the network. During the year 2010, IDE should start to find small local retailers. This will demand some time and require hard work, but it will be the only way to expand the supply chain. In the years 2011 and 2012, IDE should focus on promotion because then people will need to accept and integrate the IDE product.

7 Conclusion

As stated at the very beginning of this report, the definition of a marketing plan for low cost drip irrigation systems poses many challenges. That's just why it is so important that IDE keeps in mind that in Central American countries, things may go more slowly than in some other countries. However, I am fully convinced that IDE will

prove successful in Central America. I think so because of at least four reasons:

- 1.** Farmers and technicians monitoring the plants noticed that irrigated young plants need only two instead of three years to reach their full size.
- 2.** Technicians and farmers are very satisfied with the IDE irrigation system. They are the ones who work with the system on a daily basis, so their enthusiasm is a very important feedback.
- 3.** The system has many comparative advantages like price, installation and first mover in the field.
- 4.** I found financial institutions that are very interested in working together with IDE and granting farmers a credit. For farmers, this is one of the most important factors as it reduces their risk to a large extent.

IDE needs to deal with the following three challenging factors to be successful: supply chain, financial aid and promotion. This report pointed out how to best deal with the three factors (supply chain, promotion, financial support) by defining a marketing plan following the four Ps model. All the activities that were presented are summarized in figure 17.

