MODERN THAI BUDDHIST ENVIRONMENTAL ETHICS AS A MODEL FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT

by

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Ethics are central to any human behavior. Ethics are the framework of rules that support world views. World views determine human perceptions, and ultimately human action. Ethics are particularly important in development work, where choices about how to change the lives of people in society are not to be made lightly. This research demonstrates how Buddhist environmental ethics can be used as an appropriate model for sustainable agriculture development in Thailand. This thesis describes Thailand's history of industrial and sustainable

agriculture, Buddhist environmental activism and development, and the practices of one Thai Buddhist NGO working towards Buddhist ethics in sustainable agriculture. The goal of this research is to illustrate the mutually supportive relationships between Buddhist environmental ethics and sustainable agricultural development in Thailand.

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CHAPTER I

INTRODUCTION

The aim of this thesis is to illustrate how Thai Buddhist environmental ethics can be used as an effective theoretical support for riceroots sustainable agriculture development programs in Thailand. This paper demonstrates that the metaphysics of sustainable agriculture and modern environmental Buddhism are facets of one similar worldview. Human-environment harmony and quality of life in the present and for future generations are most highly valued in this worldview. Environmental preservation and sustainability of harmonious social relationships are therefore also intrinsic to this world-view.

This study builds upon the previous work of Thai and Western Buddhist scholars, supporters and critics of sustainable agriculture, and Buddhist environmentalists. It includes an example of Buddhist sustainable agricultural development in practice, the sustainable agriculture program of Foundation for the Education and Development of Rural Areas (FEDRA). FEDRA is a Non-Government Organization (NGO) founded by Phra Dhammadilok (formerly Phra Thepkavi), a popular, charismatic Buddhist monk in Northern Thailand.

It its broadest terms, my interest in this study has developed from the discourses related to and surrounding the ideas of E.F. Schumacher, Sulak Sivaraksa, Bhikku Buddhadasa, Apichai Puntasen, Ken Kampe, Larry Lohmann, and Susan Darlington. In Small is Beautiful, Schumacher uses Buddhism as an example of a religious philosophy that supports a morally just economy and society that functions to serve the needs of humans, not the needs of the system itself. My research also has its roots in the popular environmental movement in America of the 1960s and 1970s and the growth of interest in Eastern philosophies at that same time. The confluence of environmental and an intellectual turning to traditional Eastern wisdom resulted in a burst of academic interest (both in the United States and Thailand) in the 1980s, 1990s, and today. Literature about the activities of anti-capitalist, pro-indigenous knowledge development monks (*phra nakpattana*) of Thailand who first became active in the 1970s to promote socially focused development also supports my research.

Schumacher (1973) uses Buddhism as an example of a religious philosophy that supports a morally just economy and society that serve the needs of humans, not the needs of the system itself. Close analysis of other philosophies and religions work equally well, Schumacher argues, because every religion emphasizes human stewardship of a land that can not ever be truly owned by humans alone. Therefore, this thesis

does not critique Christianity or any other religion that has been associated with the rise of capitalism and industrialism. However, Buddhism's environmental ethics have been quite popular for environmental scholars because of Buddhism's non-violent, flexible and adaptable guidelines for living. The definition of ethics used for this paper is similar to Dewitt's (1992) idea that, "an ethical system is a perception of how the world works-- a worldview by which sense is made of everything" (p. 8). Therefore, ethics are neither good nor bad, but are rather a philosophy or worldview that gives moral structure to everyday life and activities.

My study of Buddhist environmental ethics serves a growing public interest because it covers a topic that has the potential to affect all living things in the world. Pollution, unemployment, alienation from nature, contaminated food, loss of culture, and lack of consistent or compassionate ethics and morality are everyone's problems. Sustainable agriculture supporters, particularly those of the Deep Ecology movement, argue that these problems result from a type of development that lacks a system of ethics that gives value to the well being of life (including human life) on earth. Similarly, many Buddhist scholars argue that all of the problems in today's modern world are symptoms of a larger problem of a lack of morality. Therefore, in studying this topic, I am exploring the values or morals of systems of thought that shape our

current existence. More specifically, I am studying a movement that aims to alter not only the form but also the content of our current existence.

The layout of this research is simple and straightforward. Chapter I is an introduction and brief overview of the topics covered in Chapters I through V. Chapter II gives an extensive overview of academic writing on the philosophies underlying the promotion of sustainable agriculture. This overview will be arranged historically. In this section, the advent of modern agriculture, with emphasis on the metaphysical assumptions on which modern agriculture is based, is described. The advent of sustainable agriculture is also described in contrast to industrial agriculture. The diametric opposition of these two approaches to producing food is the focus of this section.

In Chapter III, academic literature pertaining to Buddhist environmental ethics is discussed. Here the many environmental interpretations of Buddhist literature as well as the actions of modern environmental monks and their intellectual supporters are enumerated. This chapter is central to the argument of this thesis that Buddhism can easily be interpreted as an environmentally sensitive religion, yet interpretation is necessary and can be quite flexible so serve the needs of the interpreter. Buddhism is not inherently an environmental religion, but people adhering to the rules of Buddhist practice will seek balance

and harmony with the environment, and this will lead to optimal human-environment relationships.

Chapter IV describes the background, programs, and explicit goals of FEDRA's work. A general overview of FEDRA's structure as well as its development projects is included, with an emphasis on their sustainable agriculture program. The remainder of the section discusses Phra Dhammadilok's philosophies of sustainable agricultural development and how they relate to other Thai Buddhist activists' ideas about development.

In Chapter V, the conclusion of this paper, the implications of and future applicability of Buddhist environmental philosophies are discussed. Some emphasis is placed on what other people in the midst of development problems can learn from the Thai development experience. This final section also discusses remaining questions and inconsistencies in the study of Buddhist environmental ethics. From these remaining questions and the newly discovered relationships between sustainable agriculture and Buddhist environmental ethics, new areas of research for FEDRA as well as sustainable agriculture and Buddhist environmental ethics scholars can be proposed.

This research should enhance the existing state of knowledge in Buddhist studies as well as environmental studies. This research makes a contribution to both fields and simultaneously brings the two together.

Currently, scholars in the field of Buddhist environmental studies tend to focus on finding support in the *Tripataka* or the teachings of famous monks for environmentally sensitive action. Scholars in the field of sustainable agriculture's environmental ethics focus on attempting to define the moral qualities of sustainable systems without much in-depth study of religious ethics. However, this paper strives to bring religion and sustainability closer together.

By bringing the two areas of research together, both points of view can be strengthened with the mutually supportive ideas they each share. This study is also important in demonstrating that holistic approaches to research are feasible, coherent, and practically useful to Thai riceroots NGOs such as FEDRA. Once again, Buddhism is not a superior philosophy to be used in development work. Any belief system that is indigenous to areas undergoing development should work equally well. This thesis does not advocate Buddhism as a framework for development ethics anywhere other than where Buddhism is the religion of choice of indigenous inhabitants. Nonetheless, perhaps the results of this research could be used not only by FEDRA in their upcoming sustainable agriculture promotion programs, but also by other NGOs in diverse Southeast Asian locations seeking a useful framework for development ethics.

CHAPTER II

THE ORIGINS OF INDUSTRIAL AND SUSTAINABLE AGRICULTURE

This chapter traces the metaphysical origins of sustainable agriculture. It begins with discussion of the development of industrial agriculture, and leads to how sustainable agriculture arose as a response to industrial methods and the mentality that supported those methods. The aim of this chapter is to illustrate the thinking behind the development of industrial agriculture and sustainable agriculture, not the actual methods employed by either one. Industrial agriculture is discussed mainly in terms of the agriculture of the United States, as the U.S. was one of the first countries to embrace industrial agriculture. Discussion of industrial agriculture in Thailand will be framed in the terms of the export of industrial agriculture to Thailand primarily under the auspices of the Green Revolution.

Ideological Roots of Industrial Agriculture

Industrial agriculture is the type of agriculture that is most prevalent in industrialized societies. Profit through production for market sales drives industrial agriculture. Industrial agriculture is not a traditional way of life, although the ideas behind it are thousands of

years old. The effects of the thinking behind industrial agriculture are now only being felt because of assive advances in technology that make the expansion of industrialagriculture possible and highly profitable.

Stauber, Hassebrook, Bird, Bultena, Hoiberg, MacCormack, and Menanteau-Horta (1995) write that there are six important characteristics of industrial agriculture. The first and most obvious is a very fast rate of technological innovation and application. Technology that supports ever-increasing production of crops is an absolute necessity in a competitive agricultural business. When some farmers do not or can not accept newer, more efficient technology while others can, they will be forced out of business because they can not offer the same prices and the same amount of crop as their competitor. This is one of the ways that small farmers can be put out of business by larger high technology-focused farms.

The second characteristic of industrial agriculture is that it is large-scale. This means that industrial farms are huge in size as well as in processing and distribution capacity. Industrial farms reach their great size because they are generally owned by agricultural corporations, which can afford to buy huge tracts of land on which to plant their crops. Corporations can also afford to do specialized research and development to ensure that their crops will be plentiful and successful. Large mass production-centered farms can buy out the small farms located near

them, and expand their total land area. Owners and former employees of the small farms then become wage laborers with lower standards of living and reduced autonomy while working on the industrial farms (Jackson, 1980; Kaufman, 1985; Rundquist, 1991).

The third characteristic of industrial agriculture is that it is a highly specialized enterprise. Not only are agro-business corporations interested in producing a very limited range of crops not necessarily suitable to the local environment, they are also focused on the profitable mass production of those crops by any means possible. This attitude means that industrial farms pay little attention to natural soil quality or geographical features of the land they invest in. Rather, they modify the land to suit their needs by applying chemical fertilizers and pesticides, shaping the land with bulldozers or other heavy machinery, and divert entire rivers to supply the farms with irrigation water (Jackson, 1980).

The fourth characteristic of industrial farming is large capital investment. Large capital investment is possible when huge corporations, not small families or individuals, run farms. All forms of specialized machinery for tilling, planting, tending, and harvesting crops are available when large amounts of capital can be used. The newest genetically modified seeds, research, and chemical fertilizers and pesticides are also available. All of these factors make industrial farming more competitive in the free market. These factors also make industrial

agriculture more likely to reap greater profits than small-scale farms operating on small budgets and limited by environmental constraints (Bowler, 1992; Jackson, 1980).

The fifth characteristic of industrial agriculture is that it is highly efficient. Efficiency is measured by looking at the economic bottom line. If inputs are cheap (whatever their content or environmentally damaging consequences), and products are in high demand, profits are high. High labor efficiency is also important to industrial agriculture because it cuts over-all costs. Superficially, this kind of efficiency appears to indicate that natural resources used in industrial agriculture are being optimized. However, this type of efficiency is only relative, as many of the inputs of industrial agriculture are only efficient in the short-term or have other hidden costs outside of the economic formulas with which their efficiency is measured (Apichai, 2000; Chambers, 1998; Rifkin, 1985; Stauber et al., 1985). Low cost inputs with short-term benefits but long-term negative consequences include toxic chemical pesticides and fertilizers, artificial irrigation schemes that cause erosion of nutrients, and unnecessary forest clearing that degrades soil quality.

Another important characteristic of industrial agriculture is that it separates the act of production from the act of consumption. Production happens in one place solely for the purpose of products to be sent away to another place. In the other place, purchase or consumption occurs.

Foods are produced by a factory farm in a rural area and shipped to urban areas to be sold. Separation of production and consumption leads to alienation. Consumers are alienated from the value of the foods they consume because they do not understand exactly how these products are made and cannot see how they are derived from natural resources, but only see them in terms of their final product (Barkin, 1995). Alienation has a negative impact on the environment because the people who are being supported by the food of the land do not understand what their needs have done to the land or what the needs of the land itself may be.

The final characteristic of industrial agriculture defined by Stauber et al. (1995) is an extensive dependency on manufacture, process, and distribution. Industrial agriculture that supplies food to remote areas of the nation and the world would not be profitable if manufacturing of additional products used in processing such as canning and preserving were not available. Distribution is of key importance to industrial agriculture, as the massive quantities of food produced and processed by the agricultural enterprise must be quickly and efficiently shipped to stores and markets in a timely manner to maintain the products' top values (Bowler, 1992). Petrol makes this distribution possible. Therefore industrial agriculture is extremely dependent on petrol not only in terms

of technology used on the farm, but also in terms of transportation, distribution, and processing.

Industrial agriculture seems like an inevitable development in modern society if only the above characteristics are examined. However, the underlying beliefs and values that support the continuation and proliferation of industrial agriculture include several important assumptions about the reality in which humans live. Studying the assumptions of industrial agriculture is fundamental to understanding what sustainable agriculture is trying to achieve. Wendell (1984) writes that "...the products offered for sale by the makers of agro-industrial technology...are not just ready-made solutions, they are ready-made thoughts" (p. 23). Wendell's statement illustrates why it is essential for people everywhere to understand that the actions of agriculture reflect cultural attitudes and assumptions about the human place in the world. Most people cannot see because of their immersion in their own culture. The following section attempts to describe these assumptions in their relationship to agriculture.

One of the most important fundamental assumptions of industrial agriculture is that never-ending economic growth fueled by greedy self-interest is not only desirable, but is necessary for the success and ultimate happiness of human beings (Apichai, 1992; Schumacher, 1973; Stauber et al, 1995). This assumption has less to do with agriculture

than it has to do with the idea that bigger is better. American agriculture in general, particularly after the 1950's, has been preoccupied with centralizing and increasing production. However, total centralization is not necessarily for local convenience, it is for streamlining of profits (Rundquist, 1991). The history of the Western economists' obsession with maximizing profit through centralization and mass production of a single item is a long one, and is deeply embedded in the American psyche.

Wheeler (1993) and Schumacher (1973) both write that the fundamental problem with the Western economic system that drives and supports industrial agriculture is that it ignores human beings' fundamental needs to create, work, and develop themselves spiritually. Schumacher believes that the current economic system is heading for failure because it endorses greed and the desire to profit at any cost as an inherent part of human nature. Economists who lived during the Industrial Revolution recognized that the cultivation of greed was morally wrong, but also advised people to not feel too bad about it, as it was necessary to be greedy; society could not become rich without some kind of fundamental driving force for prosperity (Wheeler, 1993).

Another important assumption of industrial agriculture is that only ever-expanding productivity can supply cheap and abundant food. This belief justifies centralization, intensification, the use of inorganic

chemicals, heavy technology, and genetically modified organisms in agriculture because these things, although not in themselves positive, are seen as essential to expanding profitable productivity. Industrial agriculture views expansion as a never-ending process, and natural resources as infinite. The assumption is that when one resource is depleted, another one can be found to replace it, and the process can go on more or less the same as before (Schumacher, 1973). The assumption that continuously expanding productivity is best for everyone discounts decentralized, local, or community-focused agriculture. Moderately centralized or decentralized agriculture does not continually expand, but only modifies itself to meet the needs of a local community and offers little in terms of a regular predictable profit for agribusiness corporations (Jackson, 1980). Similarly, only larger farms and improved efficiency are seen as profitable. Smaller farms are risk-prone in purely economic terms (Stauber et al., 1995).

Another critically important assumption of industrial agriculture is that technological innovation is the best way to measure agricultural progress. Measuring agricultural progress with the complexity of technology used is quite easy. One only needs to observe the daily workings of an industrial agriculture enterprise to see the amazingly complex and specialized technology used by these super-scientific farms to achieve maximum production and profit. Technology is also an easy

way for economists to quantify what is happening on a farm, as the number of specialized tools used indicates the amount of capital available as well as the profits being made by the farm.

