

Islands of Globesity

A Study on Human Health, Unequal Exchange, and Human-Environmental Relations in Samoa.

Report from a Minor Field Study in Samoa, May–June 2007



Sunset at the end of the world, Savai'i, Samoa. The International Date Line passes just west of Samoa, so every day, Samoa is the last place on Earth where the sun sets (Photo by the author, 2007).

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Abstract

In this field study, based on fieldwork during a period of two months, the impact of imported food and goods on human health and the environment in the Pacific island state of Samoa is investigated. The focus is on the direct impact of imported food on human health, as well as the role of imported food and goods in changing human-environmental relations.

It is argued that modern problems of health are part of our larger ecological crisis, and should be understood as such. Applying theories of ecologically unequal exchange to the field material, it is further argued that in a self-reinforcing way, the growing dependency on imported goods and industrial low-quality food in Samoa is a contributing factor to unsustainable use of local natural resources, as well as unsustainable patterns of consumption.

Key words: imported food, health, non-communicable disease, human-environmental relations, ecologically unequal exchange, environmental sustainability, Pacific Islands, Oceania, Polynesia, Samoa, human ecology.

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1. INTRODUCTION

From Sweden, I have traveled around the world to the Samoan islands, which are situated in the middle of the great Pacific Ocean. I have come to study human-environmental relations in Samoa and the impact of imported food and goods on human health and the environment here. Already on my first day here, as I walk the busy and noisy streets of Apia, Samoa's capital city and the only place in Samoa that can be characterized as a city, I begin to understand why Samoa, like many other island nations and territories of Oceania have such a high rate of non-communicable disease or so-called life-style disease. In reality, Apia is a conglomerate of villages that have grown together around a fairly small commercial center, but it has all the features of a modern city; many cars, large modern financial buildings, shops, malls, restaurants, supermarkets, and even a cinema that shows the newest Hollywood blockbusters.

At the fresh produce market, the *Maketi Fou*, people sell their homegrown produce, root crops, fruits and vegetables (figure 1). Even on Sundays, when Samoans gather with their families for the big Sunday meal and the streets of Apia are quiet and peaceful, there are still people at the market, sitting idly or sleeping on the floor, so they do not lose their spot. A middle size papaya or a bunch of sweet small bananas costs only 2 *tala* (5 SEK). At some of the stalls they sell traditionally prepared food, baked taro¹ and breadfruit, and small packets of *palusami*² wrapped in banana leaves – but they are not very busy. At the other end of the *Maketi Fou* is the section with stalls selling prepared food. The food is cheap and mostly deep-fried, dumplings of all sorts, fried meats and fish, plantain, roots and rice. Judging from the number of people here, this food is popular among Samoans.

At the supermarkets in Apia I find a variety of dry, frozen and canned food. The canned food is mostly imported from Australia, New Zealand, or the US, but also from China, Fiji, and South America. Canned meat takes up most of the space, but I am surprised to see so much canned fruit on the supermarket shelves (figure 2) – I have just seen fresh pineapples at the *Maketi Fou* at roughly the same price as the canned ones, but considering the long rows, there must be a market for it. The section with sweets, crisps, and biscuits is large, and sacs and packets of rice in all sizes are found in every supermarket. With the exception of locally produced chips made of taro, breadfruit, and banana, almost no local products enter the supermarkets. And considering the low employment rate in Samoa (only ca. 30%) and the low wages, food is quite expensive. But everywhere I go, the Samoans I meet are proud to tell me that nobody in Samoa needs to go hungry. And indeed, Samoans do not generally appear to be undernourished.

At one of the more posh supermarkets there is a more varied selection of European-style or *Palagi*³ food: fresh and frozen vegetables, fruit, dairy products etc. But prices are very high – much higher than they would be in a continental European supermarket; the pack of 8 imported Mexican tortillas for 40 *tala* (94 SEK) seems out of place, and I wonder who can afford to buy such luxury goods as a small packet of rye crisps for 20 *tala* (49 SEK). I for sure cannot, even if I would like to, since it is the only rye product I manage to find during my stay in Samoa. I get the impression that to secure an adequate and healthy diet in Samoa, you either have to have a lot of money, which most Samoans do not have, or you have to have access to local resources, which on the other hand, most Samoans do have.

¹ Taro, *Colocasia esculenta*, is a root crop and an important food staple in Samoa

² *Palusami* is a Samoan dish of young taro leaves baked in coconut cream.

³ *Palagi* or *Papalagi* is the Samoan word for people of European descent.



Figure 1. Fugalei market or the *Maketi Fou* in Apia, Samoa. (Photo by the author, 2007.)



Figure 2. Canned fruit in a smaller supermarket in Apia, Samoa. (Photo by the author, 2007.)

1.1 Background, purpose, and aim of the study

Human existence, survival, and health ultimately depend on the natural environment. Today, human populations appropriate a larger portion of the Earth's resources than ever before in human history (Vitousek et al 1997, Wackernagel & Rees 1996:2). And although the quantities and value of subsistence goods being transported between regions, countries and continents have grown along with production (Haenn & Wilk 2006:403ff), close to one billion people worldwide are still chronically undernourished (Miller 2004:285). According to the World Health Organization (WHO 1996) 3 billion people are malnourished – the largest number and proportion ever in history (Miller

& Rees 2000:5). Production, trade, and consumption have reached unprecedented levels, and never before have so many people depended upon the market to provide them with their daily bread. In most cases this development has meant a fundamental change in human-environmental relations, because the direct link between the local environment and daily subsistence has been severed. The extent of human activity in the past century has resulted in unprecedented human-induced environmental change (McNeill 2000, Meyer 1996), and some of the negative health consequences of ecological degradation are becoming evident (McMichael 2000, WHO 2005).

In the year 2000, a report from the Worldwatch Institute (2000) in Washington, D.C. announced that something new had happened: for the first time in recorded human history the number of obese people in the world rivaled the number of underweight people. This may sound like good news, but as we shall see, overweight and obesity is increasingly associated with poverty, malnutrition and poor health. Samoa is one of the places on Earth where the negative consequences of changing subsistence practices and cheap imported food is becoming more and more evident. Put simply, it is making people sick.

Departing from a recognition that issues of consumption are essential for understanding environmental change at all scales of analysis (Wilk 2006:421), I will investigate the impact of imported industrial food and goods and local patterns of consumption on the natural environment in Samoa and the people who live in it. The purpose of the study is thus:

To contribute to a better understanding of the interrelations between the natural environment and modern problems of health, particularly in relation to diet change and with a special focus on Samoa.

To achieve this purpose I will pursue two research questions:

- 1. Why do Samoans choose to consume imported food?**
- 2. What is the impact of imported goods, food in particular, on human health and the environment in Samoa?**

Since the spread and increase of non-communicable disease, is a growing problem on a global basis, both in the so-called developed and the developing world, I went to Samoa to investigate the problem of poor health and life-style disease from a *human ecological* perspective - a holistic perspective on human-environmental relations, which includes aspects of culture and identity, ecology, and world system dynamics. Human ecology can be described as a trans-disciplinary research field of human-environmental relations in time and space. It departs from the recognition that human life as well as all human achievements of culture and society is embedded in nature; without the natural environment to support metabolism, neither humans nor their societies would survive. Therefore, the integrity of ecosystems is a crucial precondition for human health (Pimentel et al 2000).

The field of human ecology has gained momentum as the consequences of the global ecological crisis are becoming ever more apparent and pressing. Recognizing the unequal distribution of ecological risk and benefit among the people and peoples of the world, there are two important questions at the core of the human ecological research field. One is how people can structure and organize society without destroying the natural environment that is the very foundation for its existence. The other question is the one of distribution of limited natural resources among and between countries, social classes, and generations (Hornborg 1997). These two questions – of sustainability and of (unequal) exchange and distribution – underlie this study. However, the aim is to incorporate the issue of human health and the human body as such. As a

discipline, human ecology departs from the premise that our current ecological crisis is rooted in Cartesian dualism, which underpins Western scientific culture and prevents us from understanding the nature of our environmental problems (which is why these problems are only growing despite the attention and “sustainababble” (Hornborg 2001:26) of the past decades). Cartesian dualism has created a psychological barrier between humans and the rest of nature that prevents us from understanding ourselves as ecological beings (Rees 2000:140). This barrier is highly visible in the current discourse on the modern health problems and the challenges they pose to society. Thus, not only does this psychological barrier prevent us from understanding the nature of our ecological crisis, it also prevents us from understanding the nature of modern problems of health.

1.2 Globesity – a human ecological problem?

The number of people in the world becoming overweight and obese is increasing rapidly, and the term globesity – a combination of the words global and obesity – is often used by the WHO to refer to this trend. In the Pacific region, non-communicable disease related to modern diet and life-style, such as diabetes and cardiovascular disease is becoming epidemic, and the rate of obesity, which is often associated with these non-communicable diseases, is also very high. A recent report on the issue states that “obesity is a major epidemic” in the Pacific, which is “threatening the future well-being and longevity” of its people, “as well as the economic prosperity of Pacific Island countries” (SPC 2002:2). This same report shows very high rates of obesity in Samoa, with the highest percentage in urban areas (Ibid.:6). According to statistics from the World Health Organization on obesity, the countries on the top 5 list are all Pacific Island countries⁴.

Recently, the momentous *Millennium Ecosystem Assessment* (released in 2005) described the problem of obesity as a “human ecological” problem:

The rise of obesity in urban populations around the world is essentially a 'human ecological' problem due to the societal-level imbalance between energy ingested and energy expended - it is a modern way-of-living problem (WHO 2005:10).

It can fairly be argued that a human ecological problem requires human ecological solutions. Thus, I will argue that rather than seeing obesity and life-style disease as personal, psychological, medical, social or economic problems, they should be understood as environmental and distributional problems – as problems of ecology. Since humans are ecological beings it would be folly to assume that the accelerating use of natural resources would not somehow affect the human organism – in both negative and positive ways. However, the positive and negative health effects are not evenly and equally distributed among and between populations.

It seems straightforward to ascribe the growing number of obese people in the world to the larger overconsumption of global resources. And there is, particularly in Western society, a tendency to view “over”weight individuals as overconsumers (Brownell et al 2005, Hesse-Biber 1996:4). However, this analogy is oversimplified, and if scrutinized more closely it turns out to be wrong; at the individual level there is no direct or causal link between “over”weight and the overconsumption of natural resources. But the focus on body size is increasing as well as the focus on the negative impact this is perceived to have on the efficiency and productivity of society. Apart from making many (“over”weight) people miserable, this focus is diverting attention away from the fact that the modern problems of health and life-style disease are a symptom of ecological crisis, as

⁴ The top 5 countries are Nauru, Federated States of Micronesia, Tonga, Cook Islands and Niue. Source: WHO Global InfoBase (<http://www.who.int/infobase/>) 20/11-2007.

well as a result of the mode and patterns of production, and the unequal distribution of energy, food and nutrients in the world system.

1.3 General geography and history of Samoa

The Samoan islands are part of the Polynesian cultural group, which covers an astonishingly large area of the Earth's surface (figure 3). Archaeological evidence suggests that the ancestors of the Polynesians settled the Tongan and Samoan islands soon after 1500 BCE, and during the next 2000 years spread out and settled the remainder of Polynesia as far as Hawaii, New Zealand, and Easter Island (Bellwood 1979:297, Kirch 1997). More specifically, Samoa is part of the cultural area known as Western Polynesia. Prior to human settlement the islands were covered by rainforest (Kirch 1997:4), but most of the important food plants in Samoa were introduced by the Polynesian settlers (Whistler 2000:8). As is generally the case in tropical rain forests, the soils in Samoa are relatively infertile with most of the nutrients tied up in the trees, and Samoans have therefore practiced shifting agriculture (Whistler 2002:130), primarily growing a number of starchy root crops.

The Samoan islands are of volcanic origin, the island of Savai'i being over 2 million years of age (Whistler 2002:1f). The two main islands of independent Samoa, 'Upolu and Savai'i are 1110 km² and 1820 km² respectively. The climate is tropical, with average annual temperature about 27°C. There is little seasonal climatic variation, and rainfall and humidity is generally high all year round (Ibid.:3f).