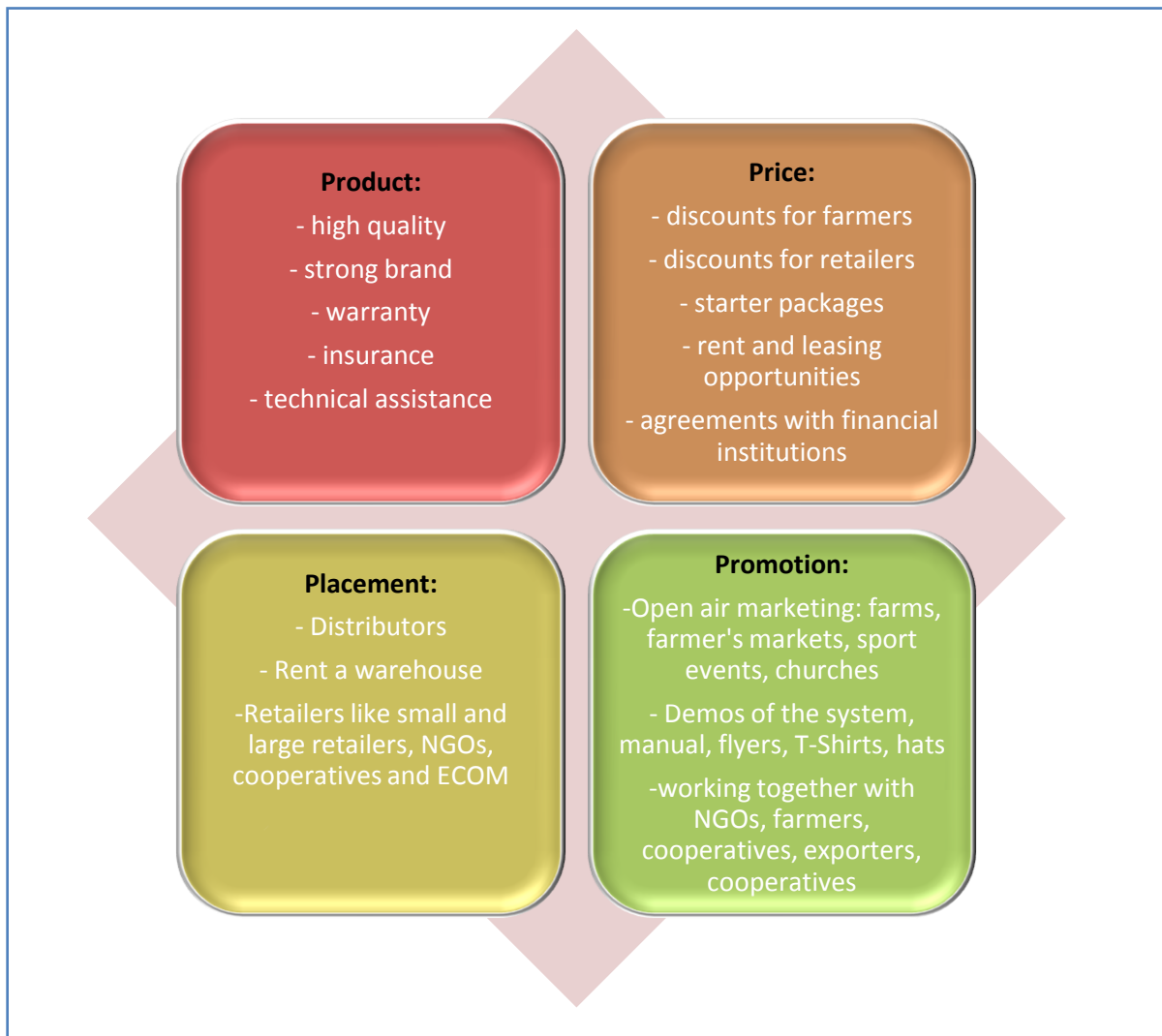


Figure 17: Marketing plan exemplified by the four Ps

In conclusion, I would like to summarize the main thoughts of people in Nicaragua and Honduras:

Water is life –

To have a better life, small farmers in Central America need drip irrigation systems.

To have better results, but even more importantly to ensure the results of the previous year.

For that reason, people believe that IDE is on the right way and will be successful.

Annex

Annex I: Marketing Plan

Year	Promotion	Supply Chain	Financial Aid	Controlling
2008 Q4	<ul style="list-style-type: none"> - Installation of demos with assistance of NGOs, cooperatives and ECOM - Invitation of farmers for looking at the irrigation system 			- Quality Analysis
2009 Q1	<ul style="list-style-type: none"> - Invitation of farmers for looking at the irrigation system 	<ul style="list-style-type: none"> - agreements with AMANCO concerning their warehouses and also as regards selling options 		- Quality Analysis
Q2	<ul style="list-style-type: none"> - Identification of leaders 	<ul style="list-style-type: none"> - agreements with cooperatives - agreements with NGOs 	<ul style="list-style-type: none"> - agreements with BANCENTRO in Nicaragua and AGROPECUARIA LAFISE in Honduras 	<ul style="list-style-type: none"> - Benefit Analysis - Quality Analysis
Q3	<ul style="list-style-type: none"> - Discount policy for farmers 	<ul style="list-style-type: none"> - agreements with local retailers 		- Quality Analysis
Q4	<ul style="list-style-type: none"> - Manual for farmers - Shirts with IDE logo - Sport event - Demonstrations at vegetable markets 			- Quality Analysis
2010 Q1	<ul style="list-style-type: none"> - Manual for farmers - Shirts with IDE logo - Sport events - Demonstrations at vegetable markets 	<ul style="list-style-type: none"> - agreements with R&M 		- Quality Analysis
Q2		<ul style="list-style-type: none"> - agreements with local retailers - agreements with cooperatives - agreements with NGOs 	<ul style="list-style-type: none"> - working on a product insurance/warranties 	<ul style="list-style-type: none"> - Benefit Analysis - Quality Analysis
Q3	<ul style="list-style-type: none"> - Installation of billboards - Discount policy for farmers 	<ul style="list-style-type: none"> - agreements with local retailers 	<ul style="list-style-type: none"> - agreements with other financing institutions 	- Quality Analysis
Q4	<ul style="list-style-type: none"> - Manual for farmers - Shirts with IDE logo - Sport event - Demonstrations (different places) 			- Quality Analysis
2011 Q1	<ul style="list-style-type: none"> - Manual for farmers - Shirts with IDE logo - Sport events - Demonstrations (different places) 			- Quality Analysis