Schumacher writes that quantification is a serious problem with economics in general (1973). Economists may be able to measure the number of high-technology devices used on a farm and their relative success in terms of crops produced and profits made, but they can not measure the happiness of employees, the physical and psychological health of the local farming community, or the general balance of the land being used on the industrial farm (Schumacher, 1973; Kaufman, 1985; Sulak, 1988a; Wheeler, 1993).

Industrial agriculture also assumes that nature is an obstacle to overcome, or a foe in a battle. According to Merchant (1992), the metaphysics supporting this aspect of industrial agriculture began during the European Renaissance, when Rene Descartes came up with the idea that all events in nature could reduced to a simple relationship between two factors. This idea led to the Cartesian x-y axis graph and the term "Cartesian thinking." Descartes and other intellectuals of his time believed that nature worked like a machine, could be controlled like a machine, and could be explained with mathematics. These intellectuals believed that God gave humans the earth solely to be masters of it. This mastery leads to a feeling of superiority and

objectivity. Feelings of separated superiority allow people to feel that what they do to the environment does not matter, because they themselves will remain unaffected. These feelings allow humans to see themselves as intrinsically separate from the things that surround them (Apichai, 1992; Jackson, 1980; Shiva, 1991).

Another deeply embedded assumption of industrial agriculture is that science is intrinsically objective, unbiased, and pure in its factual nature. Stauber et al. write that science is assumed to be "an unbiased enterprise driven by natural forces to produce social good" (p.13). However, Merchant (1992) and Shiva (1991) write that scientific thinking is derived from the ideas of intellectuals like Descartes who believed that the world was a machine and that all parts of the machine can be dissected into parts; the total machine can be understood by the sum of its parts. Thus the desire of modern scientists to look at the smallest aspects of things, to dissect, categorize, specialize, and to separate the physical from the emotional or spiritual world. Although scientific thinking and experimentation has led to many wonderful and extremely positive advances in the fields of health, technology, and understanding of the natural world, applying scientific methods to all aspects of life can have detrimental effects. Scientists operating in this frame of mind would develop agricultural products for the sake of the intellectual exercise of developing them, not necessarily for the sake of benefiting society or

nature with the developments (Fukuoka, 1978; Jackson, 1980; Shepard, 1985).

One excellent example of the erroneous assumption that science always works for the public good is as follows. Industrialized agriculture as a method of food production began on a large scale in the U.S. after World War II. At that time, scientists had been working on developing chemical weapons for the war. After the war, the resulting chemicals were further developed to be used in agriculture, where selected application of the chemicals could protect crops from natural predators (Bowler, 1992). Chloropicrin, a chemical used as tear gas, was found to be effective in killing insects. What is called Agent Orange today was also used as an herbicide (Shiva, 1988). These chemicals were seen in mechanical, reductionistic terms: they were merely pieces of a machine that could produce more food for the masses (Kaufman, 1985). However, critics of industrial agriculture argue that the use of chemicals like these is yet another illustration of human arrogance and alienation from nature. Choosing to use poisonous chemicals, especially those developed in war for the explicit purpose of killing other people, is inherently self-destructive and shortsighted and violent (Curtin, 1995; Schumacher, 1973; Shiva, 1990; Snider, 2000; Worster, 1984).

Another important assumption of the mindset that supports industrial agriculture is expressed well by Fry and Martin (1991). Some

development scholars have speculated that society in developing countries who sacrifice quality of life in the present can achieve a higher quality of life in the future. Environmentally this means that it is acceptable to pollute or damage the environment, because it is for the future greater good of the society as a whole. The belief is that during the development process in developing countries, the rich should get richer, and the poor should also get richer, until eventually both the rich and the poor would enjoy the same level of prosperity. However, although the poor have become more affluent in recent years, the gap between the rich and the poor has actually widened. Yet environmental degradation continues, with the poor still bearing the brunt of the problem.

The Export of Industrial Agriculture During the Green Revolution

Understanding the Green Revolution is important to understanding how industrial agriculture and its embedded assumptions about human reality made its way to Thailand. The roots of Green Revolution began an idea about population growth that became popular during the post-colonial period between the 1950's and the 1970's. People in industrialized countries who believed in the idea of overpopulation warned that growing international populations of landless rural peasantry meant that global starvation loomed on the horizon.

(Lappe, 1998) However, some scholars maintain that these hunger problems were actually a result of the extractive, disruptive colonial policies which disturbed indigenous systems of colonized peoples which actually lead to problems of land distribution, not necessarily over population per se (Apichai, 2000; Sulak, 2000c).

Scientists and development experts from industrialized countries sought solutions to the hunger problem. They looked at traditional farming practices in undeveloped and developing countries and saw that people used low-yield crop varieties, very little irrigation, inefficient fertilizers, and appeared to lack a sophisticated understanding of agricultural science. Not surprisingly, these scientists looked science and technology to solve these hunger-related problems. The ensuing two responses of the Green Revolution were to curtail population growth through family planning initiatives and improve food supply with scientific seed development (Dudley, 1992). Although there was a high degree of altruistic motivation behind the work of the Green Revolution as well as a true need for agricultural growth, governments of industrialized countries were delighted to hear of these solutions, as they could develop new markets for agribusiness in formerly colonized countries under the guise of doing a good deed for their new neighbors (Dudley, 1992; Shiva, 1991; Sulak, 2000c). Many countries benefited greatly from Green Revolution technology in the form of greatly expanded

local food production to feed needy local populations, but these countries and others also experienced negative side effects of the Green Revolution.

According to Dudley (1992), The Green Revolution focused on producing high yielding variety (HYV) plants and promoting chemical fertilizers and pesticides to be used in combination with the HYVs. The majority of promotions for and experiments of the Green Revolution took place in Asia. The experimental work of the Green Revolution was funded by industrialized countries and the corporate agro-businesses controlling politics in those countries (Shiva, 1991). In Thailand, the U.S. was a major supporter of industrial agricultural development because of the US's fear of spreading Communist tendencies in rural areas of Thailand (Apichai, 2000).

Dudley (1992) writes of several interrelated problematic physical and metaphysical assumptions of the Green Revolution. First, HYV crops were dependent on chemical fertilizers to produce an average harvest. This meant that farmers not only had to buy the HYV varieties from the agro-businesses that developed and sold the HYVs, they also had to invest in expensive imported chemicals to feed and maintain the HYV plants. Similarly, local farmers were encouraged to give up their local seed varieties that they had been cultivating for thousands of years and replace them with a monocrop of one genetically modified seed (Shiva, 1991). Locally bred seed varieties that were suited to local

conditions were lost while new seed varieties often fared worse than traditional varieties under natural conditions.

The mechanistic view of nature and the functions of nature was still apparent in the way that Green Revolution scientists talked about HYV seeds. Shiva (1991) writes that scientists described plants as factories; HYV seeds were machines working in the factories. Fertilizers and other chemicals were likened to the fossil fuels that support the working of the machines. Scientific knowledge served to accelerate the workings of the machines in the factory. HYVs were thought of as a new super-technology that could produce food in factory perfect form, to save the world.

The replacement of diverse, locally specialized plants grown in organic soils with monocrops grown with intensive chemical application seriously disrupted the natural ecology of local farmland. Seeds that had been used before the HYVs were introduced were lost, and farmers were forced to begin purchasing new seeds from the countries that developed the HYVs every two years or their crops would fail (Shiva, 1991). Green Revolution scientists emphasized striving for increased yield, but did little to account for pest-resistance. Monocropping HYVs led to greater pest destruction than in the past unless farmers applied dangerously heavy amounts chemical pesticides. These pesticides in turn ruined the

land and made further application absolutely necessary when farmers were under pressure to produce for a cash market (Dudley, 1992).

Another of Dudley's (1992) main problems with the Green Revolution was that because of the expense of agricultural chemical inputs, only wealthier farmers could afford to invest in them. That meant that richer farmers experienced better crop production and poorer farmers who could not make large investments could not compete. This occurrence is quite similar to the experiences of small farmers in industrialized countries being put out of business by larger, wealthier farms. Small farmers went into debt more easily that wealthier farmers, and when the small farmers' crops failed, they were forced small farmers to quit farming and to sell their land to the richer farmers. Farmers who formerly owned enough land for their family's subsistence were now forced to become landless wage laborers on larger farms. In this way, the Green Revolution did the opposite of one of the things it intended to do--it made the rich richer and disenfranchised the poor (Dudley, 1992; Apichai, 1992; Shiva, 1991).

Wealthier farmers who benefited from their ability to purchase the costly inputs prescribed by Green Revolution promoters began to be able to concentrate intensively on cash crop production because of the initial comparative success of HYV seeds and Green Revolution techniques. They could expand their farms to be very large, and these farmers

stopped thinking about producing food just for local consumption, and could begin to produce food for larger outside markets (Dudley, 1992).

Producing for larger markets also meant that farmers focused on monocrops because of their efficiency in maintenance and production. Monocrops give higher yields, but are less environmentally stable, as higher and higher inputs of chemicals are needed to support high yields over long periods of time. Chemical pollution of agricultural land and water is the result (Shiva, 1991; Nitasmai, 1997). Similarly, agro-chemicals have been known to kill animals and people in agricultural areas as well as cause widespread environmental problems. Fertilizers pollute water supply, and people can get sick or die from over-exposure to chemicals. In the 1980's alone, over 100,000 rural agricultural people in developing countries died from exposure to pesticides (Curtin, 1995; Nitasmai, 1997).

Another problem with the industrial agriculture introduced by the Green Revolution is a heavy dependence on fossil fuels. Altieri (1990) maintains that industrial agriculture is not only vulnerable to collapse because of its dependence on monocultures of unstable non-local seed varieties, but also because of its dependence on fossil fuels. As mentioned above, cheap fossil fuel made industrial technology and the monoculture that supports that technology physically possible. However, fossil fuels are obviously a short-term solution, as they are finite and are

currently being wasted at an alarming rate. Fossil fuels used in agriculture make it possible for farmers to waste ten times as much energy in the production of a crop than a farm laborer or working animal would expend. Petrol subsidies and the apparently low cost of fossil fuels make this waste of energy difficult to see when economists look strictly at profits and costs, but the costs are apparent when the environmental effects are explored (Rifkin, 1985).

Another serious problem of the Green Revolution was that the crops it developed and promoted only worked well on prime agricultural land. HYVs were bred to be used in optimal conditions. Ironically, the farmers who were most in need of agricultural assistance were those on marginal lands, but because the scientists who developed HYVs intended for them to be grown in optimal conditions, farmers on marginal land were mostly excluded from any research or aid (Dudley, 1992; Shiva, 1991).

Dudley (1992) writes that conventional attempts to solve food shortage problems in developing countries that depend on technology for answers are flawed because of the assumption that modern technology can fix the world's present problems. Most agree that the goals of the Green Revolution were altruistic in their desire to feed the world, as they were also successful in achieving that goal. However, these goals were achieved at great social and environmental cost in most developing

countries. In effect, the Green Revolution exacerbated the problems of agriculture in developing countries by concentrating land ownership in the hands of the rich, decreasing environmental stability and the sustainability of farming through higher uses of agro-chemical, monocropping, and displacing poor farmers into marginal areas. The following section of this paper describes how sustainable agriculture differs from Green Revolution techniques and the industrial agriculture paradigm that created it.

Conceptual Roots of Sustainable Agriculture

There have been many variations on the definition of agricultural sustainability since its official introduction to the academic and scientific world of agriculture in the 1980's. One is that sustainability means a system's ability to supply the world's food supply demands. This way of thinking sees agriculture as a way to feed people who can afford to buy food in a cash economy while stile preserving natural resources for future use. This is not sustainability of the land, but an attempt to make industrial agriculture as a business appear sustainable (Douglass, 1992; Holmberg & Sandbrook, 1992; Pretty, 1995).

Another more holistic definition of agricultural sustainability is closely related to the term stewardship. This definition defines sustainable agriculture as an agriculture that produces at a stable level

consistently for an indefinite amount of time and seeks to maintain balance with local ecosystems (Rundquist, 1991; Welchman, 1999). Yet another definition of sustainable agriculture focuses on rural community viability. In this definition, sustainable agriculture should support rural cultures that not only have ecologically sound ethics but also consider a holistic view of life and self-reliance to be of prime importance (Douglass, 1992).

. To expand on the above two definitions of sustainable agriculture, sustainability as stewardship is endorsed by people who believe that nature has physical limits which people must obey if they are to avoid catastrophic fluctuations in food security. This definition of sustainability realizes that inputs of non-renewable resources to agricultural systems will fail (Rifkin, 1985; Schumacher, 1973; Shiva 1991). For example, the use of fossil fuel technology in agriculture initially boosts production and efficiency, but has added costs in that it someday will end. Combustion of fossil fuels pollutes the environment, and creates farmer dependency on outside technology and fuel markets. However, stewardship counters these factors. Stewardship's most important principles are as follows. Farm outputs are optimized for the long-term, not maximized for the short-term. Land stewards strive to promote and maintain biological diversity in agricultural ecosystems and cultural diversity among different people on different types of land.

Stewards also strive to improve soil quality and fertility by using continuous cover crops, rotation cropping, and green manures. Stewards also will limit or cease to use outside agro-chemicals. Although the stewardship definition of sustainable agriculture seems to be ethically motivated, it is not always the moral choice is appears to be (Douglass, 1992). In many instances, farmers turn to the stewardship model not out of concern for the environment, but out of the concern that external inputs are too expensive in the long-term and are affecting their profits (Darlington, 1990; Jackson, 1980).

Others see sustainability in terms of rural agricultural community viability. Douglass's (1992) definition of sustainability in terms of community is a radical one by popular accounts. The focus of this approach to sustainable agriculture is that all things are interrelated and humans must behave accordingly. People in environmentally sensitive agricultural communities must be interested in the welfare of other members of the community, and social relations are thought of as cooperative, not competitive. They also do not regard nature as something to be controlled, mastered, or enslaved. People who believe in the establishment of communities like these are part of the Deep Ecology movement; they see world-view as key to living an environmentally sound lifestyle (Rundquist, 1991; Shiva, 1991).

A combination of Douglass's second and third definitions of agricultural sustainability works well for the purposes of this paper: sustainable agriculture means agricultural practices and the community bonds that support them that can be continued indefinitely because they do not rely on expensive inputs or limited supplies of non-renewable resources, do not cause environmental damage or endanger human life in the area, and are suitable for any type of farm, small or large. Sustainable agriculture is community-focused farming that is flexible, diversified, and environmentally safe. It replaces chemical- and technology- oriented food production for mass markets with on-farm resources, renewable energy, conservation, and skillful management of natural processes to produce healthy foods for local markets (Apichai, 1992; Dudley, 1992; Schumacher, 1973; Zanecchia, 1991).

A good example of one type of sustainable farming that is familiar to many people is organic farming. Organic farming is part of sustainable agriculture because it assumes as fundamental that the soil is a living system. A conversion to organic farming only happens when farmers work to make the whole ecological system in which their farm operates reach a balanced state that most closely resembles the state that is most natural for that ecosystem (Dudley, 1992; Douglass, 1985). Dudley (1992) also writes that organic farming is good for farmers in developing countries because it limits financial dependence on outside markets and

middlemen, supports and builds on indigenous traditional knowledge, is easy to use in small or marginal areas, uses little or no fossil fuel or imported fuel, and does not adversely affect farmers' health because they are not exposed to highly concentrated agro-chemicals.