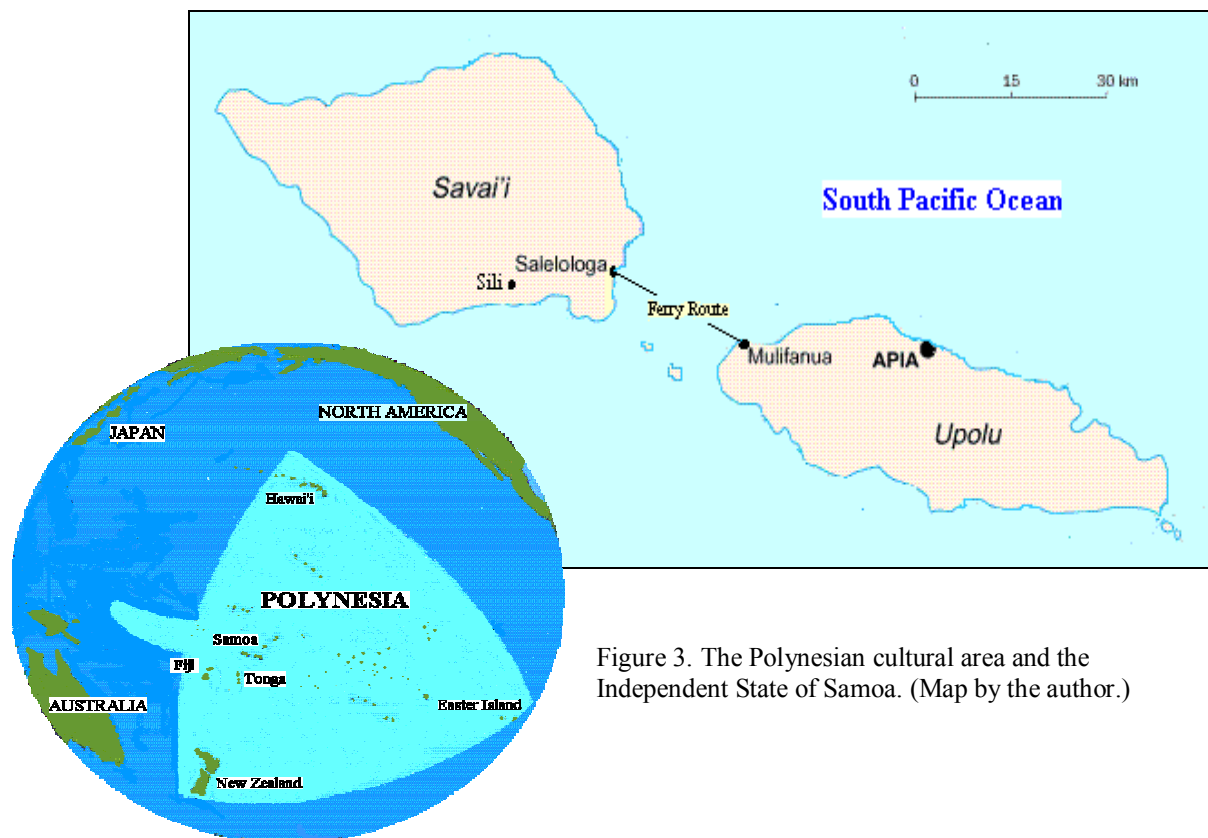


Figure 3. The Polynesian cultural area and the Independent State of Samoa. (Map by the author.)

For historical reasons the Samoan archipelago became politically divided. Britain, Germany and the USA all had colonial ambition in Samoa, but in 1899 the so-called Treaty of Berlin was signed and Germany and the United States agreed to divide the Samoan Islands between themselves. The eastern part of the archipelago came under the USA, while the western part came under first German and later, in 1914, New Zealand colonial rule (Holmes 1971:98). The western islands gained independence from New Zealand in 1962, and became known as Western Samoa. In 1997 the name was changed to the Independent State of Samoa. The eastern islands, American Samoa, remain an unincorporated territory of the USA. The field study was carried out in the Independent State of Samoa, which I will refer to in the following as Samoa.

The population of Samoa is estimated to around 187,000, and life expectancy is approximately 73 years (Samoa Statistics Department 2007), but at least another estimated 100,000 Samoans live overseas, mostly in New Zealand. Samoa's main export is fisheries, nonu-products⁵, and coconut-products, but because of the high level of imports, the trade balance is constantly negative. The trade deficit is compensated by foreign aid and by remittances from Samoans living and working overseas (Tisdell 2000). The term MIRAB-economies has been coined to characterize the economies of the microstates in the Pacific (Malm 2003:243ff). MIRAB is an acronym for Migration, Remittances, Aid, and Bureaucracy. Basically it means that people migrate and send home remittances to sustain their families, while foreign aid more or less is used to finance state bureaucracy. Recently the growing tourism industry is also contributing significantly to the economy and the tourism sector is now the largest revenue earner after remittances (*Island Business* 2005).

The Pacific was the last region on earth to be “discovered” and colonized by Europeans (with the exception of the Antarctic). As we have seen, Samoa was probably settled some time after 1500 BCE, but it was only in 1722 that the Dutch explorer Jakob Roggeveen is recorded to have been the first European to have set eyes on Samoa. However, European influence first began with the arrival of missionaries to Samoa in the 1830s (Whistler 2000:5). The transition to Christianity went very swiftly (O'Meara 1990:127), and today Samoans are a people wholly devoted to their churches. But it is important to note that the shift of faith did not fundamentally alter Samoa's political and social organization (Tcherkézoff 2005:270). Christianity was quite painlessly incorporated into the existing kinship system, and the Christian God took over the place of the ancient Gods (Ibid.:254). Although the colonial experience was harsh and destructive in the Pacific as it was in so many other places, the last 200-300 years of contact have not completely leveled out the ecology and cultures of these islands that remain unique and distinct. In 1962 Samoa was the first Pacific nation to gain independence, and they have a reputation of cultural conservatism and a strong historical resistance to Western acculturation (Tcherkézoff 2005:263). However, in the wake of the increasing level of contact and incorporation into the wider world system, many of the islands and territories of Oceania are facing a number of problems. Growing populations with growing demands on consumption results in pressure on limited natural resources and problems with pollution, waste, sanitation, and health. (SPC 2007:6f).

1.4 Choice of field

One reason why Samoa was the preferred choice for study is that Samoans have a reputation for cultural conservatism and for their pride in the *fa'aSamoa*, the “Samoan way of life” (O'Meara 1990:15). The country's constitution explicitly stresses the significance of Samoan culture and custom, the *fa'aSamoa*, and dictates that in accordance with tradition, land tenure is to comply with

⁵ Nonu is the fruit of a tree (*Morinda citrifolia*) of medicinal value, nowadays on demand worldwide.

the most important aspect of the *fa'aSamoa*, the *matai* system, or the *fa'amatai* (Lawson 1996:138, O'Meara 1990:143). The *fa'amatai* is the traditional kinship system in Samoa, and at the same time it defines the country's social and political organization (Tcherkezoff 2005). Moreover, Samoan law dictates that customary land is *inalienable* which means that it cannot be bought and sold. According to the Samoan Agriculture Survey from the year 2000, 89% of Samoan land is customary land (Government of Samoa 2000:11). Customary land is owned collectively by extended family groups, *'aiga*. Every Samoan belongs to one or more *'aiga* and therefore every Samoan belongs to a piece of land. The members of the *'aiga* choose a *matai* amongst themselves and grant him (or more seldom her) authority over the family land. Since every Samoan belongs to one or more *'aiga*, in principle, every Samoan through his or her family relations, has the possibility to be bestowed a *matai*- title and gain authority over family land (O'Meara 1990:140). These large extended family groups traditionally operated as economic units. However, as we shall see in chapter five, during the last half century or so the *fa'amatai* has become more individualized, because nuclear families want to reap the benefit of their own work (Ibid.:143ff). With the growing importance of cash cropping the economic rationale for the large extended family, the *'aiga*, is increasingly becoming lost (Ibid.:150).

Another reason why Samoa was the ideal choice for study is that in Polynesia, cultural perceptions on health, beauty, ideal body image etc, differ significantly and sometimes fundamentally from those typically found in Western society (Pollock 1992:223, Danielsson 1966:69). This makes for an interesting cross-cultural comparison between Samoan and Western/modern society.

1.5 General outline, and some key concepts

Chapter one has been a short introduction of Samoa and of the contextual background to the study. In chapter two I will present the analytical framework, and in chapter three I will account for the methodological approach in the field. Chapter four is a description in more detail of the cultural and structural perspectives of the health problems in Samoa, as well as their global context. In chapter five I will describe the Samoan kinship system, the *fa'amatai* and how it is related to cultural and social identity in Samoa. Chapter six will be a presentation of the actual field material, and in chapter seven I will analyse my field material by setting up a model of human-environmental relations in Samoa. With the help of these models and drawing on theories of unequal exchange I will discuss and answer the research questions.

Throughout this report I frequently use the words 'Western' or 'modern', and 'consumer(society)' to characterize traits of Western society. Although some may find these concepts reductionistic they are well-established in a long tradition within critical social science. I find the concepts are useful and adequate in this context, also because Samoans themselves use this distinction. Samoans use the term *Palagi* or *Papalagi* (pronounced palangi or papalangi), when referring to something or someone of European origin. In Samoa it has come to refer to Western/European as opposed to Samoan/Pacific.

When studying a phenomenon such as health it is important to remember that the meaning and content of such a concept is always defined within a specific cultural context, and even within the same cultural frame, it varies in time. This study departs from the position that the precondition of human health is the presence of ecological "services" to fulfil basic human needs of adequate nutrition, shelter, space, clean water, clean air etc, and even a stable climate and ozone-layer protection from solar radiation (McMichael 2000).

Sustainability has been a buzzword in recent years but the content of the concept has been used in so many different and conflicting ways, depending on what should be sustained, that a

definition is in place. To quote Goodland & Pimentel (2000:121), environmental sustainability can very shortly be defined as “the maintenance of environmental source and sink capacities.”

2. ANALYTICAL FRAMEWORK

As I have already pointed out, one of my objects with this field study is to investigate the effects of imported goods on human health and the natural environment in Samoa. By imported goods I am referring to all imports to Samoa, but my main focus is on imported food since food has a direct impact on human health. The health effects of for example imported tobacco, and the effect on dental health of sugar and refined carbohydrates are important aspects of deteriorating health, but they are not further considered or discussed explicitly in this study.

In an article on the relations between consumer culture and environmental change Richard R. Wilk (2006:418f) writes that some anthropologists who write about globalization argue that global goods and images are domesticated and appropriated locally; local cultures will thus persist because they absorb foreign ideas and practices into their own system. Many of the imported goods in Samoa have indeed become absorbed into the local system, and canned fish can be taken as an example of an imported food item that has become an integrated part of Samoan culture⁶. However, my aim here is not to discuss whether the cultural and symbolic content of imported goods in Samoa is local or global. It is unquestionable that the large imports of foreign goods to Samoa have an impact, symbolic as well as material, on Samoan society. But in order to understand fully the relation between these goods and human health it is necessary first to understand the relations between the natural environment and humans as social and cultural beings. Since human health is ultimately dependent upon the natural environment, an understanding of human-environmental relations is a necessary precondition for getting to a more fundamental understanding of modern health problems, both globally and locally.

2.1 The human ecological triangle

As a point of departure for such an analysis, lies the recognition that the study of human-environmental relations is triadic (Hornborg 2001:192). This means that in order to get an adequate understanding of human-environmental relations it is necessary to look at the three aspects of *nature*, *society* and *person*. It is in the recursivity between these three aspects of a single socio-ecological whole that any meaningful understanding of human-environmental relations must be sought (Ibid.:193). This triadic perspective is illustrated in the so-called human ecological triangle presented in figure 4.

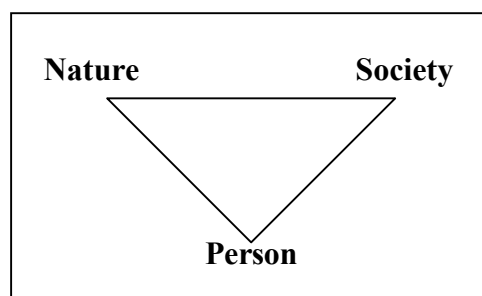


Figure 4. The human ecological triangle.
(Adapted from Steiner 1993:57.)

It was geographer Dieter Steiner (1993:56) who suggested the use of the human ecological triangle to “structure the discussion about a theoretical framework for a general human ecology”. One

⁶ For a discussion on foreign goods and cultural change in Samoa see Tcherkézoff 2005.

important realization that Steiner has pointed out is that the environmental crisis that we all talk about is not really a crisis of the environment. The environmental crisis is a result of human society, and the way we have chosen to organize our societies with little concern and understanding for their ecological foundation. As individual persons are the agents of human society, “the so-called environmental crisis is not really a crisis of the environment, but a crisis of we human beings” (Ibid.:49). This is good news in the sense that a crisis brought on by humans can also be undone by humans. And if we want to reduce our ecological impact we need to recognize that our environmental crisis is not so much an environmental or technical problem but rather a social and behavioral one (Wackernagel & Rees 1996:xi). Social behavior is closely linked with identity, and construction of identity is culturally defined. So ultimately, the environmental crisis can also be seen as a problem of culture.