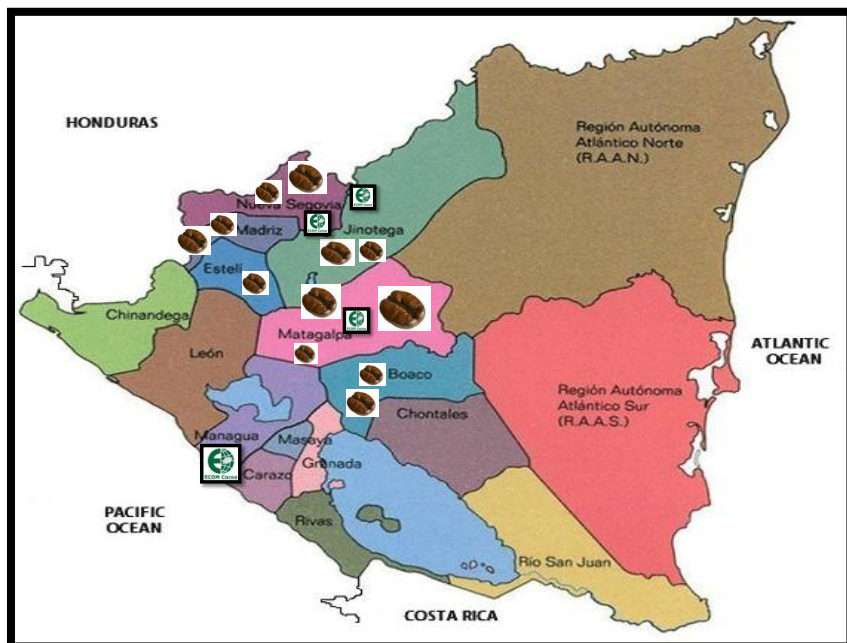
2012	Q2		- agreements with local retailers		- Benefit Analysis - Quality Analysis
	Q3	- Discount policy for farmers			- Quality Analysis
	Q4	- Events with pastors/churches - Concerts for the sons of farmers - Manual for farmers - Shirts with IDE logo - Sport events - Demonstrations (different places)			- Quality Analysis
	Q1	- Manual for farmers - Shirts with IDE logo - Sport event - Demonstrations (different places)			- Quality Analysis
	Q2		- agreements with local retailers		- Benefit Analysis - Quality Analysis
	Q3	- Discount policy for farmers			- Quality Analysis
	Q4	- New marketing strategies			- Quality Analysis

Annex II: Contact Persons

Organization	Contact Person	Position	Call number	E-mail
R&M	Mauricio Urtecho Sacasa	General Manager	(505) 249 1722	murtecho@rymca.com
R&M	Marcos Jarquin Lòpez	Salesman	(505) 679 3629	mjarquin@rymca.com
TECHNOSERVE	Edgard Berrios	Regional Manager	(505) 254 7546	eberrios@tns.org.ni
TECHNOSERVE	Julie F. Peters	General Manger	(505) 254 7480	jpeters@tns.org.ni
CITIBANK	Felix Antonio Lòpez Tinoco	General Manager	(505) 772 5845	felix.antonio.lopeztinoco@citi.com
AMANCO	Rafael Montenegro	Engineer	(505) 266 1551	Rafael.montenegro@mexichem.com
PAC (Asociaciòn Pueblos en Acciòn Comunitaria)	Mario Péerez Lejarza	Executve Director	(505) 265 3415	mario@apac.org.ni
FondoAgro	Carlos Mejia	Cordinator	(505) 772 6320	cmejia@fondeagro.org.ni
FondoAgro	Julio Solòrzano	Cordinator	(505) 772 6320	jsolorzano@fondeagro.org.ni
Ramacafe	Gabriela Figúuroa de Hüeck	Organizing Committee	(505) 277 2154	gabrielafhh@gmail.com
PROMIFIN	Perla Rosales de Salazar	Nacional Coordinator	(505) 287 5302	prosales@promifin.org.ni
AQUATEC	Salvador Urbina	General Manager	(505) 249 6292	tecnologiabombeo@aquatec.com.ni
GTZ	Beate Weiskopf	General Manger	(505) 278 5489	beate.weiskopf@gtz.de

AGROPECUARIA Lafise	David Moreira	Coordinator	(505) 776 6140	dmoreira@zamorano.edu>
CAMOSA	Amnon Keidar	Manager	(504) 557 8669	akeidar@camosa.com
BANCENTRO	Juan Moreno Mejia	Manger of credits	(505) 772 3922	jmoreno@bancentro.com.ni
BANPRO	Julio Jarquin Sevilla	Manager	(505) 772 2574	juliojarquin@banpro.com.ni
PRESTANIC	Domingo Heulva	Engenieer	(505) 772 3518	prestanic_matagalpa1@yahoo.es
F.D.L (Fondo de Desarrollo Local)	Lic. Manuel Bermudez Vado	Manager	(505) 278 0627	manueb@fld.org.ni
ACA (Acceso a Crédito para Agricultores)	Erwin Alvarez	Specialist	(504) 239 1568	ealvarez@acdivocahonduras.org