Although organic farming is important to sustainable agriculture, it does not provide all the needed solutions. One of the most important things that sustainable agriculture achieves as an ideology is that it questions the embedded cultural assumptions of industrial agriculture. Sustainable agriculture represents nearly the opposite of everything that industrial agriculture involves. While industrial agriculture in centralized, specialized, and profit driven, sustainable agriculture is localized, diversified, and driven by community needs. Industrialized agriculture separates the concept of production and consumption, causing alienation from the source of life, but sustainable agriculture keeps production and consumption in the same place, so humans are always aware of how their environment sustains them. Industrial agriculture assumes that financial gain and technological complexity are measures of success, but sustainable agriculture measures success through the ability of its system to accentuate and blend with the natural ecosystem so it can produce quality foods for a local community on a indefinitely long-term basis. Industrial agriculture sees people as only consumers in the economic equation of costs and profit, but sustainable

agriculture sees the quality of life of people as one of its key motivating factors for existence. Industrial agriculture also assumes that science and technology can fix any problem, material or otherwise. Sustainable agriculture supports the idea that indigenous farming methods and appropriate technology choices based on traditional knowledge are often superior to technological innovation because they have withstood the test of time. These dichotomies between approaches to food production are sometimes called "reversals." Chambers (1998) writes that these reversals in agriculture are essential for agricultural development that focuses on quality of life as opposed to economic profit. The following section of this paper illustrates how many of these reversals have been present in the development of modern sustainable agriculture in Thailand.

The Acceptance and Expansion of Industrial Agriculture in Rural Thailand

This section describes how profit-driven industrial agriculture developed in Thailand. Thailand's history of agricultural exploitation begins well before the actual introduction of industrial agriculture. Therefore, this section will begin farther back than the Green Revolution period to give the reader an idea of the subtle political and ideological events that lead to the acceptance and application of industrial

agriculture in Northern Thailand, the site of FEDRA's rural sustainable agriculture programs.

Marten (1990) writes that the Chiang Mai valley of Northern Thailand was cultivated in a sustainable fashion using a traditional integrated farming method for hundreds of years before the introduction of industrial agriculture. Sticky rice was the main crop, but farms were self-sufficient because they could grow vegetables and fruit trees as they liked and intersperse them with fallow forest areas and stream-irrigated rice paddies. The farms focused on producing for subsistence, recycled organic household wastes in their fields, used only local sources of energy to maintain their land, and strove for diversity in crop varieties and planting schemes (Cohen, 1998; Filipchuk, 1991). This way of life made the people independent of outside economic crises (Apichai, 1992).

King Mengrai incorporated Northern Thailand and other remote areas of the country into Central Thailand's economy in the 1200s. King Mengrai wanted Chiang Mai's fertile river valley to serve as a source of rice for construction laborers employed by the central government. However, the overall financial and environmental impact that this had on Northern Thailand and other remote areas like it was small (Cohen, 1998).

Rice farming for non-local use increased gradually in Thailand during the early colonial period, but the 1855 Bowring Treaty is often

cited as the event that effectively put Thailand into a colony's role although it was never officially colonized (Darlington, 2000). King Mongkut (or Rama IV, reigned 1851-1868) hoped to prevent Thailand from being colonized by the British, who had already taken Burma to the west, while the French who had already taken Laos and Vietnam to the east and north. To avoid colonization, King Mongkut made an export deal with the British that forever altered the nature of the Thai economy (Apichai, 1992; Cohen, 1998; Darlington, 2000; Wyatt, 1984). Thailand began to export massive quantities of rice to Britain, facilitated by foreign-built steamships and railroads (Cohen, 1998). It was also at this time that King Mongkut strove to increase Thai nationalism and internal unity to repel the colonial powers that surrounded Thailand at every border. The king achieved this by homogenizing the beliefs and behaviors of Thai citizens through the institution of standards for schools, public works, farming practices, infrastructure, language use, and religious practice (Darlington, 2000). In Chapter III, a discussion of the effects of this unification through standardization and centralization on Buddhism as the national religion of Thailand will be examined.

In the fifty years following the Bowring Treaty, international rice exports jumped from approximately one million haab to thirteen million haab (one haab = 60 kilograms) (Prawase, 1988). This expansion of exported rice was accompanied by an explosion of forest clearing for

timber and subsequent cultivation of that land to facilitate more rice growth (Cohen, 1998; Prawase, 1988).

After World War II, Thailand, which had been invaded by Japan and surrounded by communist China, Vietnam, and Laos, was afraid that communist insurgencies might occur in remote border areas. Thailand called on help from the United States because of its strong anti-Communist stance. The solution proposed by the US was to eliminate any possible areas were communists could hide, such as remote jungle areas, and to develop urban areas of Thailand for capitalist industrial production (Apichai, 1992; Cohen, 1998). Large roads were built connecting major rural production areas throughout Thailand's northern provinces of Chiang Mai and Chiang Rai. Jungle areas were first timbered for profit, and then cleared for agricultural use. Green Revolution extension workers and researchers introduced commercial agriculture. The focus of the work of the Green Revolution was the same as described above: to introduce new crops to feed growing populations and create markets for agricultural products by increasing dependency on imported agro-chemicals and tools. Chambers (1998) writes that oftentimes development projects and the development workers themselves end up functioning as salespeople for the products of the countries they come from. Green Revolution development workers were no exception. HYV rice, chemical fertilizers and pesticides, tractors and

other heavy technological machinery were enthusiastically imported and distributed to Thai farmers. Green Revolution promoters asked that farmers demand more of their land, and plant tobacco, soybeans, peanuts, garlic, mungbeans, vegetables, peppers, and cassava in monocrops during the times when fields were not being used for rice production (Cohen, 1998; Filipchuk, 1991). Today northern Thailand is a major center for industrial agricultural production of these crops, and monocrop industrial farms dominate the landscape when viewed from every public road (Wyatt, 1984).

With hopes for massive expansion in agricultural production as a result of Green Revolution technology, Thailand's government began a national focus on industrial and agricultural exports (Nitasmai, 1998). This focus on exports again worked much like the previous description of what happens in industrial and Green Revolution farming. Larger wealthier farms began to produce massive quantities of crops for profit, and small farmers were literally pushed out of their livelihoods. Larger farms became able to take control of larger areas of land while small farmers became landless laborers (Apichai, 1992; Chambers, 1998; Cohen, 1998).

In 1958, a powerful man from the Thai military, Field Marshall Sarit Thanarat, took power of the Thai government through a coup. Sarit was highly pro-development, and he employed a powerful propaganda of

ideology to reach his goals. He began the trend of heavy modern development and industrialization in Thailand that only began to slow down in 1985 (Apichai, 1996). Sarit pushed the idea of agricultural intensification, an export-oriented industrial economy, and cash cropping on the Thai citizens. Sarit taught Thai citizens that industrial development was a morally good thing, and used an ideology of patriotism, nationalism, and religious unity to back him up (Darlington, 2000). Sarit also tightened the state control of Buddhism to serve his ideology. The implications of this move will be further discussed in Chapter III.

The results of Sarit's policies were amazing centralized economic growth, a sharp drop in the quality of life of rural people, environmental degradation, and the devaluation of diverse local cultures (Darlington, 2000). As Hirsh (1998) writes, the government's policy towards development at the time was not focused on quality of life or environment, but rather on a technological management of the environment for maximizing profit. Just as industrial agribusiness in the U.S. believe that technology can solve any problem, the Thai government promoted the same approach to the Thai public.

As agriculture expanded, the use of steep marginal land for foreign crops not well suited for these fragile environments caused erosion and contamination of water from heavy chemical applications. The urban

demand for popular vegetables rose as urban migrations led to higher urban populations. Because cash income was becoming more and more necessary for farmers who were caught up in the export economy, monocrops for outside sale became more and more popular (Marten, 1990; Wyatt, 1984).

However, Thailand's economic export development program was not focused on improving only its agricultural sector. The Thai government was actually more interested in increasing industrial production. This meant that while the government pushed for more agricultural production, it favored and subsidized industrial operations in big cities. When peasant farmers became landless as larger wealthier farmers bought up their land, many of them migrated to cities in search of industrial work in factories or in the ever-growing service sector. Migrations to urban areas put pressure on urban areas, and urban and rural people became enemies as they battled for scarce jobs and resources (Apichai, 1992; Marten, 1990; Sulak, 1988). Today, the urban-rural tensions continue and are apparent in the way that both urban and rural people express their disdain for each other (Lohmann, 1992).

Not only were social conflicts a result of this emphasis on industrialization, serious environmental and land use conflicts also began to arise. Scarce water resources used in irrigation of marginal

lands in rural areas were often diverted for industrial uses in big cities. Rivers were dammed and rural areas were flooded as the demand for an increase in water to urban areas grew exponentially with the growth of industrial factories. Land along new major roads that had previously been agricultural land was bought up by wealthy investors and created "ribbons" of highly developed shopping and service areas that drain resources from agricultural areas behind them (Cohen, 1998; Marten, 1990).

The Emergence of Sustainable Agriculture in Thailand

Traditional Thai farmers had been practicing different forms of sustainable agriculture in Thailand for thousands of years before the idea of sustainable agriculture in its modern form was created. In the Chiang Mai valley, farmers had been using a system of agricultural subsistence that is often compared to permaculture. This meant that people farmed the land as was most appropriate for the land, optimizing it where they could, and leaving large swaths of wild areas to supply them with wild foods and medicines (Cohen, 1998; Marten 1990; Apichai, 1992). This section of the paper describes how sustainable agriculture developed in Thailand and continues its popularity because of its base in indigenous farming methods.

The modern concept of sustainable agriculture became popular in Thailand in the 1980s. Thai sustainable agriculture's popularity was due to a regional economic crisis that forced rural farmers to re-assess their dependence on industrial inputs such as imported chemical inputs and technology. At that time, the rate of deaths from chemical poisonings and contamination had been climbing. Soil quality was degrading, and land that was previously productive was no longer producing anything. Rivers were contaminated with agricultural run-off and people and animals in agricultural communities were either getting sick or dying from contaminated air, food, and water (Nitasmai, 1996). The people felt they needed a new agricultural paradigm, a new way of approaching agriculture that was life giving, not life-threatening (Prawase, 1998). Many felt that a return to traditional methods blended with new and improved environmentally safe methods was necessary. Others believed that these environmentally safe methods had to be backed up with a system of traditional ethics, as the ethics behind Western agricultural and industrial modernization were destroying traditional Thai culture (Prawase, 1988). Following, some agricultural methods popular in Thailand are described. The following chapter then addresses the system of traditional ethics Thai Buddhists are now using to back up sustainable agricultural methods.

Types of Sustainable Agriculture Popular in Thailand

Although different scholars and agricultural workers have different ideas of what methods of agriculture are most sustainable, the four methods that are most popular in Thailand will be briefly described here. Integrated farming is a type of sustainable agriculture that uses two or more crops together which use soil, light, and water differently but also support each other in a symbiotic relationship. In this way, crops do not compete for the same nutrients or resources and often help each other grow by providing shade, nutrients, or habitat for each other. Integrated farming is also an effective way to control pests because it makes infection of large areas of a single type of plant difficult. Small farm animals such as pigs or chickens are often allowed to roam freely in integrated farming, as their manure can be used as a fertilizer for the crops (Nitasmai, 1996).

Agroforestry is another popular form of sustainable agriculture in Thailand. This method focuses on growing long-standing fruit trees or other types of useful trees and shrubs and then planting annual crops in between the trees that benefit from and also supply nutrients for the trees. Trees are said to provide habitat for birds that cut down on detrimental insects. Trees also provide fuel wood, and an environment for fungus and other natural foods (Apichai, 1992; Lohmann, 1992).

However, to some agroforestry only means trees grown for timber, so this terminology has sometimes been problematic for farmers wishing to apply these methods.

Natural farming is also being practiced in Northern Thailand and other regions with positive results. Natural farming is similar to integrated farming in that it chooses plants that are mutually supportive and use different soil, light, and water resources. It also allows free-range animals for manure fertilizer. An advantage of free-range animals is that food does not have to be grown specifically for them, and they tend to eat pests. However, natural farming focuses strongly on not tilling the soil, which is allowable in integrated farming and agroforestry. Natural farming focuses most on following nature's basic ecological design and disturbing the environment as little as possible. The no-till philosophy maintains that soil health is the most important part of farming, and tilling the soil destroys the nutrients and composition of soil. Cover crops are grown and cut back for the planting of regular crops, and the cover crops and food crops grow at different heights and use different resources (Fukuoka, 1978).

Although all of these methods of sustainable agriculture are slightly different, they all stress the importance of understanding the interrelationships between different parts of the ecosystem. Of particular importance is the human place in the system; humans should not

destroy any part of the ecosystem and strive for perfect balance between elements of the system. These methods all also focus on small-scale use for subsistence, producing just enough for a family, community, or small local market. This is called decentralized agriculture. Every different local area produces for its own needs, on its own terms. Schumacher (1973), Apichai (2000), Sulak (2000c), and Chambers (1993) agree that decentralized locally appropriate sustainable agriculture is key to improving self-reliance and therefore human quality of life.

Summary

In this chapter, I have briefly outlined the ideologies behind industrial agriculture and sustainable agriculture as well as both of their appearances in Thailand. I have shown that the dominant characteristics of industrial agriculture are profit-based and that the dominant characteristics of sustainable agriculture are sustenance and quality of life based. I have also traced the arrival and implementation of industrial agriculture in Thailand as well as the response to it given by supporters of sustainable agriculture. The following chapter will explore the interpretations of Buddhism as an environmentally compatible philosophy. The following chapter also addresses the ways in which Buddhist environmental ethics have been interpreted by modern

development monks and Buddhist scholars in ways that support and promote sustainable agriculture.

CHAPTER III

BUDDHIST ENVIRONMENTAL ETHICS

This chapter explores Thai Buddhist environmental ethics in historical and theoretical contexts. The purpose of this is not to argue that Buddhism is an intrinsically environmental religion, but rather to illustrate how its concepts can be applied effectively to the solving of ethical environmental dilemmas, particularly those encountered in modern agriculture. All major religions address stewardship of natural resources as fundamental to their ethics (Jackson, 1980; Schumacher, 1973). However, because I am interested in sustainable agriculture in Thailand, it is more relevant to examine the problems of agriculture within an appropriate cultural context. Again, the aim of this study is not to prove that Buddhism is the best possible choice for sustainable agricultural development programs, but rather is a constructive model upon which Thai development programs working with Buddhist clients can rely on for a positive easily reinforced moral framework.

This chapter is divided into two main parts. The first part explores the question of whether or not Buddhism is inherently environmental as a philosophy of life. Within this section, the origin and development of Buddhism in Thailand is described. How the varying interpretations

and social applications of Buddhism's teachings that have been interpreted as environmentally sensitive and pro-active are is also explored. The first part will also briefly discuss the role of animism in Thai Buddhism.

The second part of this chapter focuses on the work of Thai Buddhist development and environmental activists, scholars and monks and their interpretations of Buddhist environmental ethics. The following chapter outlines how one Thai Buddhist monk of has applied these interpretations of Buddhism's ethics in a foundation that supports sustainable agriculture training programs for rural farmers.