In the following chapters I will use my field material as well as literary sources to describe and define some key characteristics of Samoan culture, society, and identity, and place them in the human ecological triangle, in order to get a holistic and adequate understanding of human-environmental relations in Samoa. By contrasting the “Samoan triangle” with a model of the human ecological triangle typical for modern/Western/consumer society, some of the differences in human-environmental relations will become visible. Discussing the findings of my field study, with these models as the point of departure, I will demonstrate that although the modern problems of health in poorer countries need to be addressed, Western dualist perceptions on health are not adequate – at least not if the solutions to the problems are to be sustainable. The models can also illustrate how some of the cultural institutions and perceptions that stand in the way of “development” in Samoa are arguably benefiting human health and the environment and halting ecological degradation. Finally, the models will help to illustrate how imported goods are a pushing factor of change in human-environmental relations in Samoa.

Of course, no model can do justice to reality and capture all aspects of it. This is also true for the human ecological triangle; it is a subjective *model* of reality. But I do believe the human ecological triangle is an adequate tool in the study of human-environmental relations and, as is the purpose of this study, to investigate the interrelations between human health and the environment.

2.2 Ecologically unequal exchange

While the human ecological triangle is the overarching analytical framework that will structure the presentation of the field material, other approaches must also be employed. To analyse the effects of imported goods on Samoan society I will use concepts and ideas from the discourse of *ecologically unequal exchange* (e.g., see Martinez-Alier 2002). The methods used to measure ecologically unequal exchange are based on energy-economic models of the environment that began to emerge in the 1920s (Worster 1994:311), departing from the physical laws of thermodynamics (Hornborg 2001:40). The pioneer in this field was Howard T. Odum, who used the concept of *emergy* to signify the embodied energy that has been invested in a product (Ibid.:40). Unequal exchange has also been a central concern within certain strands of social theory, including early theories of imperialism, and dependency and world system theory (Hornborg 1998b:128). There are however inherent difficulties in the concept and study of unequal exchange, particularly in merging the material and social aspects of it. Material properties of traded goods can be measured in different ways, but an exchange relation is by definition also a social or symbolic relation of *value* between the things being exchanged, and thus any attempt to measure such a relation will be reductionistic. Within anthropology, studies of material flows or ecosystem studies have been criticized for being “obsessed with calories”, and missing the symbolic and informational aspects of ecosystems (Moran 2006:19).

However, since figures from the FOA, the World Bank and the WHO show that about one of every six people in developing countries (and about one of every three children) is chronically undernourished despite the fact that there is enough food in the world (Miller 2004:285f), and with the recognition that consumption of resources in one place is likely to impoverish local ecosystems elsewhere and diminish the vital services they provide (Imhoff et al 2004), the need for analytical tools to understand the nature of (ecologically) unequal exchange is pressing. Also when it comes to problems of human health such an understanding is crucial – but no less problematic. One of the pioneers in the field of ecosystem studies, Roy Rappaport, argued that the key to an anthropological contribution to global ecological issues is to include both the ‘microanthropology’ of ethnography and also the ‘macroanthropology’ of for example world systems dynamics (Wilk 2006:419).

Alf Hornborg has presented one such analytical framework of unequal exchange, using *exergy*, the quality of energy, as a measure unit. Hornborg deconstructs the role of modern technology in facilitating ecologically unequal exchange, and is able to show that “[u]nequal exchange in the world system is what reproduces machines, and machines are what reproduce unequal exchange” (Hornborg 2001:44). In other words, machines and industrial technology in general, appropriate a very large portion of the Earth’s available resources. Most relevant to the argument I will pursue in this study, is Hornborg’s argument that unequal exchange is always an appropriation of time and space. While machine technology, and industrial production, “saves” time in one place, it happens “at the expense of time and space consumed elsewhere in the social system” (Hornborg 2007:270). In his analysis Hornborg uses a physical concept, energy, which is difficult to translate into empirical research (Ibid.:261). Other recent approaches to measure ecologically unequal exchange come from the field of political ecology and attempt to measure in economic terms the exchange between countries and regions of the world, when all social and ecological externalities are included (Guha & Martinez-Alier 1997:44f, Martinez-Alier 2002:213). These approaches expose inequalities and injustices in global exchange relations, and they also expose that the exchange happens at the expense of the environment and of health (Martinez-Alier 2002:215). However, when it comes to more specific issues such as exchange and distribution of food and nutrients, the picture becomes more complicated. Because using for example energy as a measure unit, how do we explain that people who are obese are victims of unequal exchange? And how can one determine and measure in economic terms the inequality or injustice of consumption choices? The answer is that we cannot measure these things. However, we can see that the global distribution and the local availability of foodstuffs are contributing to making many people ill. We can also see that this illness is more likely to hit the poor than the rich. So although it cannot be measured quantitatively the distribution of food and nutrients can be incorporated into the discourse of ecologically unequal exchange (Martinez-Alier 2002:227ff). Martinez-Alier writes that ecologically unequal exchange is born from two causes. The first one is that “[p]overty and lack of power induce local environment and health to be given away or sold cheaply (...) In the second place, the ecological time necessary to produce the goods exported from the south⁷ is frequently longer than the time required to produce the imported manufactured goods or services” (Ibid.:219; my footnote).

⁷ Martinez-Alier uses the word ‘south’ to denote the poorer or regions of the world.

3. METHOD

The field study was conducted throughout the months of May and June 2007, from May 1st to June 27th. During this relatively short period of time I visited the islands of ‘Upolu and Savai‘i, which are the two main islands of independent Samoa. Generally, the island of Savai‘i is less developed, more traditional and also less densely populated – only about 40.000 people out of the total population of 187.000 live on Savai‘i.

The study was carried out as ethnographic field work, which is a qualitative and anthropologically oriented method (Alvesson & Skjöldberg 2000:45). This method ideally requires that the researcher spend more time in the field than was the case here (Fetterman 1989:18). The short field period meant that there was relatively little time to get acquainted with local circumstances, language etc, and the general structure and workings of society, before beginning the actual field study.

When I decided to make a field study in Samoa, I contacted the School of Agriculture and Food Technology (SAFT) in Samoa, which is a branch of the University of the South Pacific (USP), located at Alafua close to Apia. Fortunately they agreed to assist me in my field studies, and for that I am very grateful. My supervisor in the field, Dr. Sonny Lameta, teaches agricultural economics at Alafua and was a great help to me in discussing issues and topics of relevance to my study, as well as setting up interviews for me. Dr. Lameta also arranged for me to have an assistant when I travelled to the island of Savai‘i, and Saipele Komiti, “Ace”, at the Agriculture Department proved very valuable to me. He was my guide and interpreter around the island, and arranged interviews and visits for me as well as being generous with information on all kinds of questions.

I had planned to make a triangulation of observations, interviews and statistics in order to find out to which extent and why Samoans choose to consume imported food rather than local food. This was a good way to start my field work since it did not require much preparation, and even across cultural and language barriers people can usually always talk about food. I frequented the food markets and supermarkets, made informal interviews, estimated nutritional value, and took notes on observations of price and availability of imported and local food. However, after a short “get-acquainted” period (Fetterman 1989:18), a new research design appeared. Guided by local circumstances, my supervisor, and what I learned from my informants about health, environment and development in Samoa, the result was a study on human-environmental relations and the impact of imported food on health and environment in Samoa.

The study is primarily based on interview material. Most of the interviews were informal, and often took place during normal conversations (Fetterman 1989:49). However, I always tried to make sure that the people I interviewed knew why I was asking them questions. Some of these longer interviews/conversations were recorded with an IC recorder. The more formal interviews with officials and employees, and with people from NGOs, might be characterized as semi-structured (Fetterman 1989:48), in the sense that I had some fixed questions about health, environment, and development that I found to be generally relevant and necessary for my study. But otherwise I tried to keep an open mind and be led by what the person I interviewed believed was important for me to know. These formal interviews were all recorded.

3.1 Reflections on the researcher role

Although more and more tourists arrive in Samoa – almost 68 000 in 1997 (Stanley 2000:60) – and there is a small community of *Palagi* people, especially in Apia, I was immediately spotted as a foreigner among Samoans. In my role as researcher, I arrive in the field with a set of preconceptions about the world and thus I interpret what I see through my own ideological and cultural lens. Such

cultural bias is always present in ethnographic research (or any other research for that matter) (Fetterman 1989:11). However, it is equally important to remember that Samoans are also biased towards me as a *Palagi* woman and have preconceptions about what I know and think about them, and this has an influence on the answers they give me. Therefore a proper introduction of my knowledge on Samoa, my study, and myself was often necessary if I wanted serious answers, even if the question only concerned a piece of taro.

Samoa has been known to pose particular problems for researchers because there is a strong emphasis in Samoan culture on the priority of social interests over personal ones (Howard 1986:175f). This can lead to “courtesy-bias”, meaning that people will give you the answer they think you want to hear, and/or a “social-approval-bias”, meaning that people will give answers that comply with accepted social norms rather than with actual behavior (Ibid.:176). I cannot know of course to which extent this study is marked by cultural bias and misunderstandings. However, I did not myself experience this as an overwhelming problem, and by using triangulation (Fetterman 1989:89pp), constantly comparing different information sources I hope to have at least minimized the problem.

Perhaps a note on personal bias is also in place since ethnographic research begins with the selection of a problem or topic of interest (Fetterman 1989:13). Which problem or topic is chosen reflects of course the interests of the researcher. Apart from a fascination with the island societies of Oceania, my choice of field and topic reflects my indignation about the health problems these societies face as a result of their relations with the surrounding world. Indeed the indignation is not restricted to Oceania but includes the increasing number of poor people and people in so-called developing countries, which are losing their health and livelihoods as a result of the unequal distribution of resources and risks in our world.

4. GLOBALIZATION, ENVIRONMENT, AND HEALTH

Thomas Malm (2007:278) has convincingly argued that the *isolation* of Pacific islands is not the root cause to the problems of health and environment there today, but rather the increasing *contact* and incorporation into the wider world system. Likewise, Nancy Pollock (1986:106) writes that malnutrition was not a feature of the health of Pacific peoples, until the urban sector developed. Life-style disease such as diabetes, ischaemic heart disease, hypertension and gout are rare in populations maintaining their traditional life-style, and mainly appear in their urbanized counterparts (Pollock 1992:222). The main causes to the modern health problems in Oceania can be attributed to “the deterioration of traditional food systems due to factors such as population growth, urbanization, lack of land, and dependency on money and commercial goods” (Malm 1999:352).

Ever since the early period of colonization, Europeans have imposed their ideas and notions regarding health and adequate nutrition on local populations – also in Oceania – believing that any change towards Western practice would be an improvement (Pollock 1992:171). But in 1979 a nutrition study among rural and urban populations from Tonga presented the researchers with an unexpected result (Clark & Richards 1979). The study was to determine differences in rates of growth and development of children living in rural and urban areas. Contrary to their initial hypothesis the researchers found that the children in rural areas were better nourished than their urban counterparts. Another study from Tonga (Finau 1987), carried out in 1973, showed that, not very surprisingly, people on the outer islands (rural areas) had a more traditional diet than people in the urban areas of the larger island. While root crops were the meal staples in the rural areas, processed foods and refined carbohydrates were the staples in the urban areas (Finau 1987:40). Studies from Samoa (Schoeffel 1985) have shown that the best documented health problems there are associated with nutritional deterioration, and that this deterioration is linked to the increased use of imported foods. One of the reasons why imported food, particularly canned, has been given a higher status than local food is that “well-intentioned health education programmes (...) have reinforced the notion that imported foods are superior to local foods, and that traditional diet is nutritionally inadequate” (Pollock 1992:210).

Conventional research in traditional subsistence economy populations holds that as these populations have experienced more outside influence, particularly since the 1950s, they have tended to show signs of improved health (Baker 1986:6). In Samoa, crude mortality rates have dropped in response to better health care, higher fertility rates, and declining levels of mortality from infectious disease (Baker & Crews 1986:93). However, a variety of findings also suggest that other aspects of health (those that are popularly referred to as life-style disease) decline, and that the individuals themselves perceive the changes as stressful and difficult (Baker 1986:6f). Moreover, the general health improvements of the past century have been positively correlated with physical disruption and chemical contamination of our environment, and the damage to global and regional natural systems may endanger the long-term sustainability of population health (McMichael 2000).

The consequences of food and life-style transition have now become evident in the Pacific, and The World Health Organization Representative in the South Pacific, Dr. Chen Ken is cited for saying that diabetes and other life-style disease account for 70% of deaths in the Pacific. The main causes to this development are well known; smoking, diet, and physical inactivity (*Newsline* 2006). Likewise, figures from the National Health Survey in Samoa carried out in 2005 show that the frequencies of diabetes and other non-communicable disease have increased dramatically, and affect a very large percentage of Samoan households (personal communication, Dr. Satu Viali, May 4th 2007).