Annex III: Cooperatives (Coffee)



Nicaragua

Asociacion/Cooperativa Union de Cafetaleros	Lugar	Numero de Afiliados	No. Manzanas Cultivadas	Produccion Total/QQs	Web
EXCAN	Managua				www.excan.org
UCPCO (Unión de Cooperativas Productoras de Café Organico),	Matriz	355	3020	12900	www.ucpcorl.com
CECOCAFEN (Central de Cooperativas Cafetaleras del	Matagalpa, Jinotega	2`083	5`767,27	39`960,01	

Norte)					
SOPPEXCA (Sociedad de Pequeños Productores Exportadores y Compradores de Café S.A)	Jinotega	590	1`525	33`953	http://www.soppexcca.org/
Aldea Global (Asociación Aldea Global)	Jinotega	440	1`320	9`196	
Cafenica	Matagalpa	9`329	19`688	239`453	
Coop. San Isidro	Boaco	211	488	5520	
COSATIN	Boaco	584	1`317	11`450	
PROCOCER	Nueva Segovia	600	876	17`344	
Solidaridad R.L.	Matagalpa	67	320	12`000	
PRODECOOP (<u>Promotora de Desarrollo Cooperativo</u>)	Nueva Segovia	606	1`649,62 143	9`208	
PRODECOOP (<u>Promotora de Desarrollo Cooperativo</u>)	Esteli	523	944,7177 97	3`282,25	
PRODECOOP (<u>Promotora de Desarrollo Cooperativo</u>)	Matriz	674	2748.004 29	19`727,27	

Honduras

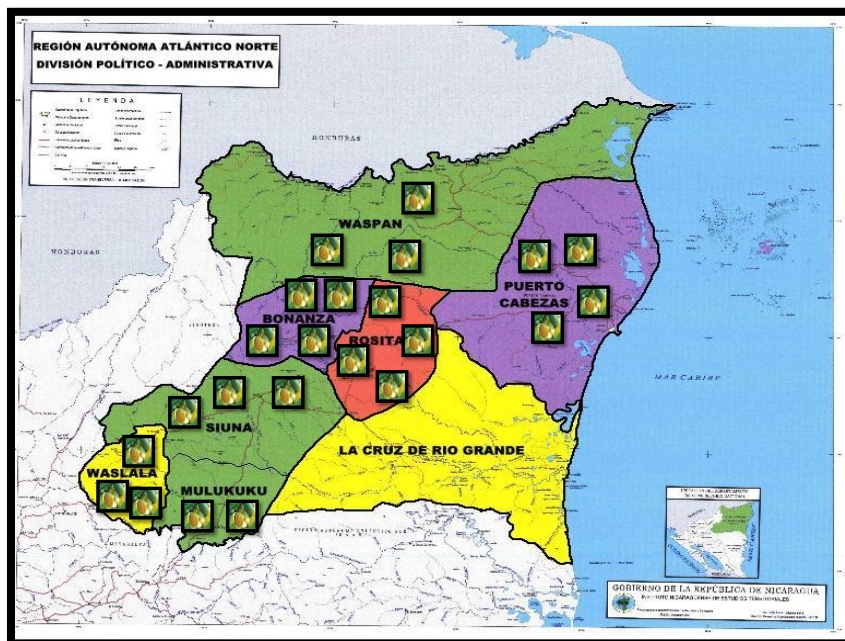
Asociacion/Cooperativa	Lugar	Numero de Afiliados	No. Manzanas Cultivadas	Produccionon Total/QQs	Web
Union de Cafetaleros CCCH <u>Central de Cooperativas Cafeteleras de Honduras</u>		10`000		9`000 000 Pounds	
RAOS (Cooperativa Regional Mixta de Agricultores Organicos de la Sierra)		400			
COARENE Cooperativa Agropecuaria Regional Nuevo Eden LTDa	Intibuca	192			
COCAOL Cooperativa Cafetalera Olancho	Santa Maria de Real region of Central Honduras	53		225`000 Pounds	
Cooperativa Regional Mixta de Agricultores Orgánicos de la S	La Paz	400		6 Containers	