An Analysis of Buddhist Texts

This section will focus on the writings of the *Tipitaka*, the *Jataka* and *Jatakamala* and how they have been recently interpreted for environmental enlightenment. The *Tipitaka* (also *Tripitaka*) is the written form of Buddha's teachings that were compiled by the Buddha during his lifetime and after his death by his disciples. *Sutras* (also *sutta* and *suttanta*) are the various discourses within the *Tipitaka*. The four noble truths of Buddhism are always the foundation of any discussion of the teachings of the *Tipitaka*. The four noble truths are as follows. First, *dukkha*, or suffering, exists. This includes human suffering of any kind, physical or metaphysical, and can also be extended to all living things.

Second, *dukkha* or suffering is caused by desire. This desire can be a desire for material or intangible things, and also includes the desire to not experience desire. The third truth is that *dukkha* can be avoided when people focus on the impermanence of life. When people think about how their own lives are short and how all of their material possessions and petty feelings will become useless or disappear with them, they will be able to focus on more serious matters, such as preparing society for a better future. The fourth of the noble truths advises moderation in all things. This truth is often called the "Middle Path." By remaining on the Middle Path, people can escape the *dukkha* caused by their desire for material objects because moderation in all things creates feelings of equanimity, balance, and inner-peace (Butt, 1995; Prebish, 1979; Sulak, 1988).

Modern Buddhists studying the four noble truths can freely apply them to any aspect of environmentalism. A popular train of thought is that the human desire for material objects (often interpreted as natural resources and the money they represent) is causing the environmental *dukkha* of the world and its inhabitants today (Habito, 1997; Kraft, 1997; Sponsel and Natadecha-Sponsel, 1997). The logical Buddhist way to end this suffering is to follow the Middle Path of moderation. Moderation of all excessive behaviors ends the initial desire for material possessions that have caused the environmental and spiritual *dukkha* of all beings.

As a result of this moderation and its resultant renouncing of material pleasures, desire is eliminated and all beings are freed from the suffering caused by human desires (Butt, 1995).

Apichai (1992) takes the elimination of greed as the main goal of modern society if it wants to solve its social, economic, and environmental problems. Apichai writes that the fundamental assumption by Western economists that humans are by their intrinsic nature greedy and self-serving is detrimental to Thai thinking, because Thais traditionally think of themselves as generous and community-focused.

The Middle Path prescribed by the fourth noble truth is often referred to as the "Eight-Fold Path." The Buddha listed eight steps that build upon each other that every person can do to end his or her individual cycles of unenlightened birth and death. A person who follows the Eight-fold Path can eventually reach enlightenment, and then work for the enlightenment of other humans and other beings with compassion and loving kindness (Butt, 1995; Lombardi, 1993).

The Eightfold Path consists of right view, resolve, speech, action, livelihood, effort, mindfulness, and concentration. According to Bullit and Butt right view means seeing why *dukkha* happens, or seeing that suffering arises from human craving or desire. Right resolve is when after a person understands the nature of *dukkha*, he or she will resolve

to work towards freedom from materialism, sensuality, and negativity. Right speech and right action request that humans not lie, kill, steal, or abuse anyone or anything sexually. Right livelihood means that any person may not engage in a form of business that is dishonest, cruel, or otherwise inflicts harm on other living beings. Right effort encourages individuals to strive towards positive human development, generosity and plenitude for all. Right mindfulness is the stage that people will be at when they are able to put aside desire, greed, and distress in order to reach the final step of the path, concentration. Right concentration is where the human is able to reach a state of existence where he or she no longer feels pain nor pleasure for him or her self, but only works selflessly and compassionately toward the betterment of others (Butt, 1995).

Scholars of environmental Buddhism write that the steps enumerated in the Eight-Fold Path can show modern people all over the world how to live environmentally appropriate lives (Aitkin, 1990; Burford, 1992; Dhammananda, 1990; Dissanayaka, 1999). Giving up desire for and attachment to material things, being honest and upright in all business, and striving towards selfless compassionate service toward all living things are seen as fundamental aspects of an ideology that will ensure the survival and flourishing of future generations.

Not surprisingly, many these same ideas have been adopted by the Deep Ecology movement, that aims to imbue people with a neo-Buddhist morality, in an attempt to give moral foundation to human decisions that involve the environment (Naess, 1973). Deep ecology strives to facilitate a worldwide change in ideology from one that endorses the exploitation of the environment to satisfy human greed to one that recognizes humans and the entire world as one symbiotic being that must maintain balance for survival (Devall, 2000; Rundquist, 1991). Deep Ecology will be discussed further in Chapter V.

The basic rules, or precepts, of Buddhist morality are based on the steps of the Eight Fold Path. According to Bhattacharya (1992), Butt (1995) Loori (1997) and Sulak (1988), the basic rules of Buddhism are: no killing, no stealing, no sexual misconduct, no false speech, and no intoxication. No killing is obvious and most popular in its application to environmental issues. The first rule is often seen in terms of *ahimsa*, from the Sanskrit, which conveys an idea of non-violent loving compassion towards all things (Hesse, 1951; Shiva, 1991).

The first rule of no killing, or non-violence, can be extended to include all forms of life. The scripture *Anguttara Naru.* tells many tales of monks who broke fruit tree branches and suffered negative karma as a result because the monks did not respect the natural truth of the tree (De Silva, 2000; Dhamma, 1990). Similarly, monks and nuns in the

early Theravada Buddhist tradition were forbidden to eat anything that had the potential to continue growing, including animals, fruits or vegetables containing seeds, and segments of twigs or stems that might be able to develop roots (Chatsumarn, 1990). These forest-dwelling Buddhists' environmental responsibilities also included planting trees and maintaining a natural, biologically diverse area around the temple where medicinal plants and beneficial animal species were encouraged to live (Chatsumarn, 1990; De Silva, 2000).

Despite the other four rules' apparent initial irrelevance to environmental issues, Loori (1997) interprets the precepts to have more all-encompassing environmental implications. Killing the environment or stealing from the environment is cited as essential aspects of the first and second rules. The third rule of sexual misconduct is interpreted as a call to critique the negative karmic consequences of genetic engineering and technological alteration of the sacred aspects of sexual reproduction. This idea is particularly important for Buddhist interested in sustainable agriculture, as it gives a Buddhist ethical grounding to be against the introduction of genetically modified organisms in Thai farming.

The fourth rule, no lying, is applied to lying in the context of "greenwashing" environmentally unsafe practices. Loori interprets the fifth precept of no drunkenness or intoxication as a request that Buddhists should not "cloud the mind," (often interpreted as due to a

drug, but here seen as in reference to any blindness, particularly from greed) because it is selfish emotions that cause people to care more about making money than stewarding the environment (p. 179).

Loori also enumerates another five less frequently discussed precepts and their relationship to environmental awareness. The sixth and seventh precepts are concerned with not criticizing others and not putting yourself above others because all things are part of an interrelated whole. Loori interprets these as a request that humans not try to bend nature to suit what humans think is "right" as well as not putting humans above nature, because the Buddha saw humans as one facet of nature, not separate from it.

The eighth precept commands humans to give generously. This command is interpreted as giving back to nature for what you take and to only take what you need to ensure that one person's greed does not cause another's starvation. The ninth precept requests that people seek harmony and refuse anger, because anger toward any thing, including all things in nature, is debilitating in its perpetuation of negative energy. Loori interprets the final precept of "do not defile the Three Treasures" as a command to respect the totality of the self (represented by the *Sangha*), the environment (represented by the *Dharma*), and an understanding of the environment (represented by the Buddha). To defile any of the Three

Treasures is to defile everything, demonstrating a lack of responsibility to the sacred nature of all interrelated beings.

Aspects of the precepts and the Eight-fold Path are often combined in Buddhist teachings as the five "ennobling virtues." These virtues include loving-kindness and compassion, right means of livelihood and generosity, sexual restraint, truthfulness and sincerity, and mindfulness and heedfulness. Scholars of Buddhist environmental ethics have applied all of these ennobling virtues to environmental issues. The first ennobling virtue of loving-kindness and compassion is seen as extendible to the environment, where humans do not destroy their environment because they have compassion for the intrinsically valuable individual yet interrelated elements of nature. Sulak (1990) expresses this concept where he writes that:

> To be a true Buddhist, one must lead one's life in harmony with all others in the universe, by exploiting none and serving all. Yet one must serve mankind as well as others knowingly-- not blindly (p. 139).

The second virtue of right means of livelihood and generosity has been interpreted as choosing work that, as Sulak writes above, serve others, and not exclusively the self. That would mean choosing work and lifestyles that compliment the local environment instead of changing or destroying it for selfish or unsustainable ends (Kotter, 1990).

A good example of a scholar's interpretation of the third virtue of sexual restraint, Gross (1997) examines correct sexual behavior in terms of limiting population growth for a more sustainable environment. Others, particularly those interested in sustainable agriculture based on Buddhist principles such as Apichai (1992) and monks working with Phra Dhammadilok's organization, FEDRA, would interpret this precept in terms of scientists' meddling with the genes of plants and animals for greed-oriented needs such as profit, consumer dependence, and fame (FEDRA, 2000d).

The fourth virtue of truthfulness and sincerity are also discussed within an environmental framework when considering environmentally conscious behavior of businesses and consumers in any context involving natural resources. Humans must be truthful in their expectations and dealings with nature so that both benefit equally from interactions so that natural resources are not depleted (Spretnak, 1986). In fact, the Pali word *dharma*, which means "truth" is also the Pali word for "nature": the truth *is* nature and vice-versa, therefore making it impossible to avoid the truth of environmental responsibility (De Silva, 2000; Dhamma, 1990). This fundamental basis of Buddhism is difficult to over-emphasize. When nature and the truth are one, humans need only to look at the natural processes of their environment to understand the truth of the universe and their place within it.

The fifth virtue of mindfulness and heedfulness is one of the most popularly discussed virtues of Buddhism. If one is mindful, then one first is aware of the interconnectedness of the self and the rest of the universe. A frequently cited example of Buddhism's ancient focus on environmental mindfulness is called the "Jeweled Net of Indra" (Cook, 1977; Kaza, 1997). This multi-dimensional net is said to expand throughout the universe, and it consists of countless numbers of jewels, seamlessly bound together, which all infinitely reflect whatever is reflected in every other jewel. This imagery is frequently used as an example in Buddhist literature of how all actions in the universe influence (are reflected in or by) other actions, events, and times in the universe (Aitkin, 1990; Cook, 1977). All humans must be mindful as well as heedful of what natural laws their world is governed by, for absolutely no action is without consequence or repercussion, no matter how small (Cook, 1977; Kraft, 1997). Mindfulness is also a virtue that makes it impossible to focus solely on the self in the present moment, because a true Buddhist can see that even the present moment is really the past and the future, connected together, like everything else in the "jeweled net" of the universe (Kraft, 1997).

Another teaching in the Buddhist path to freedom from suffering caused by desire is called the "threefold way." The threefold way involves first knowing the self so one can practice correct speech and action as

well as correct relations with the environment, the earth, and all animate and inanimate things in the universe (Sulak, 1990). Once again, knowing the self means reflecting upon the true nature of the physical body, the mind, and the setting in which the body is located. When the individual practitioner realizes the ultimate impermanence of the physical vehicle, he or she will realize how the second and third aspects of the threefold way are actually unchangeable universal laws which humans must obey if they are to lessen or escape their experience of suffering (Burford, 1992).

The *Jataka*, *Jatakamala*, and Other Didactic Texts

Another way that scholars of Buddhism derive environmental lessons from the many teachings of the Buddha is by extrapolating environmentally centered data from Buddhist texts. Some of the favorite extrapolations include forest settings and didactic animal characters. Stories in the *Jataka* (Buddha's birth stories) relate how people in the Buddha's lifetime were once animals in another lifetime, working through the same kinds of karmic responsibilities as they were as humans in the present. The *Jataka* is an unrefined Pali text, while the *Jatakamala* is a highly refined Sanskrit version of the same stories, written much later than the originals. The *Jatakamala* differs from the *Jataka* in its representation of plants and animals substantially because it takes pains

to show how each animal that the Buddha had been incarnated as was an unusual animal who denied its animal nature and strove toward a higher moral order (Koroche, 1989).

Interestingly, in some of the *Jataka* stories, the Buddha is incarnate in the form of a tree spirit (as in the *Rukkhadhamma Jataka* and *Vyaddha Jataka*) or a clump of grass (as in the *Kusanjali Jataka*). Chapple (1997) writes that these stories of the Buddha's incarnations as plants have an inherently environmental message because of the stories' moral lessons; all of them focus on the balance between humans and the natural environment that they live in. The stories serve to demonstrate how cause and effect always occur in the natural world, and particularly how humans must understand the place and function of plants in the forest as well as plants used for human consumption.

Other texts, such as the *Vinaya Pitaka*, describe how it is a sin for anyone to knowingly cut down a tree, plant, fruit, or any part of a plant or seed that had the potential to reproduce another plant in any way for human consumption. Theravada monks who were found guilty of this crime were expatriated from the monastery, according to Dissanayaka (1999) and Chatsumarn (1990b). Similarly, people who dirtied the natural flow of water feeding a forest or other vegetative area by throwing waste into it were considered contaminators who would surely experience a karmic hell for their evil deeds (Chatsumarn, 1990a).

Chapple (1997) Chatsumarn (1990a), Dhamma (1990), and De Silva (1990) write that the ancient *Metta Sutta* and *Lankavatara Sutra* texts shows how when humans can see how their own existence is tied into the existence of those animals, humans will also see how their behavior as humans affects others because "being connected with the process of taking birth, one is kin to all wild and domestic animals, birds, and beings born from the womb" (Suzuki in Chapple, 1997, p. 134). The following Buddhist logic is that humans will not want to hurt their own relatives, so it is intrinsically wrong to kill forest animals or beings of any kind (Chatsumarn, 1990b; Gross, 1997).

Natural Settings and Prescribed Locations

This section will discuss how Buddhist texts are interpreted as describing the ideal human habitat to be a pastoral and environmentally balanced one. Dissanayaka (1999) writes that the *Mangala Suttanta* is particularly useful in helping the modern Buddhist to understand the role of the environment in Buddhism. The *Mangala Suttanta* explains why it is important to the spiritual and physical well being of any individual to live in an area that is close to plants and animals in their natural habitats. Living in a natural setting reminds the Buddhist practitioner that the Buddha attained enlightenment in a pastoral area, on the bank of a river, under a tree. Similarly, when the Buddha felt

conflicting emotions, he retreated to the forest for meditation (Walker, 1999). He gave his first sermon, *Dhamma cakka pavattana sutta*, in a heavily forested deer park, and encouraged monasteries to be built in forested areas. Even the word for monastery, *vihapa*, literally means "an open place in the forest," according to Dissanayaka (1999).

Similarly, ancient texts that describe the Buddha's life are set in pastoral, vegetative areas. These texts also carefully detail specific plants found in the setting of each story, as they are in the *Sutta Nipata* (Chatsumarn, 1990b). For example, when the Buddha died, flowers from the *Salal* trees that he was lying under began to fall, and as his followers wrote, washed away his life (Dissanayaka, 1999). Beyond obvious symbolism, scholars believe that the reason for the inclusion of these plants, such as the *Salal* tree, was that the plants identified were useful or sacred medicinal plants. Meditating upon the intrinsic and beneficial natures of those plants would help guide students of Buddhism in their understanding of the interdependence of the natural universe. Meditation upon the nature of plants and animals, as well as communicating loving-kindness and compassion to all things living around human forest settlements was also seen as a virtue (De Silva, 1990). Large trees, particularly the Bodi (*ficus religiosa*) tree under which the Buddha attained enlightenment, were also important in the study of Buddhism because the intrinsic spirit of the tree that ultimately

triggered to the Buddha's enlightenment experience (Dhamma, 1990; Dissanayaka, 1999; Chatsumarn, 1990b).