Prior to European colonization the people of Oceania had formed unique and diverse societies that were in their own different ways adapted to the ecological and environmental

conditions. However, with increasing contact these conditions changed dramatically and very rapidly, and social and cultural institutions are seldom geared to handle effectively the negative impacts of increased contact. Such cultural institutions have traditionally – directly or indirectly – regulated the exploitation of natural resources (Malm 1999:360f), but have often been distorted, replaced, or simply rejected as marked economy has opened up for new ways to exploit the environment and accumulate capital. In Samoa the traditional land tenure system has remained in place through all the changes and pressures of the colonial and post-colonial period, but it has conformed to new realities (O’Meara 1990). Samoans have also continued to treat the reefs adjacent to their villages as village property (Malm 1999:363). This means that the access to natural resources in Samoa largely has remained within the *aiga*, and Samoans have retained relatively good access to their local resources – something that is imperative in securing human health in low-income countries.

4.1 Health in the West versus health in Samoa

The processes that we popularly call ‘globalization’ have linked practically every corner of the globe to the global world market. But cultural ideas do not spread as easily and readily as commercial goods. Modern/Western ideas and concepts of health, beauty etc, differ significantly from those traditionally found in Polynesia and Samoa.

Research in the US shows that overweight and obese individuals experience stigmatization in many domains, including education, employment, and health care (Schwartz & Puhl 2005:305). In modern society slimness and even thinness has become associated with health, and the health education message that being overweight is a health risk, has become absorbed into the conventional wisdom. (Featherstone 1991:185, Chambliss & Blair 2005:250, Hesse-Biber 1996). This connection between health and slimness was *not* found in Samoa and in Polynesia in general. In contrast, a large physical stature was not considered “over”weight but associated with health and well-being (Pollock 1992:197).

While historical and ethnological records suggest that obesity in Polynesian society was associated with prestige and well-being, it is interesting to note that early descriptions from Tonga⁸ actually do not give us a picture of a society with many obese persons. In 1777, for example, it was stated by a visitor that “among the many thousands we were at different times associated with, we saw exceeding few Exceptions to that exact Symmetry and proportion in which they seem peculiarly bless’d. The Agee’s [*eiki*, ‘chief’; *ali’i* in Samoan] are some of them rather over-loaded with flesh, but their Countenances bespoke both a plentiful and salutary Diet. The Women are as perfectly form’d as the Men” (Clerke 1967[1777]:1308). In fact, Houghton (1996:72) argues that whereas the term ‘corpulent’ is common in early descriptions of Polynesian people, it was usually meant to refer to a large body size, muscle as well as fat, but fatness was mentioned as a separate and specific feature. To quote Hau’ofa (1977), writing about Tonga in the 1950s, “we did not have to rely for our daily fare on the fatty mutton flaps from the gutters of the abattoirs of New Zealand, and our blood pressure was normal, our hearts stout and healthy.” Thus, one has to conclude that exercise, in combination with healthy foods, resulted in big and strong rather than obese people (Malm 1999:353). That the chiefs were often obese, “over-loaded with flesh”, can be taken as an indication that being fat became regarded as looking like a chief. And if one looked like someone who did not have to work, this could mean that obesity became more or less synonymous with high status. However, modern studies of Samoans’ perceptions on health and obesity suggest that obesity is considered a consequence of high status rather than a prerequisite for achieving it, and obesity is

⁸ Tonga and Samoa can in many aspects be regarded as one cultural area (e.g., see Campbell 1995).

not positively correlated to health among Samoans today (Howard 1986:197). Obesity can therefore not be seen as a result of cultural values that lead people to try to gain weight (Ibid.:197), and the causes to obesity and related non-communicable disease should be sought elsewhere.

The apparent widespread and general presence of weight bias and stigma in Western/modern society has been explained with the emphasis on personal responsibility and individualism in Western ideology. In countries with more collectivistic ideologies, views on overweight are more positive and people are less concerned with weight (Crandall & Reser 2005:89). As Nancy Pollock (1992:201) puts it: “In the Pacific, health was a shared sense of well-being, not the individual feeling as Westerners see it. It was built on the basis of sharing food as a symbol of caring and mutual support.” Fitzgerald writes about the perception of food among Pacific islanders:

The island dictum is “eat when you are hungry” or when food is available. The perishable nature of island foodstuff has made accumulation and saving difficult. When food was abundant one feasted; in times of hurricane or famine, there was necessary restraint. This *feast or famine mentality* is a deeply ingrained psychological reaction to food use that has shown remarkable persistence (Fitzgerald 1986:71; my emphasis).

Since food could not easily be preserved and stored, the best way to accumulate it was in the body. This is reflected in a Samoan saying: *Le polo e nanea mea mata, ae le nanea mea vela* or “eat while you see it” (Pollock 1992:57). Today, with the constant availability of relatively cheap low-quality but high-calorie food, and lessening importance of physical work, this “feast or famine” mentality naturally leads to increasing body weight – and deteriorating health.

Keeping in mind the “feast or famine” mentality of the Polynesians, it is interesting to note that Ron Crocombe writes that one of the important differences between Western and Polynesian cultural values is the emphasis placed on goods as against personal relationships. While a high value is placed on the *accumulation* of property in the West (and elsewhere), in Polynesia the emphasis is on *distribution* (Crocombe 1987:81). This difference that Crocombe describes is quite tangible in Samoa, and it manifests itself in many different ways. For example, during my relatively short stay in Samoa, I met surprisingly many frustrated *Palagi* entrepreneurs who had tried to set up business, initially finding it virgin soil with plenty of potential. They had been positively surprised by generous invitations into some Samoan village, but after a short while most of them had fled the village, because they felt abused by villagers who constantly borrowed something or raided the fridge etc. This is just one example of how the cultural emphasis on sharing in Samoa can be a frustrating experience for a *Palagi*. In the same vein, Tcherkézoff (2005:264) writes that capitalist-style accumulation in Samoa is almost impossible, because of the cultural value on distribution.

The cultural emphasis on distribution and sharing rather than on accumulation of goods and property is an important clue for understanding the current health problems in the Pacific (and elsewhere), and why they are so difficult to combat. The modern problems of health and diet in Samoa are, as we have seen, largely caused by external factors. But internal factors such as consumption needs and wants and cultural strategies of accumulation are equally important.

4.2 Cultural strategies of accumulation

Again, stigma and bias attached to overweight in modern Western society is well documented (Brownell et al 2005) – the consumption of natural resources is *not* supposed to result in accumulation in the human body as body fat. But this does not mean that modern society does not otherwise encourage “growth” and consumption – in fact, growth is generally seen as imperative for securing prosperity and well-being, and it is closely related to the accelerating use of natural resources, which are accumulated in industrial goods and machine technology. This cultural

strategy of industrial and technological accumulation stands in stark contrast to a cultural strategy where natural resources are mainly accumulated in the human body. But seen in a global perspective, the ecological impact of this modern strategy of accumulation is far greater than a strategy that results in obesity. While the development of industrial machine technology and increased production is in fact a precondition for the modern problems of health, there is a tendency to blame individuals rather than their conditions. If poverty and poor people were the culprits of environmental degradation in the previous decades (Guha & Martinez-Alier 1997:46f), it seems obesity and obese people may become the scapegoats in the decades to come. One example of such misplaced blame is a front-page headline in a Danish newspaper saying: “Obesity is smashing the environment”, followed by an article on airline traffic that makes a number of calculations on how much extra CO² omissions obese people are guilty of, because of their body weight (*Nyhedsavisen* 2007). Another example of this trend is from New Zealand, where an estimated 100.000 Samoans live. A qualified specialist technician from the UK is headhunted for a job in New Zealand. However, because his BMI measure (Body Mass Index) is too high, he is refused a visa on the grounds that the New Zealand Immigration Service “could not afford to import people into the country who were going to become a significant drain on our health resources” (*New Zealand Herald* 2007b). New Zealand business on the other hand has no problems with exporting low-quality food to the Pacific Islands and thereby contributing significantly to health problems and obesity there.

4.3 Dietary health in a global perspective

According to the World Health Report 2002 (WHO 2002), childhood and maternal underweight is the number one threat to global health today. But at the same time, in this report, obesity is ranked among the top 10 risks to human health. The simultaneous occurrence of under- and overweight has been called the “dual burden of malnutrition” (Hawkes et al 2004/2005:20), and it illustrates the unequal and inappropriate distribution of food and nutrients among the global population. Obesity is not only a problem in the so-called developed world (Schmidhuber & Shetty 2004/2005:13). On the contrary, overweight and obesity are becoming problems of the poor (Hawkes et al 2004/2005:20).

Although the reasons and characteristics of this development vary in and between societies and regions one contributing factor is the so-called nutrition transition: more and more people are becoming less and less dependent upon their local environments for subsistence needs. Instead of subsistence farming people are increasingly, by necessity or choice, buying their food. Polished, refined foodstuffs tend to be cheaper than more solid foods and naturally the poor are inclined to buy cheap. Often the nutrition transition means that people go from a (rural or traditional) diet rich in fibre, minerals, and vitamins towards a more sugary, salty, and fatty diet, rich in energy, saturated fats and cholesterol (Schmidhuber & Shetty 2004/2005:15). In fact, studies have shown that global availability of cheap vegetable oils and fats has led to a greatly increased consumption of fat worldwide, and especially in developing countries, where low-cost hydrogenated fat is frequently consumed (Helman 2001:46, Nishida et al 2004:247). In urban areas access to fresh food such as fruits and vegetables is limited (Schmidhuber & Shetty 2004/2005:15), and if it is available it is often too expensive for the poor. The only available and affordable option becomes the high-calorie low-nutritious food. Under these circumstances malnutrition and life-style disease is more likely to hit the poor than the rich.

In this chapter I have considered some of the historical, cultural, and structural/political reasons for the current health problems in Samoa. Samoa has undeniably been hit by globesity, but the nutrition transition has only partly taken place, because contrary to other nations and people in

the same situation, most Samoans are still connected to their family land, which continues to provide an alternative to the imported health-compromising food items.

5. LAND AND IDENTITY IN SAMOA

Before I present the empirical field material I will devote a short chapter to a deeper discussion of Samoan identity, the *fa'amatai*, and the status of land in Samoa. Knowledge of these specific features of Samoan society is important for understanding the current situation in Samoa, and they are also vital aspects of human-environmental relations.

In Samoa the two most important principles in the construction of cultural/social⁹ identity are the *fa'aSamoa* and the *fa'amatai*. *Fa'aSamoa* is often translated into English as “the Samoan way (of life)” and it encompasses all aspects of the Samoan lifeworld. The organizing principle of the *fa'aSamoa* is the *fa'amatai*, and traditionally, every thing and being or even geographical feature had its right place in a strict hierarchy (Tcherkézoff 2005:262f). Still today, every Samoan is included in this system of belonging, and knows his or her right place in the hierarchy (Ibid.:256). Also the land tenure system in Samoa derives from the system of family organization, the kinship system or the *fa'amatai* (Holmes 1971:91). I have already mentioned that the constitutional and political system in Samoa is modelled on the *fa'amatai*, and although Samoa is considered a democratic state, universal suffrage was only introduced in 1990. Before that only *matai* were eligible to vote. Still today only *matai* are eligible to stand for election to the Samoan Parliament (Lawson 1996:149). *Matai* is often translated into English as a “chiefly title”, and as such the *matai* is the head of the family. The title is assigned to the person in question (most often a man) by the other family members, and he or she is then the family representative and in charge of all family matters. Every family member has to do what he or she is told, which often includes handing over the pay checks (if there are any) to the *matai*, who is then free to (re)distribute the money as he or she sees fit. However, if the *matai* fails to live up to his or her responsibilities or otherwise is not reckoned to be fit to hold the title, the decision that was made by family consensus can be undone by it, and a new *matai* has to be found. In later years there has been some inflation in the number of *matai* titles, primarily because of the Samoan electoral system (Lawson 1996:140, O'Meara 1990:152).

Traditionally (and ideally), however, the *matai* title is always synonymous with a piece of land. And in fact, when Samoans speak of *matai*, they speak not of a chiefly title but of a *name*. The *matai* name designates a piece of family land, so the *matai* name is really a denomination of land. It is the land and the *matai* name associated with it, which is the locus and institution of power – not the person that happens to carry the name for the time being (O'Meara 1990:138,143,145 footnote). And here we come to a fundamental difference between Samoan and Western mindset. The sale of land was traditionally unknown in most of the Pacific Islands (Crocombe 1987:107), and actually, in the South Pacific many people take it for granted that the land owns the people and not the other way around. That means that from a Samoan point of view, land is *inalienable* since it belongs to an ancestral name, which can ultimately be traced back to the divine (Tcherkézoff 2005:281).