Guatemala

Organizacion	Lugar	Numero de Afiliados	No. Manzanas Cultivadas	Produccion Total/QQs	Web
Asociación Chajulense		3`000		50 Containers	
FEDECOCAGUA (Federación de Cooperativas Agrícolas de Productores de Café de Guatemala)		20`000			
Asociacion Chajulense Val Vaq Quyol	San Gaspar Chajul, El Quiche	1`662			
ASOBAGRI Asociación Barillense de Agricultores	Huehuetenango region	650		1`000`000 Pounds	
Asociación Civil GUAYA'B	Huehuetenango region	330		500`000 Pounds	
ASASAPN (Asociación de Agricultores el Esfuerzo)	Huehuetenango region	290		1`000`000 Pounds	
Asociación de Cooperación al Desarrollo Integral de Huehuetenango	Cuchumatanes Mountains	9`300		3,600,000 Pounds	
ADIPCO	Huehuetenango	260			

(Asociación de Desarrollo Integral Productivo Cocolense)	region				
COMAL Comercializadora Maya Alternativa	Huehuetenango region	496		132 Containers	
Cooperativa Agricola Cafetalera Nahuala RL		200		112,000 Pounds	
Cooperativa Integral de Comercializacion Maya Ixil	Ixcán region in Quiché	131		450,000 Pounds	
FEDECOCAGUA (Feder de Coope Agríc de Produc de Café de Guatemala RL)	Huehuetenango, Cobán, Verapaces, Retalhuleu, San Marcos, and Zacapa	20`000		630 Containers	
<u>La Voz que Clama en el Desierto RL,</u>		140		525,000 Pounds	
<u>Sociedad Civil de Pequeños Productores de Café Manos Campesi</u>	regions of Quetzaltenango, San Marcos, Chimaltenango and Sololá	1`000		25 Containers	

Annex IV: Cooperatives (Cacao)



Nicaragua

Organizacion	Lugar	Numer o de Afiliad os	No. Manzana s Cultivada s	Produccio n Total/QQs	Web
CACAONICA (La Cooperativa Agroforestal de Cacao de Nicaragua)	Wasala	700		400 Metric Tons	
ACAWAS	Wasala	105	270 Hectare		
ADDAC (ASOCIACIÓN PARA LA DIVERSIFICACI	Wasala				

ÓN Y EL DESARROLLO AGRÍCOLA COMUNAL)					
UNAG (Union Nacional de Agricultores y Ganaderos)	Waspam				
FADCANIC (Fundacion para la Autonomia y el Desarrollo de la Costa Atlantica de Nicaragua)	Waspam				http://www.fadcanic.org.ni/
PANA-PANA (Asociación para el Desarrollo de la Costa Atlántica)	Waspam				
UCOTAB	Puerto Capezas				
FADCANIC (Fundacion para la Autonomia y el Desarrollo de la Costa Atlantica de Nicaragua)	Puerto Capezas				
PANA-PANA (Asociación	Puerto Capezas				

para el Desarrollo de la Costa Atlántica)					
AIKUKI WAL	Puerto Capezas				
COSBA	Bonanza				
CONDEBOSIU (El Consorcio de Desarrollo de Siuna y Bonanza)	Bonanza				
UNAG (Union Nacional de Agricultores y Ganaderos)	Bonanza				
PCAC (Programa de Campesino a Campesino)	Bonanza				
FADCANIC ((Fundacion para la Autonomia y el Desarrollo de la Costa Atlantica de Nicaragua)	Rosita				
FURCA (Fundacion por la unidad y reconstruccion de la costa	Rosita				http://furca.zonanica.com/

atlantica)					
UNAG (Union Nacional de Agricultores y Ganaderos)	Rosita				
PCAC (Programa de Campesino a Campesino)	Rosita				
Coop. de Cacaoteros	Mulukuku				
COPAM	Mulukuku				
UNAG (Union Nacional de Agricultores y Ganaderos)	Siuna				
PCAC (Programa de Campesino a Campesino)	Siuna				
CONDEBOSIU (El Consorcio de Desarrollo de Siuna y Bonanza)	Siuna				

Declaration of Authorship

I hereby declare

- that I have written this thesis without any help from others and without the use of documents and aids other than those stated above,
- that I have mentioned all used sources and that I have cited them correctly according to established academic citation rules,
- that I shall not pass on any copies of this thesis to any third parties without the President's consent, with the exception of fellow students or persons who have provided me with essential information for this thesis, to whom I may pass on copies of this thesis after the procedure has been concluded.

Parpan, May 18, 2009

Nadja Kränzlin