Criticisms of Buddhist Environmentalism

Despite the above positive images of environmental awareness in Buddhist philosophy, one of the main criticisms of Buddhist environmentalism in general is that Buddhism was not originally intended to be particularly involved in active environmental protection. The phrase "Buddhist environmentalism" is often cited as a label that has been applied to Buddhism by Western people who romanticize an exotic religion that they can use to escape the moral decrepitude of their own society (Eckel, 1997; Harris, 1991). Nash (1982) illustrates this anti-Western predisposition towards romanticizing the exotic East. These scholars argue that the people of the Orient and Oriental religions as are whole is more respectful and loving towards nature than the Judeo-Christian culture as a whole, which is environmentally destructive and can only see nature in terms of plunder and exploitation. However, other scholars are quick to warn that an over-glorification of an exotic religion and a lack of attention to one's own religious ethics is highly problematic (Jackson, 1980).

Despite these criticisms that Buddhism has been interpreted as too environmentally focused, Buddhism in Thailand has also been

criticized for being non-environmentally conscious. Lohmann (1995a) writes that Thai Buddhists traditionally view wild nature as a problem that must be cleared and cultivated by humans before it can become valuable. Sparkes (1995) and Taylor (1993) explain that Thais generally associate the word "*paa*" (forest) with negative images, particularly ghosts, wild animals, imbalance, and sickness. This interpretation may be a misunderstanding of Thai animism on the part of these scholars, as many people tend to forget that Thai Buddhism is not strictly textbook Buddhism (Guelden, 1995). However, Jones (1989) and Sulak (1988a) believe that Buddhism in Thailand has been altered by powerful political and economic forces to the point where what Thais consider to be Buddhist behavior is delusion, resulting from government interference with religion, which has led to misapplication of Buddhist precepts.

Chatsumarn (1990b) maintains that the misapplication of these precepts in Thailand can be seen mostly in the practice of Buddhism solely for the advancement of the self, and the placement of self-interest above anything environmental. An example of this problem is competitive "merit-making," to see who can donate the most money to temples and therefore accumulate the most merit regardless of their morally reprehensible everyday behavior (Sulak, 1988a). This behavior is one of the major problems with Thai Buddhism today. In Chapter III, I will discuss how Phra Dhammadilok has turned this behavior into

something positive without challenging the government's authority to maintain ritualistic merit making in Thai Buddhism.

Some critics of environmental Buddhism argue that it is not Buddhism as a religion that is fundamentally ecologically friendly, but rather the nature-worshipping religions that were popular all over Asia before the introduction of Buddhism. Hinduism was most influential in the shaping of Buddhist philosophy because Buddhism was developed in a predominantly Hindu society (Wyatt, 1984).

Hinduism as a religion contains thousands of different didactic stories and scriptures that address the concept of nature. One is the description of the Jeweled Net of Indra that, as previously described, illustrates the laws of cause and effect throughout the universe. All action, positive or negative, has repercussions in every realm of the universe. It is easy to see why the Jeweled Net is a popular subject of comparison to modern Western thought. Not only is the net similar to the idea of ecological "webs" now popular in the discourse of global environmentalism, but it also counters the rigid hierarchical order of the Western mind that Buddhist environmentalists seek to do away with (Cook, 1977; Dasa, 1993; Snider, 2000).

Dasa and Edwardes (1969) have documented that Hinduism included tree worship, gods that control the sun, moon, and harvesting cycles. These animist undercurrents made Hinduism a complex

sophisticated philosophy. People living in India before Buddhism had daily contact with nature and had to understand and respect its cycles for their sustenance. Early Hindus developed these beliefs into an environmentally sensitive religion, where gods and goddesses represent the major forces of creation, destruction, and preservation seen in nature ("Finding the Edges of Hinduism," 1999). Interestingly, *karma*, in the ancient Hindu belief, is a way of describing energy flow. A bad social or environmental deed brought bad energy, so all people were encouraged to create only positive energy for themselves and the rest of the environment that they had to live in (Dasa, 1993; Edwardes, 1969).

Thai culture is not only strongly influenced by these Hindu ideas; it is also dominated by animistic beliefs. Thai animism is not only a historical part of Thai culture, but lives on today in many animist festivals that worship nature spirits in many forms. Every animate and inanimate thing is believed to have a spirit, and mountains, rivers, trees, sacred groves, and many types of plants and stones are all worshipped. When the people worship these spirits, they ask for nature's benevolence (Butt, 1995; Guelden, 1995). Evidence of the blending of native Thai and Hindu animism into the dominant Buddhist culture can be found in the placement of Brahman statues inside Thai temples. Similarly, spirit shrines near large trees, sacred forested areas, and spirit houses nearby city and village homes are a common and highly accepted part of Thai

Buddhism. Thais are aware that these practices are not strictly Buddhist, but they also recognize that belief in them does not contradict anything the Buddha taught, so there is little obvious conflict (Darlington, 1990; Guelden, 1995).

History of Buddhism: Arrival and Acceptance in Thailand

Buddhism began as a formal philosophy in Northern India between 600 to 400 BCE when Gotama Siddhartha, a reform-minded tribal Indian prince became the Buddha after his many experiments with different extremes of religious practices (Bhattacharya, 1992; Bullit, 1999). The Buddha preached his teachings until he was about 80 years old and gained many followers throughout India. Approximately 100 years after the Buddha's death, followers of Buddhism began dividing into what have become the Mahayana and Theravada traditions. Mahayana Buddhism spread into China, Tibet, Japan, Korea, and most of Vietnam. Theravada, the Buddhism of South and Southeast Asia began when the Indian King Asoke of India sent his son to Ceylon (Sri Lanka) to introduce the royal Buddhist religion to the Singhalese nature-worshippers. This introduced religion, after refinement by the Singhalese, became officially recognized as Theravada (Robinson & Johnson, 1996). Sri Lankan royalty combined the new Buddhist philosophy with essential aspects of their traditional animist belief

system, and then actively sought to spread the word of Theravada to Thailand and Burma (Bhattacharya, 1992).

In Thailand, the Thai royalty readily adopted Buddhism as a formal religion. Sulak (1988) and Bobilin (1988) write that Thai royalty accepted Buddhism because they thought it could be used as an ideological tool for the spiritual control of animist Thais. Sulak and Bobilin also write that Thai rulers used the concept of *dhammaraja*, or "divine kingship" to justify centralized control in Thailand. Dhammaraja refers to an extraordinary amount of good karma that allows a soul the opportunity to be born as a king. Therefore, any person becoming ruler of Thai deserved to be ruler because his karma allowed it to manifest in this way.

When colonial forces invaded Asia and Southeast Asia between the 1700s and late 1800s, they brought with them missionaries who strove to replace Buddhism with Christianity (Pu-chu, 1960). Although Christian missionaries tried to end the practice of Buddhism in the East, Thailand was relatively unaffected because of King Mongkut's shrewd dealings with Britain. Although Thailand may have opted for a self-imposed colonial stance economically, it was allowed religious freedom in that the Thai government controlled religion, not a foreign government. As mentioned briefly in Chapter I, the Thai government tightened its control and centralization of Buddhism to strengthen the nation against

attacks from colonial powers, not necessarily to benefit its people, but rather to unify the people against the common threat of colonization (Apichai, 2000; Darlington, 2000).

Modern Environmental Buddhism

This section focuses on modern Thai environmental activism by Thai scholars and monks. Monks were important figures in Thai society since the acceptance of Buddhism by the royalty. Missionary monks were sent all over the country to convert rural peasants from animism to Buddhism in an early effort to centralize control. Monasteries served as schools and hospitals, where men could learn how to read and write Pali to further their understanding of Buddhism. Although little is known of whether or not rural people resisted their religious conversion, it is unlikely that they did, as Buddhism and animism are quite fundamentally compatible and complimentary (Darlington, 1990). As time passed, monks came to be highly respected and integral to village life (Apichai, 1992). However, since the signing of the Bowring Treaty, government control of monks has been increasing. Each time the government felt a threat of disunity, particularly in 1906, 1932, 1941, and 1962, it has written laws into effect that have brought monks under closer and closer scrutiny of the government's Ministry of Religious Affairs (Darlington, 2000).

The emergence of modern Buddhist environmentalism began in the 1970's during a period of political and economic upheaval. As described in Chapter I, since the 1950's Thailand's agricultural and technological export economy had been growing extremely quickly. In the 70's, the negative environmental and social effects of this trend began to surface (Darlingtion, 2000; J.L. Taylor, 1993). Development without planning, political corruption, and rapid centralization of natural resources (particularly water and timber), led to a sudden fall in the quality of life in both urban and rural areas (Apichai, 1992; Lohmann, 1995a).

In this political and social turmoil, provincial monks who worked to fulfill both the material and spiritual needs of local Thais began to take action against companies and government policies which directly affected the environmental quality of the people's villages (Mayer, 1996). Monks took action because they were experiencing the effects of consumerism and dependence on outside forces of agricultural people first-hand. These monks saw the quality of life of rural Thais diminishing and believed that they could manage local development more sensitively and effectively than the central government (Apichai, 1992; Darlingtion, 2000, 1990; Mayer, 1996; Sulak, 2000c).

These Buddhist-centered groups and projects have been actively denounced and repeatedly threatened by the upper echelons of the Thai government's Department of Religious Affairs as well as the Thai

government. They have been threatened in this way for their refusal to incorporate the tenets of capitalism and consumerism into their Buddhist philosophy (Sulak, 1988a; Taylor, 1997). Monks who wish to remain officially recognized as monks by the government or the king must not risk receiving these types of threats. Therefore, many monks work slowly and subtly, doing their best to help people and resist the system, but in as quiet and non-obtrusive of a way as possible.

As Darlington (2000) writes, the Thai government did not just endorse and support profit-oriented industrial farming in Thailand, it also attempted to modify Buddhist practice to better suit an industrial economy. Field Marshall Sarit tightened control of the Buddhist Sangha under the last Sangha Act in 1962 in an attempt to control the minds and actions of the Thai people so they would support economic liberalization. Sarit sent monks out into rural areas to do much needed social work as well as teach remote villagers about how Buddhism unifies the Thais as a nation. This move was intended to increase patriotism and show people that what was good for Bangkok was also good for rural areas. These monks were also told to stop people from thinking about Communism as a viable option (Darlington, 2000).

Most important of Sarit's decrees was the decision to stop Thai monks from teaching lay people about non-materialism, or *santutthi*. In Buddhism, attachment to worldly things prevents enlightenment.

However, the law no longer allowed monks to teach this fundamental tenet of Buddhism (Pipob, 2000). Today, Thai Buddhists rarely think of materialism as a hindrance to their enlightenment. In fact, few believe in the possibility of spiritual enlightenment or even personal control of destiny (Sulak, 1988b; Sponsel & Natadecha-Sponsel, 1997).

According to Somboon (1982) there are two kinds of Buddhist activism in Thailand. One is in the wholly political realm, where politicians and bureaucrats who work in the Department of Religious Affairs decide what policies monks all over the country should espouse. This kind of activism usually focuses around economic or status issues that are of a personal interest to politically powerful individuals. The other kind of Thai Buddhist activism is in the grass-roots realm, where communities of monks decide (often against government policy, but not necessarily openly) to act on social and environmental issues that affect their local communities (Sulak, 1988a). Phra Dhammadilok of FEDRA most certainly belongs in this second category, even though he is a well-recognized and respected part of the governmentalized Sangha (Darlington, 2000).

Many Thai Buddhist organizations other than FEDRA work for environmental awareness, preservation, and reconstruction. DhammaNet is a non-government Buddhist organization founded by a Thai monk, Ajarn Pongsak, which aims to reforest the watersheds of Mai

Sai province in Northern Thailand. DhammaNet employees and volunteers plant trees, collect and plant fruit and nut seeds that attract beneficial wildlife, and to educate local people about the importance of watersheds for sustainable and organic farming. The Thai government is uninterested in creating laws that will stop this destruction, but Ajarn Pongsak says that it is the Thai Buddhist's moral and karmic duty to educate themselves about environmental degradation and restore Thailand's watersheds before the whole country becomes desertified (Porritt, 1992).

Another large Thai Buddhist organization that works for environmental issues outside of the political structure is the Thai Inter-Religious Commission for Development. Founded by Sulak, the commission's goal is to bring all of the religious ideologies of Thailand together under the umbrella of community- and environmentally-focused "small b Buddhism," not the nationalistic, xenophobic "capital B Buddhism" promoted by the Thai government since 1962 (Sulak, 1988b, p. 78).

Wildlife Fund Thailand, as part of its focus on educating the Thai public about human-environment relations, instituted an on-going program called "Buddhism and Nature Conservation" in the late 1980's. This project focuses on combining ancient Buddhist literature, particularly the *Jataka* (stories of the Buddha's previous incarnations),

with modern technological knowledge about the inter-relatedness of all ecosystems. The aim of this program is to use didactic religious stories taught by highly respected local monks to reach the public with an environmental message that it can easily absorb (Chatsumarn, 1990a).

Other Thai environmentalist activities that use a Buddhist philosophy have also been relatively successful. One has been the ordaining of old growth trees along the Lamphun-Chiang Mai road in Chiang Mai province so they can not be cut down by any morally aware Buddhist citizen (Darlington, 1998; Lohmann 1995; Porritt, 1992). Another is the creation of non-government supported agriculture-focused sustainable forest monasteries as a quiet, unobtrusive critique of the state-supported form of Buddhism, such as Wat Suan Mohk in Chaiya, Chompon province (Buddhadasa, 1990; J.L. Taylor, 1993). The Santi Asoke Buddhist sect is yet another well-known non-government organization which encourages Thais to live in self-sufficient environmentally sustainable village communities while practicing Buddhist principles on a daily basis (Heikkila-Horn, 1996).

Theoretical Basis for the Use of Thai Buddhist Philosophy to Solve Modern Agricultural Development Problems

Spiritual value is seen as the central factor controlling economic activities. These in their turn control patterns of technology, and education and culture. The type of technology employed determines the

utilization of natural resources and the state of the environment and ecology.

(Apichai, 1992, p. 105)

This section will be an analysis of Apichai's (1992) Payutto's (1992), and Prawase's (1988) theories of Buddhist agriculture- and environment-focused economics. This section also incorporates the ideas of major activists for Buddhist-focused development policy change in Thailand.

Apichai (2000), Payutto (1992) , and Prawase (1988) believe that Buddhism can be used as a theoretical framework for solving the economic and agricultural problems that are currently occurring in Thailand. Apichai and Payutto write that the introduction of Western economic concepts in Thailand was a fundamental error because Thais do not have the same system of ethics as Western economists. Western economics ignores abstract values, such as emotions, because they are difficult to quantify. However, Payutto writes that this is an error because, "The economic process begins with want, continues with choice, and ends with satisfaction, all of which are functions of the mind" (p. 27). Although Western economics tries to separate emotion and quantifiable fact, they essentially cannot be separated according to Buddhist thought.