5.1 Western/European and Samoan perception of land

In the first period of contact the fundamental difference in perception of land led to misunderstandings between Samoans and the colonizers. Lowell Holmes writes that the misunderstandings were a result of the “different concepts of land tenure and alienation held by Samoans and Europeans” (Holmes 1971:97). The Europeans thought they were buying the land, while the *matai* thought he was granting an adoption, an unlimited right of use (which could be revoked by family consensus) (Tcherkézoff 2005:283). Therefore, between 1850 and 1900,

⁹ Samoans will generally not separate between social and cultural identity (Tcherkézoff 2005:255)

Samoans sold Europeans three times the total area of the country (Crocombe 1987:111). In the end, only about 8% of these land claims were eventually approved, and in 1900 further land alienation was largely prohibited by the German Colonial administration (Holmes 1971:97). Nevertheless, this difference in perception on the status of land still today leads to the same kind of misunderstandings, and so-called cultural clashes, at least on the *Palagi* side. One rather ironic example is a case where (Western) environmental organizations have leased land from Samoan villages in order for them to use it only traditionally and sustainably, only to realize that some of the land was later re-leased for further development (Whistler 2002:151).

At independence in 1962 the Samoan Government made a constitutional provision forbidding all alienation of customary land (Holmes 1971:98). So according to Samoan law customary land cannot be sold or bought, and thus no foreigner can own Samoan land. The land still remains under the *fa'amatai*, and officially the *fa'amatai* is still the legal norm for land tenure in Samoa (O'Meara 1990:147). But although the principals of the *fa'amatai* and land tenure have not changed, the context within which these principles operate has changed significantly (Holmes 1971:99). In reality land tenure has become more individualized as Samoa has become more integrated in the global system, and a new land tenure system now exists alongside the old (O'Meara 1990:143). The main reason for this change is the introduction of cash-cropping. With the growing importance of agriculture as a source of cash (or a way to avoid cash expense) individual interests become more important (Ibid.:148).

We see that the *fa'amatai* has changed to meet some of the problems and challenges brought on by a general modernization of Samoan society. At the same time the *fa'amatai* is widely seen as standing in the way of economic development (O'Meara 1990:7). Already in 1884 George Turner, an early Protestant missionary, wrote about the *fa'amatai* that: "This communistic system is a sad hindrance to the industrious, and eats like a cranker-worm at the roots of individual or national progress" (Holmes 1971:100). The field material will show, that this perception is still alive and well. Also, while I was in Samoa, there was much talk of a new Land Bill proposed by the Samoan Government. It was hard to get much information on the actual content of the Land Bill proposal, but it was an issue that preoccupied people, and most, but not all, believed it was a proposal aimed at changing the status of land in Samoa – to make land alienable.

5.2 Identity in Samoa – a sense of belonging

Serge Tcherkézoff has written on identity in Samoa and defines identity as a system of belonging. In Samoa this system of belonging is the kinship system or the *fa'amatai* (Tcherkézoff 2005:246). Identity in Samoa is first and foremost based on kinship or family, and family, *'aiga*, is again defined by the *matai* name and the land it denominates. In this system, the status of land is very important. In Tcherkézoff's own words, "the status of the land is the basis of everything" (Ibid.:284). This is also a statement I am continuously presented to in Samoa, by people from all sectors of society, namely that social identity and indeed the whole social fabric of Samoan society is ultimately based on the inalienable status of land. At the same time many believe that changing the status of land and conforming to the practices of the surrounding world is the only way forward for Samoa – seemingly this is also the view of the Samoan Government (Ibid.:277). Such a change would undermine the *fa'amatai*, and when the system of belonging changes there would probably be a fundamental change of identity (Ibid.:247).

To sum up, we see that social and cultural identity in Samoa is *embedded* in the kinship and land tenure system, the *fa'amatai*, and that land is *inalienable* both by law and by custom.

6. HEALTH AND ENVIRONMENT IN SAMOA

I now come to the presentation of the actual field material, which can be divided into two parts: the first part seeks to answer the question of why Samoans choose to consume imported food. The second part departs from the case of the village of Sili and presents some of the different views on land, subsistence strategies and development that I found in Samoa.

The field material consists of field observations and interviews. Together with general observations and conversations with my supervisor and assistant in the field, the material builds on formal and informal interviews with people at the markets and supermarkets, in villages, people involved in business, entrepreneurs etc. Two formal interviews were made with staff from NGOs in Samoa. One is with Fiu Mata'ese Elisara-Laulu, the Executive Director of the Siosiomaga Society. The Siosiomaga Society was established in 1990 (with funding from the Swedish Nature Society, SNF), and was the first environmental NGO in Samoa. The other is with Karen Mapusua, Associate Director with the Women in Business Development Inc. (WIBDI in the following). WIBDI was set up in 1991 as a non-governmental organization to help women and young people in the villages to generate income making traditional crafts and using the resources available to them in the villages. The aim is to enable women to stay in the villages rather than having to move to the urban areas or leave the country. WIBDI is also encouraging organic agricultural practices and they have had much success with for example the production of organic coconut oil. One informal interview was made with an employee at the Ministry of Health, and two formal interviews with officials at the Forestry Division (in Apia, 'Upolu) and the Agriculture Department (in Salelologa, Savai'i). Finally, I was lucky to be invited into the village of Sili on Savai'i. In more than one way, the situation in Sili, can serve as an illustration to the problems and issues I try to approach in this report.

In general, what I found in Samoa while conducting my field work was a huge frustration over lacking development in the agricultural sector, and an almost equally large frustration with the health situation. But I found that people usually do not talk about these two problems at the same time. In most of the interviews, we either talked about health/food and development, or we talked about land issues and development. I will begin my presentation of the field work at the Ministry of Health, where I was lucky to meet an employee who gave me a thorough explanation of the health problems in Samoa, and showed me the recommendations and educational campaigns run by the Ministry to promote healthy diets and life-style. At the Ministry of Health the policy is to encourage consumption of locally grown food together with rice and bread. Especially the local starchy root crops such as taro, giant taro or *ta'amu*, breadfruit, yams, cassava and sweet potato are recommended. Much of the imported food, especially canned meat, turkey tails, mutton flaps etc, is discouraged, and instead they advice people to rely on the local protein sources such as fish, shellfish, chicken, and pigs.

Next to the large consumption of fatty meats, the biggest problem according to my informant at the Ministry of Health is that people do not eat enough fruit and vegetables. People eat the starches but although vegetables and especially fruit is abundant in Samoa, people do not eat as much of it as one could expect. Many people grow vegetables but a large portion of it is sold at the market. In other words, people sell their vegetables and fruit at the market and often buy low-quality imported food for themselves. This claim that people sell their healthy food instead of eating it is a frequent reply when I ask about health in Samoa. Fruit and vegetables were not perceived as an important part of the traditional Samoan diet, and this is probably part of the explanation why people still do not eat much of it. Papaya for example was considered mostly as feed for the pigs (Pollock 1992:207).

The official recommendations encouraging consumption of locally grown food clearly confirms the objective that Samoa should aim to be self-sufficient in staple foods, and the notion that people should (continue to) have access to land and local resources. The Agriculture Survey from the year 2002 showed that about 81% of Samoan households are agriculturally active. (99,7% in Savai'i, and 76% in the area around Apia) (Government of Samoa 2002:10). Although this is a large percentage, much of the local produce is sold at the market, so just because people are members of agriculturally active households this does not necessarily mean that they are self-sufficient in staple foods.

The official message from the Ministry of Health is clear: eat local food, and do not eat too much (low-quality) imported food. But lacking knowledge about the negative health effects of imported food is probably not the explanation why inappropriate eating habits persist. A survey conducted in New Caledonia among Pacific islanders suggested that lack of knowledge about health and diet, is not the primary cause of the health problems in the Pacific (Snowdon & Tunidau Schultz 2001). The authors of the survey suggested instead that people's (perceptions about their) control over their own health should be studied. Likewise, a study from Tonga on health and diet found that consumption of health-compromising imported foods was not related to food preferences or to perceptions of nutritional value, but rather to cost and availability (Evans et al 2001).

6.1 Local food and imported food - the markets and the supermarkets

Every village in Samoa has at least one small shop, where villagers can get their necessities, mostly imported dry and canned food that keeps in the hot and humid climate. In Apia and Salelologa¹⁰ you find the big fresh food markets where people buy and sell local food. Likewise it is here that the big supermarkets are selling imported food. At the market you find all the root crops that people are encouraged to eat, but also fruits and vegetables such as banana, papaya, mango, vi¹¹, pineapple, avocado, tomatoes, cabbage, pumpkin etc. In the supermarkets on the other hand, there are very few local products; in addition to different kinds of merchandise, soap, washing powders etc, the supermarkets sell mostly dry, frozen and canned food, rice, biscuits, sweets, and dairy products. One or two of the supermarkets in Apia have a wider variety of fresh imported food, but they are very expensive and the only Samoans I ever saw there were the workers.

Initially it is surprising to see the large quantities of canned fruit on the supermarket shelves in a country where delicious fruit is rotting on the trees and on the ground. In Samoa you are never very far from a fruit tree, and all-season fruits like banana and papaya are always available. Perhaps even more paradoxical to the outsider are the imported cans of coconut-cream, because in Samoa there are so many coconut-trees that you literally always have to watch out, lest the coconuts fall on your head. Import statistics actually show that Samoa imports fresh re-exported coconuts from New Zealand. When I asked people if and why they prefer the packaged, canned or frozen imported food, there were many different reasons and opinions. Without exception they agreed that some imported products were essential in every Samoan household. When it came to imported meats and bread or rice, it was mostly a matter of preference, cost, availability, and convenience. First of all, imported food is always available (in the shops). Second, it keeps well in the hot and humid climate. Food that keeps is more practical and does not require as much planning in the household. As one young girl at the supermarket told me when I asked why she would prefer a canned pineapple to a fresh one: "because it is easier to open the can than to peel the pineapple."

¹⁰ Salelologa can be described as the center of commerce on the big island of Savai'i. The fresh food market and the supermarkets in Salelologa are quite similar to those in Apia but much smaller. For convenience I therefor mostly limit my discussion to Apia.

¹¹ Vi (*Spondias dulcis*), or the 'Otaheite apple', is an aboriginally introduced fruit, somewhat like a small mango.

After hearing this and similar answers time and time again, it led me to think that, contrary to my initial presumption, cost and availability were arguably not the primary reasons for choosing imported food. Equally important was the circumstance that imported store-bought food does not require as much preparation time or effort – imported food is simply more convenient. This is not to say that cost and availability are not important factors for consumption choices, but the underlying element of time is crucial for understanding why imported industrial food is often preferred over locally produced food. As an example we can take the case of taro versus rice.

6.2 Taro or rice

In Polynesia, the starchy root crops were considered the main component of a meal (Pollock 1992:22), and traditionally, taro was the most prestigious food in Samoa (Whistler 2000:15). But when you are in Samoa, you soon realize that in some areas at least, rice has taken over the role as the main meal staple. Rice is very cheap, and you find the sacks and smaller plastic bags in every supermarket in Samoa. The rice I am told is imported from Australia¹² and people tell me that in Samoa today “everybody eats rice – even the animals eat rice!” In some rural areas though, people still depend mostly on the starchy root crops.

When I ask people if they prefer rice rather than taro, most of them say no. But taro is very expensive. In the area around Apia I am told that people mostly eat taro only on Sundays for the *to'ona'i*, the big Sunday meal. For the Sunday meal a traditional *umu* oven is often prepared and the food is baked on hot stones covered with leaves. One person I talk to laments that because everyone wants taro on Sundays, the market price for five pieces of taro on a Saturday afternoon can be as much as 20 *tala* (47 SEK). When the market price of the local crops is high people are of course more inclined to sell their produce. It should also be mentioned here that because of its cultural significance taro has a relatively high commercial value in Samoa, and also among the many Polynesian immigrants in New Zealand. Prior to the devastating taro leaf blight in the 1990s, taro was an important export crop and production has not recovered since then. Taro production had actually reached a level where it was seen by many as being unsustainable and studies have shown that it has contributed more to deforestation than the logging industry for example (Whistler 2002:131). But the taro leaf blight was a severe blow to many who relied on taro for cash income. Some informants believe that the blight was introduced to Samoa by the Fijians, who felt their export markets threatened. An older man tells me a different story: “No, it was God who brought the leaf blight to Samoa.” I must have looked puzzled because he continues: “to save the *fa'aSamoa* from the greed.” Whichever way is true, most Samoans truly miss the *talo Samoa*, the favored taro sort, that was hit by the leaf blight.

But price is not the only parameter when it comes to choosing between rice and taro. Rice is always available; it keeps well and can be stored. Rice is also faster and according to some easier to prepare. Like potatoes, taro has to be boiled or baked, while it takes only a few minutes to cook rice. In other words, rice is very convenient. Taste or preference is another contributing factor. While older people generally prefer taro, they often tell me that children prefer rice, and therefore the children eat rice. From a health perspective this is quite alarming, because although rice is not unhealthy per se, the nutritional value of refined rice cannot compensate for the local root crops (Pollock 1986:106). Adequate intake of micronutrients is important for the physical growth and development in childhood years, and if the children of today keep their preference for rice over root crops into adulthood there is no doubt of the negative long-term impact on health. The root crops provide a wide specter of micronutrients, and taro for instance is rich in calcium. This partly

¹² Import statistics show that rice is also imported from the USA. Source: Samoa Statistics Department 2007.

explains why the early European visitors remarked that Polynesians had such perfect teeth, although dairy products were entirely unknown there (Danielsson 1991:19). In many cases, Samoans have, like a large percentage of the rest of the world population, acquired a taste for food that is not very good for them. Some of the most controversial food items that are evidently adding to the health problems are the fatty meat cuts of turkey and mutton that is imported to Samoa mainly from the USA and New Zealand respectively.

6.3 Turkey tails and mutton flaps

During the two months of my field stay, May and June 2007, official statistics show that Samoans imported well over 700000 kg of turkey tails, or approximately two kilos a month for every Samoan. In the same two-month period they imported more than 100000 kg of animal fats and roughly 130000 litres of vegetable oils (Samoa Statistics Department 2007). These figures surely indicate that imported food probably contributes significantly to the health problems in Samoa. Turkey tail is a cut of turkey, which is basically a lump of fat. Since most Americans will not eat it, it is exported to the Pacific, where it is very popular. Similarly, mutton flaps, sheep bellies, are a particularly fat cut of the sheep that most New Zealanders will not eat. Fatty cuts of turkey and mutton are popular in Samoa. The import of fatty meats to the Pacific Islands has long been recognized as a problem, and the trade of these products has often been characterized as “dumping” of low quality or hazardous “waste” on Pacific Islands. It has also been suggested that importing foodstuffs to the Pacific Islands was a way to facilitate the export of local crops, something that has today resulted in food dependency and dietary colonialism (Pollock 1992:182). Many Samoans see it this way too. I am told rather sarcastically that all the aid that Samoa receives from New Zealand goes right back. First it is used to buy health-compromising food from New Zealand that makes people sick, and then to pay the health bill for all the Samoans that have to travel to New Zealand to receive health care.

As a last resort, Pacific nations have imposed bans on imports of these fatty meat cuts. Chicken frames – i.e., what is left of a chicken, when the meat has been cut out – have previously been banned in Samoa (*Samoa Observer* April 2007b). Likewise, Tonga and Fiji have imposed bans on imports of similar food items. While I was carrying out my field study in Samoa, there was much debate about this, because the Samoan Government had recently decided to pose a ban on imports of turkey tails. A letter to the editor in a Samoan newspaper illustrates the problems with such bans, and quite convincingly exemplifies that it is not ignorance about the health effects that keeps Samoans eating fatty meats.

Dear Editor – There have been a number of articles on the turkey tails ban. I for one am a turkey shoulder/tail eater, it changes food monotony. Always there are two sides of the coin. To the poor, turkey tails are good because they are cheap and affordable. To the rich and prosperous, turkey tail are junk and careless. To the health minded/experts turkey tails would make most sick/obese/diabetic/die. So for the poor on government’s turkey tails preventive ban, one asks “so what are we going to eat as the turkey tails replacement as we could not afford the expensive healthy food. Is the government going to just sit and leave it like this with the end result of starvation of the poor?” (*Samoa Observer* 2007c).

The letter captures very well the dilemma of Pacific Island governments. When I ask how the problem of replacement should be resolved, the only suggestion I hear is that people use the canned fish to substitute for the other less healthy alternatives.

A traditional meal in Samoa and in Polynesia in general, always consisted of root starches, and perhaps an accompanying dish of coconut or fish (Pollock 1992:22). But with modernization

and growing imports of cheap “accompanying dishes”, the fat and protein portion of a meal has increased dramatically. Traditionally, fish and shellfish was the main source of protein in Oceania (Malm 1999). The Agriculture Survey from 2002 found that about 25% of Samoan households are engaged in fishing. Part of it is consumed directly but a large percentage is given away or sold (Government of Samoa 2002). The price of fresh fish is relatively high in Samoa, and most people I talk to say they can not afford to buy fish at market price. And probably there are also people who cannot afford to eat the fish they catch because it fetches a relatively high price, and is a needed source of income. A recent scheme to add to the local availability of meat is the introduction of the so-called Fiji Fantastic Sheep to Samoa. These sheep are bred and promoted in Fiji in response to the country’s high imports of New Zealand mutton, and adapted to the tropical climate and vegetation. Although they are currently in a trial period, the new Fiji Fantastic sheep are very popular in Samoa, but alas, not for the meat. People don’t like the smell of it, but they are very keen to have a ram or two as a pet around the house.

6.4 Why Samoans buy imported food

When asked, Samoans explain that there are many reasons why they choose to buy imported food; preference, cost, availability and convenience are the most common answers. The remittances that Samoans receive from relatives living and working overseas explains how they can afford so much of the imported food.

Quite clearly, Pacific Islanders have acquired a taste for imported food items that are not beneficial to their health, but it is not ignorance about the health consequences that keeps people eating these foods. On the contrary, most people I interviewed in Samoa seemed to be well informed about the negative health impact of low-quality imported food. From a short-term economic perspective buying cheap food is rational of course, and local cultural perceptions on health and beauty also contribute to the problem; in Polynesia round shape, especially in women, is considered beautiful, and food is a positive, not a negative part of life – the biological or nutritional aspect of food are secondary (Pollock 1992:201, Fitzgerald 1986:80f). The links between consumption, life-style, and health are complicated, and even if people can easily point out what is wrong the solutions seem frustratingly far away – people find themselves caught in a situation where they, from a health perspective, continue to make the “wrong” consumption choices. It has been suggested that humans lose their innate abilities to choose a nutritionally balanced diet, when they are presented with industrially processed or “less natural foods” (Pyke 1986:281). No doubt there is some truth to this, but I will argue that the problem has to be seen in a larger context – the ability to lead a “balanced life” has to consider more than just diet. If we are to find sustainable solutions to modern health problems we need to understand that these problems are really problems of ecology.

To sum up, imported food in Samoa is generally of a poor nutritional quality, and high in simple carbohydrates, sugar, and fat. A diet that is too high on these substances contributes to non-communicable disease, and to deteriorating health. The cost of healthy and nutritious, imported food items in Samoa is so high that very few – if any – Samoans would be able to buy them on a daily basis. So if Samoans are to be secured a healthy diet, they need to keep a high level of self-sufficiency, and if all Samoans are to benefit from this, they need to have (free) access to local resources. Samoans are well aware of this, and it is probably part of the reason why Polynesians in general, and Samoans in particular, are very preoccupied with land and land issues (Cox 1997:123). For, as Nancy Pollock puts it: “...without the land the people have no food” (Pollock 1992:154).



Figure 5. Greeting sign outside the village of Sili, Samoa. (Photo by the author, 2007.)

6.5 Sili – a village in Samoa

Shortly after my arrival to Samoa I saw an old newspaper article about the village of Sili¹³. The story initially caught my attention because it mentioned Sili as the first village in the Pacific to be organically certified. This status was however threatened by a government plan to build a hydropower plant on Sili land (*Samoa Observer* 2007a). The proposed hydropower project I learned had been underway for some time, but had been thwarted by objections from the village of Sili. Initially, back in 2003, the village wanted the government to lease the land off them. But the government wanted to buy the land since the hydropower project needed World Bank funding, which requires state ownership (*Radio New Zealand International* 2003).

At the time of my stay in Samoa the issue had been brought up again and the *matai* of Sili made announcements that they were very concerned over the environmental consequences of the project, especially concerning the rivers. When I inquired further about Sili I was told that the village was known to keep firmly to their traditions and for example had rejected the use of chemicals in agricultural production decades ago. Even during the devastating taro leaf blight of the 1990s there were some villages that had not used pesticides, and Sili was one of them. Curious to learn more about their motives for deciding to ban chemicals I went with my assistant “Ace” from the Agriculture Department in Salelologa, Savai‘i, to visit the village of Sili. In Sili the villagers told us that the elders had decided on the chemical ban because they could see that the use of chemicals had a negative impact on the environment. Besides, they did not believe that anything coming from outside (of the *fa‘aSamoa*) could be good in the long run. I told them what I was interested in and I met Miriama, who invited my husband and me to visit her family. Because of the controversies with the government surrounding the hydropower project the village *fono* or council had decided that no strangers were allowed (in the plantations), but after some persuasion that we had come with the best of intentions, we were invited into the *fale* to sit with the *matai*. Discovering our sincere intentions we were offered ‘ava – a ceremonial drink made from the pounded roots of

¹³ For an account of life in Sili during the 1970s, see Hjarnø 1977.

the *Piper methysticum* plant – and it was clear that the villagers were frustrated with Government policies. We were invited to eat with the *matai*, and he explained that they believed that food, water, and shelter is not something people should have to pay for. He talked about how it had become expensive to live in Apia (where you more often have to pay for housing, food, water, electricity, etc). “Here we don’t need money,” he said pointing to the food. “We see what is happening in other places and we don’t want that”. By this he was not only referring to other places in Samoa but also in the rest of the world. Like so many other Samoans he had lived many years of his life abroad, in the USA, and he talked about the disintegration of these modern societies. He mentioned the people starving in the streets, the high cost of living, and the lacking discipline and respect in the younger generations. He pointed to the young people around us, who always knew what to do without being told and who were always attentive to the needs of their superiors and guests. He clearly believed that Samoan society was superior to Western/modern society, and he saw the integrity of Samoan society threatened by Government policy. The villagers in Sili were particularly concerned with the effects of the hydropower project on the rivers that run through their village. The fresh water that the rivers provide is of course essential to the village, and for example they also harvest shrimp.

When I left my new friends in Sili, I carried with me the impression that although they appeared to reject modern ideas of growth and development, the village was quite well off. The *matai* took great pride in telling us how the village kept strictly to tradition and the ways of the *fa’aSamoa*. To underline the point, he told us that just before our visit the village *fono* had gathered because one child had uttered a swearword to another child. When I asked how the choice not to use chemicals has affected the village economically, the *matai* said that the produce from Sili fetches the highest price at the market. What was perhaps in the beginning a scepticism towards foreign ideas and chemical substances, has turned out to be a commercial success and has made village integration stronger. However, a few days after my return home from Samoa a news release stated that Samoan Government was now speeding up the construction process for the hydropower project after it had ended negotiations with the village council of Sili (*Radio New Zealand International* 2007).

The case of Sili is one of a few exceptions in Samoa. Most farmers use chemicals. One reason is that the young and able have often left the village to take up wage-work in town or overseas, and there is a lack of manpower. In reality, village production is therefore dependent upon imported chemicals. Very often I am told that if people don’t use chemicals, it is simply because they cannot afford it, and it is seen as a real sign of poverty. It means that people have to work harder, weeding by hand because they do not have money to buy herbicides. Thus, Samoans have not only become dependent upon imported food. To a certain degree they are also dependent upon imported chemicals to *grow* their food.

6.6 Official development strategies in Samoa

I mentioned in the beginning of this chapter that I found in Samoa and among Samoans great frustration over lacking development in the agricultural sector. This lacking development has been lamented for decades, especially by the Samoan Government and international donors and organizations (O’Meara 1990:5). When I asked people about their opinions on development and the future prospects for Samoa, I was usually presented with three reasons that were standing in the way of development. The first one was that Samoans are lazy and receive so much money from relatives overseas that they do not bother to work. The second reason was that traditional and social obligations, *fa’alavelave*¹⁴, in the villages make economic development impossible. The third

¹⁴ *Fa’alavelave*, literally means “trouble”, or anything that interferes with daily life. It could be weddings or funerals for example, which in Samoa requires great preparation and includes distribution and exchange of food, money, fine mats

reason was that Samoans do not have a capitalistic mind-set. These were standard replies, so in other words, the conventional view is that Samoan culture and traditional mentality are standing in the way of development. This is also the view I am presented with at the Agriculture Department in Savai'i. The Senior Agricultural Officer at the Agriculture Department tells me they are trying (in vain) to encourage production that is large enough to give surplus and thus create some economic profit and development. I am told that the problem is that the farmers do not produce enough for export, or even for the local market. They only produce enough "to fill their own stomach." That is why at the Agriculture Department they try to change people's behavior, and try to "train them to become commercial farmers, not only subsistence farmers. We are trying to train people to be business people." But the faith in the efficiency of Samoan farmers is weak, which can be exemplified by this little anecdote he tells me. In August 2007 Samoa was to host the South Pacific Games, which is an important and prestigious event in the Pacific. The organizers realized that the visiting athletes had to eat, and that they would probably not settle for a menu on imported turkey tails and rice. Vegetables had to be planted in a hurry, and one suggestion as to how to get this done properly, was to import a number of Chinese (!) to stand for production.