Emotions are a powerful factor in economics. One of Apichai's (1992) most important criticisms of Western economics is that the entire

system is based on the assumption that humans are intrinsically greedy and self-serving. It is this greed for material possessions that drives people to compete with each other in an attempt to possess or consume as much as possible. Greed motivates what Western economics calls the "rational" behavior of acting on individual desire to own material goods (p. 67). However, Fukuoka (1978), Buddhadasa (1986), and Payutto (1992) write that extravagant desire is actually the great downfall of the modern world; our desire to consume everything possible will result in our self-destruction.

Western economics also assumes that human beings only experience happiness through consumption of things or the accumulation of wealth that allows them to accumulate things. In its blatant endorsement and encouragement of desire and greed, Western economics goes totally against the Buddhist goal of eliminating suffering by ending desire (Apichai, 1992; Schumacher, 1973). Scholars of Buddhist economics believe that happiness has two forms; one is fleeting and material, another is eternal and spiritual. Humans are naturally born into ignorance, where they experience basic desire as is necessary for physical survival. In this state, they experience unlimited desire for material things. However, as they grow older, gain experience and wisdom, they begin to learn the difference between what brings fleeting happiness and what brings long-term happiness. The longer lasting form

of happiness comes from unselfish desire to manifest only that which is balanced and harmonious. This unselfish desire is called *chanda*. *Chanda* is based on wisdom, and is manifested through desiring only that which is necessary, in recognition that all things exist in a state of give-and-take. With *chanda* in mind, people will learn that nature and humans are not in conflict, but in balance, and must remain as such (Payutto, 1992).

Scholars of Buddhist economics also write that is it more than psychological factors that contribute to agricultural problems. Technology is often cited as a fundamental problem in rural agricultural communities in Thailand. Modern agricultural technology is something that the people did not chose to create for their own specific needs. When farmers adopt technology, they also have to change their way of life to accommodate the technology. Similarly, because the technology is imported, they have little opportunity to shape existing technology or invent new technology that would be better suited for their needs (Apichai, 2000; Nitasmai, 1998).

Apichai (2000) also writes that traditional wisdom should be supplemented with modern knowledge and experience from the outside world, but it should be closely scrutinized before acceptance. Apichai believes that "local wisdom needs to become national enlightenment" (p. 107). This means that the central government must understand that

local wisdom, or Indigenous Technical Knowledge (ITK) is fundamental to the long-term continuation of high standards of living for remote rural areas.

Prawase agrees that the main problem in Thailand today is economics. In the past, Thai people were farming for self-reliance. Their systems were sustainable because it was necessary for the survival of future generations. Rural farmers did not need to import external inputs for their farms because they were simply unnecessary to the farmers' needs. The economic system was localized and based on bartering for goods and services, not cash. Although the farmers' lives may have been difficult at times, they were successful in that villagers had leisure time to be creative with art, study Buddhism, and develop a complex spiritual world-view (Sulak, 1988a).

Prawase (1988) writes that Buddhism was the system of belief that made this self-sufficient rural lifestyle possible because of the Five Pillars of Buddhism. Prawase believes that these Five Pillars can provide many answers to the problems of modern development in Thailand. The first pillar of Buddhism is the development of the mind, spirit, and soul. Developing awareness of these aspects of human existence provides an ethical guideline based on the natural laws of the universe. The most important thing that the natural laws teach us is that all things in the universe are inter-related and nothing can be viewed in isolation.

Therefore, the effects of an individual's actions will always need to be considered and reconsidered before the action is completed. This kind of thinking leads to a great deal of consideration for others and the environment when practicing sustainable agriculture.

The second pillar of Buddhism, according to Prawase, is producing only enough to satisfy one's own basic needs. This means producing for self-sufficiency and freedom from outside forces or inputs. Buddhism stressed an approach of moderation in every possible situation. Moderation in production and consumption are in accord with Buddhist thought, as extravagance of any kind is essentially imbalance. Imbalance leads to further discord and eventually disease and destruction (Buddhadāsa, 1976).

The third pillar of Buddhism in Prawase's interpretation is natural environmental balance through self-discipline. This is an important factor in sustainable agriculture, as farmers cannot forget their original goal is to produce healthy food for their families and local communities, not to take advantage of the environment or other people for short-term personal gain. The Western concept of happiness being achievable through the short-term gain in wealth that involves taking advantage of others also causes the social disintegration of the traditional Thai village. When families split apart, as they often do when villagers lose their farmland and become wage laborers, the family's spiritual values are

replaced by capitalist values. Rural people send their children to urban schools for a better education, the children come back with urban ideas of development, and not necessarily ones that are conducive with the values and ethics of rural people. Traditional values of balance with the environment and community become seen as backwards and impractical (Apichai, 1992).

The Buddhist ideal of non-materialism also guides people to remain moderate in their needs to achieve balance with the universe. Apichai (1992) writes that these farmers also knew that it is important to maintain environmental balance with forest areas because as Buddhism teaches, all things are interrelated and to destroy the forest is to ultimately destroy yourself. This is literally true in Thailand, as the forest supplies water, food, and clean air. Apichai also writes that rural sustainable agriculture and Buddhism are well suited for each other because of Buddhism's prescription for residing in natural settings. Living and farming in a natural setting is thought to help balance the mind and soul and to develop compassion within the spirit.

Prawase's (1988) fourth pillar of Buddhism is economic self-reliance. Economic self-reliance is achievable by any community that can follow the rules laid out by the first through third pillars; all needs of the community can be satisfied within the community. Apichai (1992) also discusses how Buddhist ethics played a fundamental role in sustaining

healthy rural Thai communities before Thailand was caught up in the global market. There are three main factors that sustain a village's good standard of living. The first is a village-based local economy that focuses on self-sufficiency in agriculture and utilitarian crafts. The second is communal maintenance and use of common property, particularly wild forests. The third factor is family kinship and a cultural tradition that discourages individualism and encourages communalism. Buddhism is a key part of that communal cultural tradition.

According to Apichai, self-reliance and sustainability in agriculture accord directly with the pre-industrial development Buddhist culture of Thailand. Farmers working for self-sufficiency have little use for greed or desire; they produce what they need to enjoy an adequate standard of living. Farmers (or any others) who understand the Buddhist concept of the elimination of suffering through the cessation of desire will come to realize and understand that happiness comes from the quality of life experienced, not the quantity of goods accumulated. Payutto (1992) supports this idea when he writes that Buddhist economics focuses of moderation, as espoused by the Buddha in the Middle Way. The Middle Way stresses moderation in all things, and "moderation means knowing the optimum amount, how much is 'just right'" (p. 69). Payutto sees this concept as directly opposite to the Western classical economist's assumption that maximum consumption leads to maximum satisfaction.

Rather, a focus on wise and moderate consumption for well-being, not luxurious over-indulgence of greed, is the goal of the Buddhist economist.

Community and social factors are also essential to the workings of Buddhist economics. Prawase's (1988) interpretation of the fifth pillar of Buddhism, community unity, focuses on the importance of close kinship and communal bonds between members of villages in rural areas. Some critics of Buddhism argue that Buddhism as a religion teaches focus on the self and, ironically, a selfish focus on personal enlightenment. However, Buddhadasa (1976), Sulak (2000c), and others argue that Buddhism's goal in regards to the self is the initial break-down and elimination of the individual ego so the individual can thereafter serve society with truly selfless compassion, loving kindness, and pure goodwill. Buddhism as a philosophy, according to these modern scholars, can improve society to make life materially comfortable enough for people to understand and follow the precepts of Buddhism, thus making the continuation of the cycle of self-sufficiency and sustainability possible and morally positive.

Summary

This chapter has described the history, theory, and criticism of environmental Buddhism. The history of the overall spread and

adaptations of Buddhism allows us to see what aspects of Buddhism have become emphasized for different social and political needs. The ethical basis for environmental Buddhism has been shown to be derived from parts of the Buddhist *Tipitaka* and other popularly read didactic Buddhist texts, such as the *Jataka* and *Jatakamala*.

This section also discussed modern criticisms of environmental Buddhism. Some of the most popular criticisms of environmental Buddhism include arguing that Buddhism is an inwardly focused philosophy and that it is not really Buddhism per se that is environmental. Other criticisms include those that argue the pre-Buddhist animist type religions that came before Buddhism are the major influences in either anti-environmental or pro-environmental stances that Buddhist teachings seem to endorse.

The second part of this chapter described modern Thai Buddhist theory relating Buddhist economics and the interdependence of Buddhism and sustainable agriculture in traditional Thai society. These scholars write that Buddhist environmental ethics are responsible for and supportive of sustainable agriculture because it calls for ethics of non-materialism, community unity, and selfless devotion to the betterment of the environment and society. These scholars, however, focus on the ideals of Buddhism rather than the ways in which Buddhism is practiced on an everyday basis. Their idealism must be

noted in this study that discusses the reification of Buddhist ethics in sustainable agricultural development; although these scholars write that a return to a traditional way of life where Buddhist ethics determined community action, it is questionable as to whether or not this traditional society existed because of Thailand's diversity of belief systems.

In summary, this section illustrates how Buddhism's main concepts and ideal prescriptions for human behavior can be effectively interpreted as a solid ethical base for an environmentally safe and culturally viable lifestyle. For this reason, Buddhism is an excellent philosophy or framework for creating environmental consciousness. Buddhism's ability to force the practitioner to ask ethical questions of him or herself makes a responsible and pro-active stance towards environmental issues. The following chapter will explore how Phra Dhammadilok of FEDRA in Mae Rim, Chiang Mai, Thailand chooses relevant environmentally focused aspects of Buddhism and successfully applies them to his rural sustainable agriculture promotion projects.

CHAPTER IV

FEDRA'S PHILOSOPHY OF RURAL DEVELOPMENT

This chapter has three main sections. First, it describes FEDRA's background, main objectives, and programs. Second, it describes Phra Dhammadilok's philosophy of development with an emphasis on social-environmental responsibilities. Third, this section compares Phra Dhammadilok's ideas to other major social-economic-environmental Buddhist scholars such as Buddhadasa, Apichai, and Sulak to find connections between their theories. These connections can be used as building blocks for FEDRA's upcoming educational project as well as future studies of Buddhist environmentalism.

Background of Phra Dhammadilok

FEDRA was founded in 2517 by Phra Dhammadilok (Chan Gooslo), who at that time, was named Phra Thepkavi. Most of Phra Dhammadilok's patrons call him Luang Paw, or "Great Father" as a sign of respect and affection (Darlington, 1990). Phra Dhammadilok was ordained at the age of fifteen, and worked in a number of religious social service programs with other monks until 1959. In 1959, Phra Dhammadilok founded a boarding school, *Metta Seuksa*, for poor rural

boys in Northern Thailand whose families could not afford to send them to school beyond the primary level. He founded this school because he saw that rural Thais were at a disadvantage in terms of education because there were few good schools in rural areas. However, he soon discovered that the success of the school was taking the best and brightest students out of the rural areas and only educating them for urban jobs, not bringing them back to their homes where their help was most needed (Vanpen, 1989). His experience with this school led Phra Dhammadilok to seek new ways to help the rural poor.

History of FEDRA

Phra Dhammadilok decided to create FEDRA as an NGO that would work to improve the quality of life of rural people in rural areas instead of bringing them to urban centers. Phra Dhammadilok hoped that this approach would prevent urban migration and rural brain drain in Northern Thailand by giving people something worth staying for in rural areas. FEDRA officially began operation in 1974. Ironically, from 1974 until 1978, FEDRA was located at *Wat Chedi Luang*, Chiang Mai city's central urban temple. In 1978, Phra Dhammadilok asked to be assigned abbot to *Wat Pa* (literally, "Forest Temple") *Daraphirom*, a rural temple in Mae Rim district, twelve kilometers outside of Chiang Mai city (Darlington, 1990). Phra Dhammadilok made this career change so he

could move FEDRA to a more appropriate rural location (Vanpen, 1989). A recent promotion of Phra Dhammadilok to head abbot for all of the Buddhist temples in Northern Thailand has moved him back to Wat Chedi Luang. However, he still closely oversees the workings of FEDRA on a weekly basis even though he is now 83 years old (FEDRA, 2000a).

FEDRA's goal at the time of its creation was to develop rural areas to suit local peoples' needs. Phra Dhammadilok saw the economic policies of the 1960's and 1970's as contrary to rural peoples' needs, as rural agricultural areas and their populations were becoming subservient to the industrial resource use needs of huge urban populations. Uneven development of urban areas drained water, wood, food crops, scarce government funding, and educated people from rural areas. This uneven development that favored urban areas left the Thai countryside in a crisis situation (Apichai, 1992; Darlington, 1998). Many people were forced to sell their land and migrate into the cities to work as general laborers or move to other areas to take low-wage seasonal wage labor on industrial farms (Apichai, 1992; Sulak, 1988a). Phra Dhammadilok understood that rural people could not become interested in internalizing Buddhist ethics if they were hungry or suffering, as the Buddha taught that lack of material needs is a hindrance to spiritual enlightenment (Darlington, 1992; Payutto, 1992). From this idea, Phra Dhammadilok sought to help

the people to help themselves so they could become empowered by Buddhist ethics.

Phra Dhammadilok wanted to give rural people the opportunity to develop themselves at the riceroots level. By facilitating riceroots development, the people could face urban demands as a unified community. To unify the rural community, Phra Dhammadilok focuses on training rural people in agricultural methods and management that will lead to rural self-sufficiency, with a secondary focus on teaching people how to diversify their job skills to remain flexible in a capitalist economy. This means FEDRA supports training in agricultural techniques, finances, land management, and agricultural knowledge dissemination. FEDRA also supports many entrepreneurial experiments to develop and examine the feasibility of home industries such as food processing and utilitarian craft making (Vanpen, 1989).

FEDRA also works to facilitate local community unity. To foster community unity, Phra Dhammadilok set up all of the programs within FEDRA as co-operatives (FEDRA, 2000a). These co-operatives encourage rural people to work together in groups and networks to achieve community solidarity and a good standard of living. Co-operatives set up by FEDRA are intended to give rural people the tools they need for grassroots development as they see fit, not as dictated by FEDRA or any other outside agency.

FEDRA has four explicit principle objectives that are always adhered to in their choices for development projects. FEDRA's first and most important principle objective is to promote agriculture. More specifically, this means agriculture that is appropriate to local conditions as well as structures that support appropriate agriculture. FEDRA facilitates co-operative forming trainings, networks; agricultural method training seminars; and homemade tool making trainings (Vanpen, 1988). Other programs are regularly available according to the villagers' requests (FEDRA, 2000a).

FEDRA's second principle objective is to promote education. This does not necessarily mean formal education, but rather refers to agricultural training and knowledge that can be spread laterally as opposed to vertically. Thus, FEDRA focuses on providing or facilitating practical and appropriate training for any agricultural process, technique, or theory that co-operative members are interested in learning about. Co-operative members also formally agree to personally share any knowledge they gain during trainings with their neighbors and any other interested rural people (Vanpen, 1989). Similarly, FEDRA encourages governmental non-formal education when possible. Many of FEDRA's employees are graduates of the non-formal education system (FEDRA, 2000a). Education also means the development of wisdom, knowledge that can be applied. Phra Dhammadilok is famous for putting knowledge

into action, not preaching for knowledge simply for the sake of knowledge. Therefore, practical training is of his utmost concern (Phra Thepkavi, 1988).