When I asked the Senior Agricultural Officer about organic farming principles I was told that in his opinion the climatic conditions in Samoa make it impossible to "be organic"; there are too many pests, bugs, etc. The official line at the Ministry of Agriculture is that agricultural development is not possible without the use of chemicals, while organic production is seen as a promising niche alternative – an addition to conventional agriculture. But on the whole he gives me the impression that the Government in Apia is not very preoccupied with the work they do or with agricultural development in Savai'i. The Senior Agricultural Officer tells me his is a difficult job because the old people believe that chemicals are not good for the soil and are hesitant to use them. Nevertheless, at the Agriculture Department they encourage the use of chemicals in order that the farmers can produce enough to make a profit: "We say, if you want money – spray!" he says. However, after trying for 23 years with little or no luck to change the mentality of Samoan farmers, and to implement an efficient agricultural development strategy, the Senior Officer at the Agriculture Department in Savai'i said that he was ready to resign and leave the impossible and unrewarding task to someone else.

6.7 Alternatives to the official line

In recent years initiatives have been taken to promote organic farming in Samoa. One of these initiatives comes from the abovementioned Women in Business Development Inc, or WIBDI. Karen Mapusua, Associate Director at the WIBDI, tells me their strategy has been to work within the ways of the *fa'amatai*, taking into account the kinship structures, customs, and traditions of Samoan society. According to Mapusua, development strategies and initiatives have to work with tradition in order to succeed, and indeed, the WIBDI strategy has been quite successful. More and more families want to convert to organic farming principles, because if farmers can get their products organically certified through WIBDI it adds significantly to the value of their production. According to Mapusua the upsurge in organic chemical-free farming that they are experiencing is not so much due to a rise in awareness of organic principles or, as we have seen in the Sili case, a view that traditional Samoan farming practices are better than the *Palagi* way. It is simply because there is an economic incentive, and since most people have no potential income source other than farming, they will change their practices according to market demand.

or other goods. These traditional distribution ceremonies sometimes are a strain on people's resources, and they are often blamed for inhibiting economic development.

The experience of the WIBDI is that especially in the growing of taro and vegetables, chemicals are heavily used. The long-term impact on soils and health of such chemicals is hard to predict, but currently it is used to an extent and in a way that is certainly not beneficial. Again, a primary reason for the heavy use of pesticides is the lack of manpower in the villages. Mapusua stresses this point and argues that it is “because Samoa’s most important export is our young people.” With this she is referring to the great number of Samoans who are spread out all over the world, but who are still part of Samoan society (Malm 2003:233), entitled to land and contributing financially to their families in Samoa. This particular feature is important for understanding the Samoan economy, and why people to such a large extent can afford to buy imported food. Another reason for the use of chemicals is of course, as I learned at the Agriculture Department, that it is encouraged from official hold. And since the Government owns the Agricultural Store Corporation, which imports and sells chemicals, there is an economic incentive to do so. At the WIBDI they are planning to set up organic markets and raise awareness on organic agricultural practices. But Mapusua believes that if practices shall change, the Ministry of Agriculture needs to change its attitude. Generally though, she says that the Government is not very concerned with small-scale agriculture and micro-economy. Their focus is on macro-economy, trade relations, development of the tourism sector etc.

6.8 Land reform or not?

When I ask about the land reform at the Agriculture Department in Savai‘i I am told that people in Savai‘i want the land laws to change because they want to be able to sell the land. If this is true, it is rather disturbing but perhaps not surprising, since land is the only commodity people have. If the laws were to change – and land would become alienable – one consequence would probably be a larger number of destitute people. This is the fear of Karen Mapusua at the WIBDI. Her opinion is that if the land tenure system were to change Samoa would see some of the same development that has happened in Vanuatu and the Solomon Islands with shantytowns around the urban areas and grave social problems (cf. Malm 2003). One characteristic of Samoan society today is that although there is surely poverty and social problems, very few people are homeless or hungry. However, Mapusua says, it seems Samoans are “going to have to learn this the hard way”.

Not only people at the NGOs expressed this fear. Many people I talked to were concerned about the supposed plans to change the customary land laws. The fear is that it will lead to conflict and violence within and between families, and also that changing the status of land will eventually mean the disintegration of Samoan society, and that Samoans will lose their land.

The Executive Director at the Siosiomaga Society is very direct in stressing his opinion on the current development in Samoa and the proposed land reform. According to him the forces that are pushing all these changes are external to Samoa. It is the agendas of foreign governments, corporations, and so-called Bretton Woods organizations, such as the IMF and the World Bank that are being forced upon Samoa, pushing the Samoan Government to conform, he says. The Siosiomaga Society is actively opposing land reform as well as Samoa’s plans to enter the World Trade Organization¹⁵. Tourism, he says, is another factor pushing change in the same direction; more and more land is appropriated and conformed to suit tourist needs of sandy palm beaches, resorts, golf courses etc at the expense of the Samoan people and environment. “It’s an uphill struggle,” he says. “But at least when we die, we know we tried.”

Clearly, Samoans are very preoccupied with issues of land, health, and development, and they worry about the future. The field material indicates that under current circumstances at least,

¹⁵ Currently Samoa is in accession status to the WTO, with negotiations currently underway at the national level (The New Zealand Herald 2007a).

dietary health can best be secured if people grow and consume local food crops. Even the physical exercise associated with subsistence practices would benefit health. Not surprisingly though, the general development in Samoa is not going in this direction. The Great Pacific Ocean is no longer an effective barrier between the Pacific islands and the rest of the world, and the incorporation into the wider world system now effects all aspects of local livelihoods.

Samoans have earned a reputation for being able to participate successfully in the world, while at the same time keeping to their traditions and their Samoan way of doing things, and the most pressing question now seems to be if there is a Samoan way to change the status of land. In the following and concluding chapter I will integrate the findings of the field study into a general human ecological framework in order to show that although they may appear separate, the issue of land (environment) and the issue of health are two sides of the same coin.

7. ANALYSIS, DISCUSSION, AND CONCLUSIONS

So far we have seen that Samoans are highly dependent on imports. At the same time, imported food cannot secure a nutritionally adequate diet. Therefore, a fairly high level of self-sufficiency is necessary to secure a healthy diet. Also, if people do not have direct and easy access to land and local food crops, they are more inclined to buy cheap health-compromising imported food.

In order to analyse my field material and discuss the research questions I set out to investigate, I will now set up a model of human-environmental relations in Samoa. By contrasting this Samoan model with a model of human-environmental relations characteristic of modern Western society, some interesting perspectives on the interrelations between health, environment and culture become evident.

As already mentioned in chapter two, human-environmental relations can be illustrated in a human ecological triangle. Figure 2 is a model of human-environmental relations characteristic of modern society adapted from Hornborg (2001:193). It illustrates a triangular process in which “individualism, interchangeability, and alienation... [together form] ...a recursive process of decontextualization” (Ibid.:193). This decontextualization in the relations between nature, society and person is at the root of our current global environmental crisis. An attempt to draw up a model of human-environmental relations in Samoa is presented in figure 3.

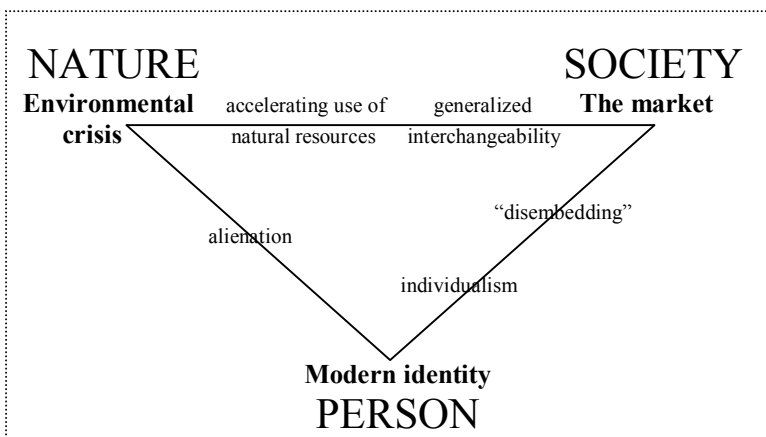


Figure 6. Model of modern human-environmental relations. (Adapted from Hornborg 2001:193.)

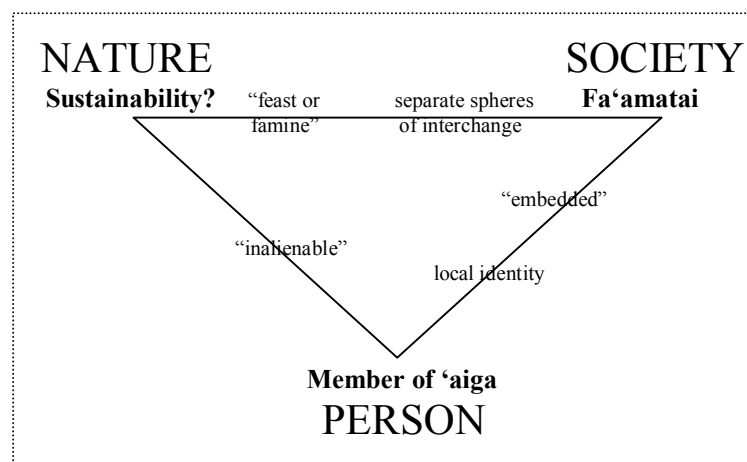


Figure 7. Model of human-environmental relations in Samoa.

First let me account for the differences in the two models. I will list six points, from the “sides” and “angles” of the triangle, where human-environmental relations in Samoa differ from those typical of modernity.

- In the Samoan model *fa'amatai* replaces the market, because while market forces sanction production and exchange in modern society, the *fa'amatai* traditionally sanctioned production, exchange and distribution in Samoa. To a certain degree this is still so, but as we saw in chapter five this is slowly changing. Because of the incorporation into the global market system, another land tenure system now exists alongside the *fa'amatai* – a more individualized system that is based on cash-cropping and more adapted to market economy.

- Separate spheres of interchange. Money has increasingly become the universal mean by which exchange takes place in the world. But simultaneously money is blind to and distorts time/space relations of natural systems (Hornborg 1998a:44f). As we have seen, land in Samoa is inalienable and therefore cannot (ideally) be exchanged for money. Money has of course become an integral part of Samoan society, but I am told that old people in Samoa still do not like to exchange food for money, especially when it comes to taro. Likewise, we have seen how the *matai* in Sili argued that the necessities of life, food, water, shelter etc – Samoan life and living in general – should not have to cost money.

- In Samoa identity is closely bound up with the *fa'amatai* and the *'aiga*. A person's identity and place in society is foremost defined by kinship relations, and by being a member of an 'aiga. This stands in contrast to the typical construction of modern identity, where the individual is (ideally) liberated from the bonds of traditional society, social class, kinship ties and obligations. The concept of “disembedding” (Giddens 1990) has been used to describe this process of “lifting out” all social relations from their local environmental and traditional structures. However, Samoan identity is still very much “embedded” in local kinship structures. Security in identity comes at a cost, and the repressive aspects of the *fa'amatai* should not be neglected here. The negative side of a strong *gemeinschaft* has in Samoa materialized in a very high suicide rate (O'Meara 1990:109ff). Breaking a social taboo or even committing suicide is a way, especially for young people, to express rebellion against their family. The sanctions for disobedience and wrongdoing are tough, and often include beatings and public shaming, a shame that is reflected on the whole family (Ibid.:108). But modern identity also comes at a cost. Critical social science has long dealt with the human consequences of the modern emancipation from traditional restrictive and repressive structures, which are loss of meaning, and loss of ontological security and security in identity (Giddens 1990). Less focus has been placed on the cost to the environment and the environmental consequences of decontextualization, which is of primary concern here.

- We have seen that in Samoa land is inalienable, whereas alienation and private property rights are a central principle in the West. The alienation of land and nature and the disembedding tendencies in modernity in general, are rooted in Cartesian dualism (Hornborg 2001:181). Such dualisms of for example, nature/culture have long historical and philosophical roots and permeate Western thought and science (Descola & Pálsson 1996:3ff). Moreover, these deep-rooted dualisms and the alienation of Nature, is what ultimately prevents us from understanding the cultural nature of our environmental crisis. Changing the status of land in Samoa would be a logical, but perhaps decisive, step in the process of decontextualization, and as we saw in chapter five, it would probably have far-reaching consequences for the construction of identity and personhood in Samoa.