FEDRA's third principle is to promote Buddhism. This does not mean that FEDRA is trying to convert people to Buddhism, but rather means that FEDRA strives to encourage and support behavior that is condoned by the Buddhist teachings. Phra Dhammadilok designed the rules of FEDRA to make sure that only people who posses the ideal Buddhist qualities of dedication, morality, thrift, and compassion and compatibility can be members in the foundation's co-operatives (Darlington, 1990; Vanpen, 1988). Phra Dhammadilok also meets regularly with co-operative members to discuss or lecture about the ways in which Buddhism is relevant to their agricultural work (Darlington, 1990). However, this promotion of Buddhist ethics may have some yet unexplored problems for the villagers, as is discussed in the following chapter.

The Cow and Buffalo Bank at FEDRA

This section discusses one of FEDRA's sustainable agriculture programs that Phra Dhammadilok has successfully interwoven with Buddhist practice to benefit rural communities. FEDRA's Cow and Buffalo Bank was an idea originally conceived by Phra Dhammadilok in

2521. It is a local legend that when a wealthy man became fatally ill, he decided to save a buffalo that was destined for slaughter and donate it to Phra Dhammadilok as a form of merit-making. When the man's health dramatically improved, the word spread that saving the life of a buffalo could extend the donor's life or extend the life of someone close to the donor according to the laws of karma. This is the same form of merit-making criticized by Sulak in Chapter IV-- the giving of ritualistic, showy donations to the temple made either to impress others to the benefit of the donor's own karma. Phra Dhammadilok does not endorse this kind of merit making, but rather tolerates it because he can find ways to mold this merit-making to the needs of his foundation. The story of the cow and buffalo bank illustrates how Phra Dhammadilok has been able to alter to results of ritualistic merit making into something useful for rural people (Darlington, 1990).

In a short time, Wat Pa Daraphirom was full of buffaloes and cows that had been donated by people hoping to make merit for sick family members. Phra Dhammadilok decided to put these animals to use by lending them to local farmers who could use the animals to plow fields or to breed them for profit. Today, animals destined for the slaughterhouse are no longer given to villagers due to the animals' generally bad health. However, people still continue to donate healthy animals to the Buffalo and Cow Bank as a form of merit making (FEDRA, 2000c).

Phra Dhammadilok has been quoted as saying "People help buffaloes; buffaloes help people" in reference to this project (FEDRA, 2000c, p. 3). This phrase explains the basic philosophy behind the initiation of The Cow and Buffalo Bank. People help the buffaloes by saving them from being slaughtered or guaranteeing the animals a long life on villagers' farms. The person who donates the animal to Phra Dhammadilok at FEDRA receives merit for doing a good deed. In this way, buffaloes not only help the donor by giving merit, but they also help the farmers who use them to work the fields. Many of the farmers who receive the animals would not be able to afford to buy them on their own.

This revitalization of the use of buffaloes for work in rural farms is crucial to sustainable agriculture's success in Thailand. Buffaloes are not dependent on outside fuel or maintenance, as are imported tractors and *kwai lek* ("iron buffalo") roto-tilling equipment. Buffaloes graze in fallow fields and their manure is invaluable as a fertilizer for these fields. These buffaloes can be used to work fields, but they can also be used as an investment; the animals' offspring can be sold to other farmers. Buffaloes therefore increase rural farmers' local autonomy and self-sufficiency, allowing them more freedom in their agricultural practices and community investments (Rifkin, 1985; Schumacher, 1973; Vanpen, 1989).

The cow and buffalo bank is an excellent example of the way Phra Dhammadilok has looked at an agricultural problem (lack of money for maintenance of high-technology equipment) and solved it with an already-existing (albeit ritual) Buddhist activity. Phra Dhammadilok does not believe in radically challenging the government-controlled *Sangha*. Therefore, his unique interpretation of the Buddhist teaching of generosity is possible and accepted by the government and the upper echelons of the *Sangha* because it doesn't make waves but still benefits the independence of rural people in a subtle yet highly beneficial way (Darlington, 2000).

FEDRA's Sustainable Agriculture Co-operative

FEDRA's sustainable agriculture co-operative is the main focus of its rural development program because the rural people who FEDRA serves are all farmers. The co-operative did not actually begin as a program interested specifically in sustainable agriculture. Originally, the program began as a co-operative that helped local farmers finance expensive exports of technology, particularly tractors, heavy processing machinery, and chemical fertilizers and pesticides. At that time, FEDRA worked to support small poor rural farmers in the production of monocrops such as peanuts, cabbage, garlic, *miang* (a native tea variety), and especially soybeans. The focus was not environmental

sustainability, but rather keeping smallholder farmers out of poverty (Vanpen, 1989).

In 1985, FEDRA's farmers' co-operative became a sustainable agriculture co-operative in response to a national economic crisis that increased the cost of imported agricultural products. Local farmers all over Thailand found that they were too dependent on unsustainable practices supported by outside resources, and saw their own choices were converting to sustainable self-sufficient agriculture or selling out to industrial agriculture corporations that could still afford expensive inputs (Vanpen, 1989; Nitasmai, 1998; Prawase, 1988).

FEDRA field workers and Phra Dhammadilok agreed that the solution to the countrywide economic crash could be found in integrated farming. In 1986, FEDRA began a large program to promote agroforestry, highland agriculture, and organic integrated (mixed) cropping methods. Agroforestry is when farmers plant fruit trees or other productive or useful tree varieties nearby or in existing forest. They then also cultivate or encourage the growth of wild or introduced compatible food crops among the trees at differing levels of sunlight and nutrient absorption. Vanpen writes that this choice was also useful in stopping the illegal exploitation and cutting of Thai forest because agroforestry gives forests food value that makes cutting them for agricultural expansion unprofitable (Sawangchai et al., 2000).

Highland agriculture was chosen for areas of marginal land, where modern monocropping methods were either causing severe erosion or simply not working due to poor soil quality. Highland agriculture focuses on using native food plants, carefully managed hill terraces, minimal soil disruption, and continuous soil-enhancing cover cropping. Highland agriculture is especially important because most of northern Thailand's land is not suitable for monocropping or modern agricultural methods (Cohen 1998; Sawangchai et al., 2000).

Integrated farming, however, has been FEDRA's biggest success. Integrated farming programs promoted by FEDRA have included combined fish and rice farming, fish and chicken farming, free-range native pigs, native chickens, and cattle. Integrated farming projects have an organic and native variety focus, where farmers ideally only produce locally popular native edible plants and animals, using green composting, animal manures, and cover crops to maintain soil quality (FEDRA, 2000d; Vanpen, 1989).

Since 1986, FEDRA has also promoted the application of Indigenous Technical Knowledge (ITK) in conjunction with modern, simple appropriate technology in its farming projects (Sawangchai et al, 2000; Vanpen, 1989). FEDRA field workers in charge of the sustainable agriculture program feel that the use of ITK will lead to greater farmer independence. Following will be an overview of FEDRA's proposed 2001-

2003 Indigenous Agriculture Project, which will discuss these ideas more in-depth.

The emphasis on production for self-sufficiency rather than sale has also increased since an increase in oil prices since the mid 1980s that resulted in a jump in import costs. Since 1987, FEDRA has had five explicit goals in its sustainable agriculture program. The first goal is to use local resources for optimal use. This means using local resources that are present and abundant in a sustainable way. An example would be harvesting and encouraging the growth of native edible tree varieties rather than cutting down native trees to plant foreign varieties that need expensive inputs and a large amount of maintenance.

The second explicit goal of FEDRA's sustainable agriculture program is to concentrate on using local technology, human labor, and animal labor. This conscious choice to not use external technologies powered by imported fossil fuels keeps local farmers free from fluctuations of external markets. Using human labor also reduces unemployment and gives local people satisfying work to do. The use of animal labor or small-scale appropriate technology results in less heavy labor for people than they would need to do as individuals, but it also makes the purchase of natural manures for fertilizer unnecessary. Although most farmers would rather relax and enjoy the benefits of

heavy machinery, many recognize that the long-term risks and costs of dependency overshadow the short-term conveniences.

The third goal of the sustainable agriculture program is to avoid all chemical elements, particularly in fertilizers and pesticides that are harmful to humans, animals, natural vegetation, and soil. Small rural Thai farmers tend to not be able to afford high-quality chemicals, and were often buying chemicals that had been outlawed in industrial countries for unacceptably high toxicity levels. Not only were the chemicals poisonous to the farmers who applied them to the fields, their run-off was also killing fish in local streams and poisoning local people who drank or used water from streams for cooking (Sawangchai et al., 2000).

The fourth goal of FEDRA's sustainable agriculture program is to decrease family farm expenses on inputs. However, this does not mean raising the farm family's overall income to make the cost of inputs less significant, but rather to simply focus on production for local consumption and selling surplus, not completely producing for sale. Focusing on local consumption means better health for the local community, as foods that are grown are not only locally appropriate, but suit the tastes and nutritional needs of local people (FEDRA, 2000e; Vanpen, 1988).

The fifth goal is to maintain genetic biodiversity for future farm use. This means the careful breeding of desirable locally adapted livestock and the maintenance of diverse, locally adapted seed varieties in local community-controlled seed banks. This goal of maintaining biodiversity is particularly important in light of Thailand's recent agricultural introduction to GMOs (Genetically Modified Organisms). If rural Thai farmers are to maintain their independence from the global food market, they must not employ seed varieties that are designed to not reproduce or seed varieties that are not suitable for local needs and conditions (FEDRA, 2000e; Vanpen, 1989, p. 97).

Today, FEDRA's sustainable agricultural co-operative strives to teach people how to rely on themselves in the present and the future, and to teach people how to participate in community-based work. The co-operative also serves as a non-profit middleman to get fair market prices for agricultural products. The ultimate goal of the co-operative is to raise the rural standard of living and strengthen small local rural economies to prevent their economic and environmental exploitation (Apichai, 1992; FEDRA, 2000d; Sulak, 1988a).

People who want to become members of FEDRA's agricultural co-operative can apply to be a member by meeting with FEDRA representatives at Wat Pa Daraphirom. Phra Dhammadilok is selective about what kind of people can join the co-operatives. The character

qualities that Phra Dhammadilok looks for in members include diligence, a good reputation, previous involvement in social services, and commitment to community welfare. Phra Dhammadilok looks for co-operative members with these qualities because he wants them to serve as examples to other interested communities: agricultural development is not just about technology, it is also about a certain set of ethics that Buddhism supports (FEDRA, 2000e; Sawangchai et al., 2000).

When personal characters of applying members are satisfactory, they may invest a small amount of money in co-operative stocks. Members' stocks are used to buy tools and farm inputs for community use, to transport products to market, to maintain co-operative stores and weekly markets, and to support low-interest loans for members (FEDRA, 2000d).

FEDRA's 2001-2003 Indigenous Sustainable Agriculture Program

The 2001-2003 Indigenous Sustainable Agriculture Program is one of FEDRA's most ambitious project proposals. The total project will cost over four million Thai baht and will involve hundreds of local farmers as researchers and local and national agriculture experts. This section will briefly outline the project and its goals for sustainability in the regions FEDRA that serves.

Sawangchai et al. (2000) write that a serious re-analysis of the usefulness of Indigenous Technical Knowledge (ITK) in the northern Thai region is necessary for agriculture in northern Thailand to be truly sustainable. The re-establishment of traditional ways of farming are essential because the terrain of northern Thailand simply cannot support modern industrial agriculture, and even some forms of modern sustainable agriculture, in a way appropriate to local social and environmental needs. Therefore, this project will allow local farmers to choose from a variety of indigenous agriculture and sustainable agriculture methods to apply on their own farms. Methods will be taught at FEDRA's newly acquired research station, a dry, marginal piece of land in Mae Rim that represents some of the worst conditions for modern industrial farming. This site was chosen because it represents a worst-case scenario, where if an experimental technique succeeds there, it will more than likely succeed just about anywhere else. Farmers will be able to choose from free-range native pig, chicken, and fish-in-ricefield farming, raising different types of non-irrigated mountain rice varieties, cultivation and processing of wild medicinal plants, and many various experimental types of crop planting, such as those outlined by Fukuoka (1978).

This project not only strives to learn what aspects of traditional Thai farming work best on the marginal lands of northern Thailand, it

also strives to re-awaken local interest in traditional knowledge. Sawangchai et al. (2000) write that not only will this project work to create greater self-sufficiency through developing easier more environmentally appropriate farming methods, it will also show local rural people that they can depend on their own culture and their own ideas instead of trying to find solutions to their problems in the very Western economic theories that exacerbated many of their problems with agriculture in the first place.

The Buddhist Socio-Environmental Philosophies of Phra Dhammadilok and FEDRA

From the above description of FEDRA's programs, it would appear that Phra Dhammadilok would have a concrete environmental philosophy, or may have at least developed one since the mid-1980s. However, he does not. His philosophy is centered on human action and trusts that right human action will eventually lead to balance in all other aspects of life. However, this emphasis on human action is also the central argument of other activists and scholars of Buddhist environmental action-- saving the environment begins with individual action, followed by village action, resulting in community harmony with the local environment (Buddhadāsa, 1986; Darlington, 1990).

Vanpen (1988) writes that FEDRA's stated goals within its principle goal of promoting the Buddhist religion include the development of four important behaviors. Phra Dhammadilok teaches rural people that productive work is a result of behavior that is based on ethics of human morality of Buddhism. These behaviors which Phra Dhammadilok encourages include thrift or frugality, honesty or "doing good," and local unity or co-operation with others (Vanpen, 1988, p. 82). Phra Dhammadilok meets with members of FEDRA's agricultural co-operative programs regularly and encourages them to use these simple guidelines for personal and community success (Darlington, 1992; FEDRA, 2000e; Vanpen, 1988).

Phra Dhammadilok's espousal of thrift and frugality has sometimes been interpreted as a deliberate, conscious step to eliminate greed. Greed is a frequent topic in many of Phra Dhammadilok's sermons and much-quoted adages. A popular saying of Phra Dhammadilok's that sums up this idea is, "Contentedness makes one a millionaire in a beggar's hut; Greed makes one a beggar in a millionaire's house" (Phra Thepkavi 1988, p. 17). Here, it can be seen that Phra Dhammadilok believes that satisfaction and quality of life does not come from material wealth, but rather personal satisfaction with work well done.

Other Buddhist scholar-activists as well as Western development workers agree that greed is the central problem of today's environmental problems. Indeed, Apichai (1992), as mentioned in Chapter III, writes that greed is the central factor driving the Western-style economics that has brought Thailand into its current state of environmental disaster. Schumacher (1973) and Wheeler (1993) also reflect this sentiment when they question the valuation of the so-called rational pursuit of material wealth as the solution to the problem of human suffering, as cited in Chapter I.

"Doing good," or right behavior, refers to two of the steps of the eight-fold path, where right behavior and right livelihood help the individual to develop the self while also choosing to benefit society through useful non-exploitive work. The economic philosophy behind FEDRA's form of development also supports the concept of right action. This philosophy is one of balancing the old ideas of community self-reliance and traditional respect of religion and community with the new ideas of improved appropriate technology and useful scientific advances. Phra Dhammadilok is famous for summing up this unique Buddhist approach to development when he writes that, "The human spirit and the economy must be developed at the same time. One without the other is useless" (Darlington, 1990; FEDRA, 2000a, p. 12; Vanpen, 1989). Other scholars, both Thai and Western have echoed this thought. Schumacher

(1973) points out that technological development takes humanity nowhere without human happiness and spiritual enlightenment. Similarly, Apichai (2000) and Sulak (2000c) write that technology must serve the needs of humans rather than humans serving the needs of humanity; the key to putting humans first is a system of ethics that does just that.

Finally, local unity is perhaps the most important aspect of Phra Dhammadilok's sustainable agriculture work. One of FEDRA's promotional booklets about their co-operative program starts with the following observation from Phra Dhammadilok:

> 'Co-operative' means a kind of work that is co-operative. People must always work together, in every aspect of their lives. We use our spirit, mind, and body to work. We recognize that all things are inter-related, and we use this philosophy in everything we do. (2000d, p. 1)

This quote emphasizes interrelationship between all things. It also emphasizes that co-operation is not only natural, it is also essential to success. Phra Dhammadilok uses this idea in the sustainable agriculture co-operative to show people that socially they must work together, but also that they are part of the inter-connected environment and must also work with the environment to achieve balance physically and spiritually. The Buddhist concept of cause and effect as well as the idea of the Jeweled Net of Indra also endorse this reality. All things must work together, must be mutually supportive, for balance and harmony to

occur (Buddhadasa, 1986; Snider, 2000). Similarly, as Prawase (1988) and Apichai (2000) have also written, community unity is fundamental for the survival of rural self-sufficient communities. Buddhism, they write, solidifies community unity with its communal ethics of interdependence and generosity and in turn makes long-term internalized economic self-sufficiency possible.

However, I as well as Darlington (1992) and Vanpen (1989) question the actual reasons why farmers choose to participate in FEDRA's programs rather than the other number of excellent sustainable development programs in Northern Thailand. I believe that it is a mixture of pragmatism and idealism that brings people to FEDRA's programs. Thai farmers are pragmatic in their needs for sustainable solutions in farming, but they are also excited by the idea that they can be associated with Phra Dhammadilok, a famous and popular monk. Although the farmers are excited to be a part of what they see as a unique organization, they also fear radical change in the way they go about their farming. However, similar secular organizations have been more successful with converting to more radical farming methods than FEDRA has. I believe that part of what prevents farmers from making radical changes is that it is not necessary for them for their survival. They feel that they can rely on FEDRA for assistance at all times, and therefore do not have a strong desire to succeed on their own. I am not

suggesting that FEDRA cut these farmers out of their programs, but rather that this is an issue that needs further study.

Another possible imitation in FEDRA's work is its board of directors. Although Phra Dhammadilok is the official head of FEDRA, his choices are overseen and directed by a board of directors composed of local and urban elites. These individuals are reluctant to try radical approaches to development for fear of the social stigma of being labeled a radical or a communist. They also use their higher social status to control the direction of the NGO's work and keep it out of the hands of the younger, more idealistic field workers at FEDRA. The board of directors as well as Phra Dhammadilok are also reluctant to end unsuccessful programs, fire unproductive or disruptive employees of FEDRA, or give administrative power and technical assistance to inexperienced yet more directly involved FEDRA employees. In fact, as both Darlington (1992) and I have seen, FEDRA's younger, idealistic, and energetic employees are underpaid and overworked. This situation leads to the better employees leaving the organization to find better recognition and higher salaries in other organizations or fields. This situation does not appear to be unique, however, as Chambers (1998) has also noted this problem of NGO workers in developing countries rarely make salaries that match their level of effort.

Summary

This chapter has described the agricultural programs of FEDRA as well as the philosophical underpinnings of Phra Dhammadilok that support FEDRA's actions. It explains that although Phra Dhammadilok works for agricultural sustainability, the main reason for this is not to save the environment, but to save rural people from poverty and exploitation. Saving the people, Phra Dhammadilok and FEDRA staff believe, will eventually result in saving the environment; the fates of the people and the environment they live in are inextricably intertwined.

This chapter has also shown that Phra Dhammadilok's approach to development is similar to approaches promoted by more radical activists like Sulak and Buddhadasa, yet Phra Dhammadilok remains a well-respected and rarely challenged member of the highest ranks of monks in the government-controlled *Sangha*. This has both advantages and disadvantages. Phra Dhammadilok enjoys relative freedom from criticism by enacting his policies in small increments, at the local level, and in ways that do not threaten the dominant idea of what Thai Buddhism ought to be. However, Phra Dhammadilok cannot associate with people like Sulak or other radical monks, or even talk about their actions in a positive way or use them as examples, or he will be criticized and barred from further advancement within the *Sangha*. FEDRA

pamphlets even explicitly state that FEDRA does not wish to be politically involved and that the actions of Phra Dhammadilok and the members of FEDRA's co-operatives are not interested in altering the structure of the Thai government or its economic policies. Ironically, then, Phra Dhammadilok's power to make radical changes at the local level lies in his ability to appear conservative by governmental standards, but apply radical ideas in the field under the guise of teaching the precepts for self-development, not radical changes in the social structure of rural northern Thailand.

This chapter also discusses my own personal criticisms of FEDRA after having worked in an observed the NGO during the winter of 2000. FEDRA's internal problems seem to be typical of NGOs anywhere, and particularly NGOs in Thailand. The board of directors seems unavoidable, as FEDRA would not be able to achieve its high status without a number of higher status people backing it up socially. However, I have yet to decide if FEDRA's lax approach to cutting unproductive programs or firing disruptive employees is good or bad. This practice of letting things slide sometimes seems very Buddhist to me, in its compassionate and noble acceptance of human weakness.

The following chapter, the conclusion of this thesis, discusses some questions that have come up during the analysis of FEDRA's

approach to sustainable agriculture as well as ideas for further study of Buddhist environmental ethics in sustainable agriculture development.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER STUDY

The aim of this research was to illustrate and support the connections between the ethics of sustainable agriculture and Buddhist environmental ethics in Thailand. Chapter II demonstrates the metaphysical assumptions about the nature of reality of industrialized agriculture, and how the Green Revolution and the general expansion of free market economics exported these assumptions to Thailand. Chapter II also illustrates how sustainable agriculture is based on a different set of ethics, and questions the assumptions of industrialized agriculture. Chapter III is an in-depth study of Buddhist environmental ethics as they are interpreted from Buddhist texts as well as an analysis of Buddhist scholar's works on the possibilities of a system of Buddhist economics that would support sustainable agriculture in Thailand. Chapter IV describes the philosophy and practice of one Buddhist NGO founded by a famous Buddhist development monk and explored the meaning and applicability of his philosophies. This final chapter, the conclusion, brings up new questions and possibilities for the study of Buddhist environmental ethics in sustainable agricultural development.

The role of ethics and religion in sustainable agriculture has been a constant source of thought-provoking writing by many scholars of environmental issues. Apichai (1992), Dewitt (1992), Jackson (1980), Schumacher (1973), Sulak (2000c), and all argue that religion and the ethics that support religion are essential to the implementation of sustainable agriculture. Most scholars of Buddhist environmentalism agree that any religion, when thoroughly examined, puts human beings in the role of stewards to the environment, not masters of it.

However, some scholars believe that traditional religious approaches to environmental stewardship are not going to solve today's massive environmental problems. Proponents of deep ecology argue that a whole new worldview is necessary before environmental healing can begin. Naess (1973) first coined the term "Deep Ecology." deep ecology stands in contrast to shallow ecology, which environmentalists in industrialized nations support. The shallow ecology movement is more popular, and focuses on preventing pollution from hurting people in industrialized countries, but still allows pollution to occur elsewhere. However, deep ecology is less popular because it emphasizes the necessity of a radical paradigm shift from humans as masters of their environment to humans as a part of the environment. The shift in paradigms is metaphysical-- people must radically change the way they

think about the human place in the world to prevent environmental degradation from occurring in the first place.

Some scholars and critics of Buddhist environmental ethics argue that using Buddhism as a model for sustainable development is just another way that deep ecologists can show modern society that its religious bases are wrong and need to be thrown away in favor of a new paradigm. Kraft (1994) writes that because environmental Buddhism is a marginal and often misunderstood concept in the West, it might be best to not to promote it as a religious philosophy, but rather try to communicate the core Buddhist concept of inter-relatedness of all beings and actions without framing them as any specific ideology or religion. Spretnak (1986) clarifies this point well when she writes that not necessarily "deep ecology" or "dharma Gaia" or "Buddhism," but rather some sort of "a 'spiritual infrastructure' is essential for a successful transformation of our society" (p.73). This quest for a better definition of the core values underlying Buddhism's environmental messages will be a major challenge for scholars and practitioners of Buddhism in the future.

However, the value of environmental interpretations of Buddhism's philosophy as a model for development ethics in sustainable agriculture cannot be denied. The analysis of Buddhist environmental ethics in Thailand is particularly relevant and useful to the study of ethics in sustainable agricultural development because the vast majority of Thai

people consider themselves Buddhists and most see the Buddhist philosophy as their ideal ethical base, regardless of whether or not they themselves follow all the precepts. However, it seems to me that a radical shift back to completely traditional decentralized agricultural communities is not feasible or even desirable for local rural populations in Thailand. A middle ground of appropriate mid-sized agriculture and agricultural product distribution is necessary, rather than a radical return to an ideal that perhaps never truly existed. Thais might be more receptive of an idea which truly blends traditional knowledge and modern knowledge to create a real Middle Way. The best choice, as Chambers (1998) and Kampe (1997) have noted, is to let the people decide for themselves which sort of path they would like to forge.

Implications for Further Study

Many questions remain yet unanswered in the study of Buddhist ethics in sustainable agriculture. One of the most intriguing questions remaining is how effective is Buddhism in areas where Buddhism is not truly the dominant religion? This question was posed by Darlington (1990), but has yet to be answered. The dominant religion in Northern Thailand is, contrary to what the government or what local people profess, a mixture of animism, ancestor worship, and Buddhism. It would be interesting to see if environmental development projects

working for sustainable agriculture could employ animism as their operational philosophy and see how their results differed from organizations that use Buddhism. However, some scholars, including Darlington (1992) and Sulak (2000a) write that animism and Buddhism are essentially mutually supportive in terms of environmental ethics, so little difference could be observed. Nonetheless, rural Thais are unlikely to admit their varying degrees of attachment to spirit worship, while monks like Phra Dhammadilok subtly attempt to discourage animism among the villagers (Darlington, 1992; Phra Thepkavi, 1988).

Another important question that has not yet been answered in this research or in any other research to date is for what reasons do people in Northern Thailand participate in and go along with Buddhist environmental development projects if they really do not wholeheartedly believe in Buddhism? Welchmann (1999) writes that even the best of ethics cannot be forced on people, they have to be internalized by choice, over time. Are the ethics of Phra Dhammadilok's interpretation of Buddhism being forced on rural villagers in Northern Thailand? Or are the rural people accepting these ethics, but have not had the proper time and education to be able to fully internalize them? In effect, is Phra Dhammadilok's philosophy a subtle form of proselytizing? How do rural people feel about others trying to convert them to another religion?

Another issue that has become quite clear in this research is that how close to its ideal are FEDRA's goals of riceroots development? Northern Thai villagers did not form FEDRA by their own initiative. Similarly, Northern Thais are not necessarily strict Buddhists. Would the programs that FEDRA runs to support co-operative networks of farmers throughout Northern Thailand exist without FEDRA? Some believe that without FEDRA's support and blessings, these networks would fall apart. Indeed, as FEDRA project managers encourage village co-operative members to break ties with FEDRA and manage their co-operatives independently, villagers complain that they could not survive without FEDRA.

Another important criticism of FEDRA's approach to development is, as Darlington (1990) writes, Buddhism focuses on the individual while Northern Thai custom focuses on social groups, so how can a Buddhist model be appropriate for developing this region? However, as mentioned previously in Chapter III, Buddhism's goal is not to separate the individual from society, but rather to educate the individual about the nature of the self as part of an interconnected whole. This education or enlightenment serves to allow the individual person to serve society and the whole universe with compassionate love. Nonetheless, the prevalent idea that Buddhism is a religion of individualism as well as Phra

Dhammadilok's strong focus on self-responsibility could possibly be an obstacle to the success of his sustainable agricultural programs.

Yet another extremely important question that these research has not even attempted to answer is how effective can a Buddhist approach to environmentally safe living be in a world dominated by a free market economy? The metaphysics of industrialism and the free market economy are discussed in both Chapters II and III. The underlying ethics of this economic system teach humans the exact opposite values that religions like Buddhism are trying to cultivate. How can Buddhism, which focuses on the recognition of suffering and the cessation of materialistic desire, compete with a system that focuses on the satisfaction of materialistic desire? Buddhism recognizes that humans are born ignorant and greedy, and must develop their minds to find wisdom and then end their desire for useless possessions. Consumerism avoids the development of wisdom by allowing humans to remain childlike in their never-ending collection of possessions.

Apichai (1992) speaks of the possibility of using local environmental knowledge to benefit the Thai nation, and that "local wisdom must become national enlightenment" (p. 107). However, the question remains, could this be interpreted as saying that local wisdom can be "scaled up" to become national policy? What makes local wisdom precious is that it is local. Progressive development workers today argue

against scaling-up and enlargement of local systems because they simply can not be made larger; they are only adapted to their local conditions (Chambers, 1998). Similarly, could Buddhist environmental ethics in sustainable agriculture be scaled-up to a global level and endorsed as a new way to interact with the earth for all people?

Similar to the previous question, will Buddhist activists who aim to spread Buddhist approaches to the environment lose sight of the original aims of Buddhism and turn their quest for global environmental regeneration into an ideological war, where non-Buddhists would be seen as inferior or threatening? Perhaps Thai Muslims, Thailand's largest religious minority, could help researchers interested in this topic shed some light on the potential impact of this type of thinking. Supporters of deep ecology believe this transformation is possible and may actually be necessary. However, it may be more likely that fresh interpretations of the environmental ethics of all cultures are needed. There is no one true way to reach balance with the environment. Every major religion offers its own system of ethics for dealing with the environment. Those ways of thinking grew out of the environment that created those religions, and are therefore useful to their local practitioners. Buddhism only teaches people to find the ways in which they as individuals and communities of individuals can find locally appropriate ways to interact with their environment. This research has

served to further clarify many of these ideas present in modern Buddhist environmentalism. These questions and others are currently being addressed by many scholars of Buddhism in Thailand as well as in the West. Their future research will perhaps bring new insights to this topic, which is just beginning to be earnestly explored.

APPENDIX: GLOSSARY

Ahimsa	Loving compassion, also non-violence
Chanda	unselfish, mature desire for things that are beneficial to a society or community
Deep Ecology	A term coined by Arne Naess in 1973 to describe an ecological movement, which addresses the fundamental ideological and physical causes of environmental degradation and seeks to solve the problem through ideological awareness
Dharma	Nature, the nature of the universe, the ultimate truth
Dukkha	Suffering caused by desire
FEDRA	The Foundation for Education and Development of Rural Areas
GMO	Genetically Modified Organism
HYV	High-Yield Variety, usually rice seed
ITK	Indigenous Technical Knowledge
Merit-making	The Thai ritual of donating money or goods to a temple or monk in the hopes of accumulating positive karma
Monocropping	Planting only one seed variety over a wide area
NGO	Non-government Organization

Phra nakpattana	Thai development monks
Reversals	A development concept used by Robert Chambers (1998) that challenges older ineffective approaches to development by solving development problems by doing the exact opposite of what the older approaches prescribe
Sangha	Thai Buddhist monastic community
Santutthi	the Buddhist teaching of non-materialism
Shallow Ecology	An ecological movement standing in direct contrast to Deep Ecology which only addresses the environmental problems that affect first world nations without questioning underlying causes for environmental degradation
Sutta or sutra	A single lesson, sermon, or teaching of the Buddha
Tripitaka	The collection of all Buddhist texts

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