- “Feast or famine”. As we saw in chapter four the geography and ecology of the Polynesian islands presented the islanders with feast or famine¹⁶. The ecological constraints on

¹⁶ Cyclones, war, failing crops etc could lead to periods with less food. But in these situations Samoans turned to the rain forest where they found other edible plants, so-called secondary or famine food, usually vegetables, which played an insignificant role in the normal diet (Whistler 2000:38).

consumption were quite visible since Samoans had only their local environment to sustain on. And the perishable nature of food in the hot and humid tropical climate made accumulation meaningless. Since there was little possibility of accumulation, there was equally little point in accelerating use of resources. In this sense traditional Samoan society was sustainable. This ecological reality has shaped cultural behaviour towards sharing and feasting when there is something to feast on, and today the “feast or famine” mentality is a contributing factor to life-style disease in Samoa. The question is however, if the health situation would improve were Samoans to change their mentality and cultural views towards food in response to their changing circumstances. First of all, such fundamental change in identity does not come easy, because it would implicate general change in human-environmental relations. Second, it is unlikely that such a change in human-environmental relations would significantly improve health or lead to more sustainable environmental practices.

- Sustainability? Islands continue to fascinate and inspire studies of sustainability (e.g. Kirch & Rallu 2007, Diamond 2005, Malm 2003, Redman 1999), and certain Pacific islands are particularly favored as laboratory cases of how local populations have undermined their ecological foundation. Because of the well-defined land borders of islands the analogy to “Earth as an island” seems straightforward, and island sustainability is compared to global sustainability. The analogy is not always adequate though (Kirch 1986:2, Malm 2007), and in the case of Samoa, it is quite obvious that it is in the relations with the surrounding world that local unsustainable practices arise¹⁷. As we saw in chapter four, the environmental problems and the problems of health in Samoa is the result of the islands no longer being isolated. With the dramatic population growth of the past century, strain on natural resources and land shortage is inevitable, and Samoans have solved this problem so far by doing what their Polynesian ancestors did – migrating. But modern migration, and the money sent back to Samoa as remittances, has resulted in unsustainable consumption patterns in Samoa. Not only has it resulted in dramatic rise in the occurrence of life-style disease; indirectly it also contributes to unsustainable subsistence practices.

As already pointed out, this Samoan model has shown remarkable resilience to outside influence and Western acculturation, while at the same time, Samoans have always managed relatively well among the other nations of the world. Arguably, the close, direct, and inalienable relation to land in Samoa has had a beneficial impact on both health and the environment, and despite the hierarchical structure of traditional Samoan society very few people are denied access to food and shelter. Elsewhere in the Pacific region the situation is not so good. Landless and destitute people are crowded in urban areas, where the health problems are worst. In the Marshall Islands, 6.000-8.000 people out of a population of 53.000 are diabetic, and in Nauru, where 94,5% of the adult population is defined as obese, almost half the population is diabetic (*Fiji Times* 2008). There is general agreement that modern diets and life-style are causing the health problems in the Pacific, but viable solutions seem out of reach. The main reason for this is probably that subsistence economy is not seen as a way to achieve modern social and economic development. As more and more people move to urban areas and adopt modern lifestyles, returning to subsistence practices is not always possible (because land and traditional knowledge of subsistence practices is lost) and often it would be perceived as regress rather than progress. Millions or even billions of poor people worldwide are caught in this dilemma. Perhaps a better understanding of trade and exchange relations in the world system, together with a better understanding of human-environmental relations and their influence on human health could inspire more holistic and sustainable solutions

¹⁷ The story of the logging industry in Samoa in the 1970s is a telling example (Shankman 1979). While Samoans had been using the rain forest more or less sustainably for more than 3000 years, with the help of the American Potlatch timber company, it took less than a decade to cut most of it down. Logging is now being banned in Samoa, and plans are to introduce more sustainable agroforestry practices (field notes May 28th 2007, Forestry Division). However, this initiative comes at a time when most of the primary rain forest is already gone.

to modern problems of health, without depriving people of the advantages that also come along with modernity.

Having put together the ethnographic bits and pieces of my field work into a human ecological triangle with the purpose of describing local human-environmental relations and making cross-cultural comparisons, it is now time to apply a global perspective of ecologically unequal exchange in order to understand the Samoan situation in its global context.

7.1 The two causes of ecologically unequal exchange

In order to see how external factors and forces, imported food and goods included, are effecting human-environmental relations in Samoa, we can look back at what Martinez-Alier (2002:219) describes as the two causes of ecologically unequal exchange (see page 15). The first one was that “lack of power induce local environment and health to be given away or sold cheaply”. Paul Alan Cox, ethnobotanist and Professor of Environmental Science, has written a compelling account from Samoa of how and why poor villagers so often choose to sell their local environment and resources (Cox 1997), and I will not discuss further what reasons the villagers in Sili might have to enter into an agreement with the Samoan Government about selling or leasing their land. However, the hydropower case in Sili is another example of the pressure on Samoan society to conform their laws to fit with the policies and demands that the international society and institutions such as the World Bank require for example in order to give loans. Although it seems the plans to build the hydropower plant are going ahead, the Sili villagers have been in a relatively good bargaining position, and have been able to delay and put pressure on the Government – they have some degree of power, and this power ultimately derives from the inalienable status of land in Samoa.

The second cause of ecologically unequal exchange had to do with the production time of imported goods versus local goods. The inequality here derives from the fact that the ecological time necessary to produce local goods is frequently longer than the time required to produce the imported industrial goods. When asking people in Samoa about their reasons and motives for buying imported food cost and convenience were among the most common answers. Both of these answers in reality can be translated into time. Convenience concerned both the availability of the food in the supermarket or the local village shop, and also storage of food and preparation. In the urban areas, local food is not always as easily available as the imported supermarket food. Cheap frozen meats are more convenient than local livestock. Canned and dry imported food is very convenient in the Samoan climate, and it normally requires very little preparation compared to local food. In other words, imported food makes a lesser claim on people’s time. Considering that much of the money people have is remittances from family members working overseas, they do not even have to spend time working to earn it. In other words, when people buy imported food they also buy time.

The difference in price between imported industrial food products and local fresh food does not reflect the *ecological time* embedded in them. Because modern industry is based on machine power and subsidized through cheap access to natural resources, the resources used to produce these food items, is not reflected in the price. Surely, even if coconuts are available, it can be more convenient to open a can of coconut cream than it is to pick up the coconut, peel it, open it, grate the meat out, and finally squeeze out the cream. If it is relatively cheap to import a can of coconut cream, the process of making one’s own coconut cream soon seems pointless. In this sense, the distortion in price of imported food in relation to real production time is undermining local food production and local subsistence practices and activities. This is also the reason why farmers in the villages are not very eager to produce much above their own subsistence needs; the relation between the time invested, ecological time and labor time, is too high compared to the price they

receive for their produce. Local subsistence agriculture easily becomes meaningless in a market context, and large-scale modern agricultural practices seem to be the only solution. But as was the case with the logging industry and the taro export, these methods are often inherently unsustainable. Moreover, as human-environmental relations change and social relations are no longer embedded in their local context, local livelihoods lose their meaning. The result is that people want to sell their land and move.

7.2 Time/space appropriation, accumulation, and sustainability

Looking at it in a global perspective Samoa's trade with the outside world means that imported food displaces the environmental load of local consumption outside of Samoa. In other words, Samoans appropriate time and space outside of their national borders, when they consume imported food. However, they are left with the problem of accumulation. The same traits that made the imported food and goods convenient – the metal cans and plastic packing – becomes inconvenient because they are not degradable. Growing heaps of waste becomes problems of pollution, and accumulation of macronutrients and pollutants in the human body becomes health problems. Because of the low quality of imported food, and its composition of high-calorie macronutrients and lack of micronutrients, the result is obesity, malnutrition, diabetes, cardiovascular disease and other non-communicable disease.

As the use of natural resources accelerates, the general “growth of society” naturally results in growth in the human body, since the human body is a biological organism and part of a larger socio-ecological whole. If we look at the human ecological triangle we see that this is really just a result of changing human-environmental relations – accelerating use of natural resources leads to accumulation in society and in the human body. In a global perspective, the problem with this growth is twofold: First, it is unsustainable (Wackernagel & Rees 1996)¹⁸. Second, the risk and benefits of the increasing production are unequally distributed, also when it comes to food and nutrients. The world's poor are increasingly sustaining on refined, processed, low-quality industrial food, while those that can afford it can choose between Nature's finest, chemical-free ‘organic’ products from every corner of the world – even Samoa. While New Zealanders import a fresh load of organic bananas every week from Samoa (*Pacific Magazine*, February 1, 2003), Samoans get mutton flaps in return. Health advice in developed countries is to eat protein, complex carbohydrates, and essential fatty acids to avoid weight gain and life-style disease. The simple carbohydrates and animal fats are distributed among the poor. The preoccupation with health in Western society is thereby contributing to the unequal distribution of high-quality food and nutrients among the world's rich and poor. There is more than enough food in the world to feed everyone, but low quality food is one of the biggest challenges to the health of the poor (Hawkes et al 2004/2005:22).

Considering that our so-called environmental crisis is really a crisis of social behavior or culture, there are at least two reasons why a change in cultural perceptions of food, health, body image etc in Samoa would not necessarily be desirable. First, in a global perspective a culture that values distribution of local resources over accumulation of goods is sustainable – it uses less resources and it distributes the resources available more equally. Second, a shift towards increasing valuation of (capital) accumulation is likely to increase dependency on imported food and goods, which might in turn encourage (unsustainable) cash-cropping practices and thus put pressure on the

¹⁸ If the world population achieved the current level of consumption of North Americans, we would need at least two additional planets (Wackernagel & Rees 1996:15). On the positive side, other calculations suggest that the world's inhabitants could enjoy, sustainably, material comforts roughly equivalent to the average level in Europe in 1990 (Meadows et al 1992:196).

local environment. From a health perspective, this will not benefit the broad Samoan population. The increasing number of people in Western society affected by obesity and associated non-communicable disease should be ample evidence that lacking cultural acceptance, social stigma, and even discrimination of obese individuals does not effectively prevent obesity and life-style disease.

In traditional Samoan society a large body stature was seen to reflect a bountiful environment and a society that was able to distribute these bounties of Nature to all its members. Perhaps the dual burden of malnutrition and its impact on human bodies today should make us realize that it reflects gross inequality, ecological crisis, and pathologies in modern human-environmental relations.

7.3 Conclusions

The issues focused upon in this study have been 1) to find out why Samoans prefer and choose to buy and consume imported food, and 2) to investigate the effects of imported food and goods on health and environment in Samoa.

I found that at a personal level people have many apparent reasons and motives for buying and consuming imported food. Some of them are cost, convenience, availability, and preference. At a structural level, imported food is a way for Samoans to appropriate time and space outside of their national borders. This makes up for lack of land (space) caused by population growth, and lack of ecological time to produce local crops. Samoans are able to import and buy this food largely because members of their families are working overseas and sending money back home. Migration is thus an important subsistence strategy in Samoa, but it contributes to the self-reinforcing processes of decontextualization and of increasing dependency on cash and imports. The increased dependence on cash and imports again carries implications for the exploitation of the natural environment and for subsistence and consumption strategies.

The impact of imported food and goods on health and the environment in Samoa can be seen at two levels. Because of the low nutritional quality of imported food, it has a direct negative impact on health. However, it should not be neglected that fewer imports could result in local food shortage. Therefore, Samoans are quite vulnerable to fluxes of cost and availability on the global food market. For example, the recent trend in the demand of biofuels on the global markets, and the focus on reducing greenhouse gas emissions by using waste products as biofuels (Searchinger et al 2008), might change the premises for trade of the cheap, energy-rich food that Samoans have become dependent upon. In other words, it may soon become more profitable to feed these fatty food items to machines rather than to (poor) people. Notwithstanding, the best way to reduce vulnerability to such market trends and minimize health risk is to retain high but sustainable levels of local food production as well as retaining the cultural value on (equal) distribution of available resources.

At a structural level, imported goods distort the relation between the available space and the production time necessary to grow local crops and local consumption needs. By importing industrial goods, which are produced at a lower cost elsewhere in the world system, local production simultaneously and increasingly becomes meaningless – the cost of time and labor necessary to grow local crops sustainably becomes too high compared to the cost of imported food. This means that the economic rationale for local production is very small. Fortunately, there are other reasons and rationales in Samoa; social, cultural and environmental, that still make local subsistence agriculture and practices meaningful. Not least, keeping to the Samoan way of doing (some) things might well be the best way to secure future health and well-being.

Brief Samoan glossary

'Aiga: extended family

Fa'alavelave: Family events such as weddings or funerals, where food and goods are exchanged and distributed.

Fa'amatai: The *matai* system

Fa'aSamoa: Samoan custom, Samoan way of life

Fale: House

Fono: Meeting (village council).

Matai: Titled head of a Samoan extended family

Siosiomaga: Environment

Tala: The Samoan currency unit

To'ona'i: Sunday meal

Umu: Traditional Samoan oven

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