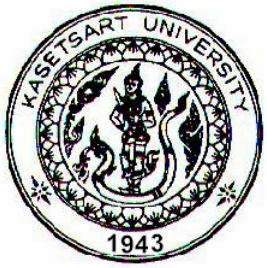

THESIS

ENVIRONMENTAL ETHICS ON COMMUNITY FORESTRY IN BAN THUNG SOONG COMMUNITY, KRABI PROVINCE, THAILAND

MD. MAHBUBUR RAHMAN

A Thesis Submitted in Partial Fulfillment of
the Requirements for the Degree of
Master of Science (Tropical Forestry)
Graduate School, Kasetsart University
2006

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Md. Mahbubur Rahman 2006: Environmental Ethics on Community Forestry in Ban Thung Soong Community, Krabi Province, Thailand. Masters of Science (Tropical Forestry), Major Field: Tropical Forestry, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Damrong Pipatwattanakul, D.Sc. 148 pages.

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The study was conducted primarily to determine the effect of environmental ethics on community forest management in Ban Thung Soong Community, Krabi Province, Thailand. The general objective was to identify the relationship between environmental ethics and community forest management in the community. The specific objectives were (1) to identify how the concept of Environmental Ethics has developed and transmitted in the community, (2) to assess the environmental ethics the community posses, (3) to assess the behavior of the community people toward the community forest, (4) to assess the relationship between ethical beliefs and community behavior toward the forest, and (5) to assess the relationship between community behavior towards the forest and community forest management. The data were gathered by both quantitative and qualitative method. Descriptive and inferential statistics were used in the data analyses.

The results showed that traditional culture, indigenous knowledge, community spirit, learning from school, learning from temple, opportunities to share ideas with other group members, opportunities to share ideas with researchers and educational institutions and children activities were important factors for the development and transmission of environmental ethics in the community. The independent variables for environmental ethics were individual moral standing, moral standing of species or ecosystem, intrinsic value, responsibilities for future generation, sentience, reverence for life, duties in conflicting interest, ecological interdependence and religion. All those have positive correlation with behavior toward forest except individual moral standing and reverence for life. Again, behavior toward forest had positive correlation with community forest management which was indicated by protection of the forest and sustainability of the forest. The results from multiple regression found environmental ethics significantly influence the degree of behavior of people toward the forest. When, looking at relationship between each independent variables and dependent variable it was found that five variables namely individual moral standing, responsibilities for future generation, reverence for life, ecological interdependence, and religion influenced the degree of behavior of people toward community forest.

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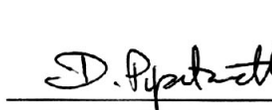

Thesis Advisor's signature

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Md. Mahbubur Rahman
April 2006

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INTRODUCTION

In the way of flourishing Western industrialized civilization, 'nature' has become something to be dominated and be exploited to serve human needs. It has been merely reduced to natural resources ignoring that development should have a well justified adjustment with it. It is recognizing that modernist worldviews have failed to provide us with a way of living as responsible citizen of the global biosphere community. The environmental movement has demonstrated that the consumption habits and psychological underpinnings of mainstream western culture are detrimental to the well-being of the Earth and all of its inhabitants. For example, the New Road Map Foundation, an organization which addresses the high levels of consumption in the U.S., states that the typical U.S. citizen "…causes 100 times more damage to the global environment than a person in a poor country (1999, p. 6)." Recently environmentalists have argued that western culture is not natural, because it separates itself, both in ideology and in practice, from the rest of the living world (Canty, 2003).

The world is now more or less completely influenced by the western culture. Throughout the world, now, the development strategies are designed to maximize the economic growth and material wealth. Human behaviors are driven with the desire for maximizing individual wealth. Extensive exploitation of natural resources since over time has dramatically changed the environment. Depletion of ozone layer, green house effect, pollution of water resources, losses of soil productivity, destruction of tropical forests and temperate dry forests, irreversible losses of biodiversity, etc. are contributing towards a total climatic change which may so alter the natural world to unable to sustain life on this earth. At present, human beings and natural world are on a conflicting course. In this perspective, the concept of sustainable development has evolved.

Sustainable development can be defined as development that meets the needs of the present generation without compromising the ability of future generation to meet their own needs (WCED, 1987). The concept is based on the recognition that the well-being of human society is closely related to the well-being of natural ecosystems (Chimbuya *et al*. 1997). But there are still a lot of controversies about the interpretation of sustainable development. Participants at Rio were also questioning the interpretation of the concept. In its report Our Creative Diversity (1995) UNESCO pointed out that development can be sustainable only as culturally sustainable development. In the first chapter the report demanded the formulation of global ethics as a guideline for the next century. It should be mentioned here that global ethics was already ongoing since the beginning of the 1990s. It is gradually recognizing that environmental issues need the analysis from the point of view of ethics and common good can be achieved through ethical and moral actions, which is a target in itself and not an instrument for materially exclusive profit making. Environmental ethics deals

with the issues like the kind of value that should be attributed to the natural environment, to the things other than human beings, living and non-living, with which we share the world. Should we value them, and be careful in our treatment of them, only because of the manifold ways in which they are useful to us, or do they, or some of them, have value which transcends and is independent of human interests? How should we, as human beings, think of our relationship to (the rest of) nature? (Bension, 2000). For a correct relationship with nature, we must see our situation in a more profound way, seeing ourselves as part of the whole interrelated natural world, not as separate entities or owners or controller of nature, and see that changes in nature must also have an effect on us, this insight will have a constraining effect on our actions, giving the scopes on our actions a clear definition, and preventing them from becoming too extreme one way or another (Payutto, 1993).

Forest is an integral part of nature. Until the 16 th century, the forestlands in the third world countries specially in the Asia Pacific regions was mostly used by local communities for hunting and gathering and distinct form of shifting cultivation (Banerjee, 1995). The forest administration was concentrated to the household, a group of households, or the community level but the ownership lay with the community. This devolved form of forest management was neither an introduced nor imposed process, but rather a natural development of society. With few exceptions the relationship between households and the community, and natural resources, changed dramatically with the arrival of the colonial powers. Forests came under the sovereignty of the state, which meant a move towards centralization. Where forest products had a high commercial value and could be easily exploited the arm of the administration reached the forests quickly (Banerjee, 2000).

A traditional forest culture which was concerned more about harmony among the group and sustainability with the natural environment was quickly dominated by colonial revenue maximizing and profit making culture. Its reflection can be seen in the post-colonial forest management systems in the independent countries. State control on forestland was further tightened. Many of the countries reacted quickly to favorable prices and the rapidly growing market demand for their timber. Some governments lease extensive areas of forests to concessionaires for timber harvesting (Banerjee, 2000). The local peoples right was totally ignored which created tension between the people and the sovereign government. The consequences of it are continuous destruction of forest and deforestation. Recently it is recognizing that forest management solely by forest department without integrating the cultural, spiritual and ethical beliefs and practices of local people is difficult. Sustainability in forests can be implemented with well-defined and equitable ownership rights and responsibilities and it needs systems of forest governance that are accountable to local communities. The lack of cultural perspective including ethical and religious aspects has made many well intentioned approaches superficial and cosmetic (Heinonen *et al.,* 2004). Recognizing these realities, community forestry is expanding rapidly in various countries throughout the world over the last three decades of the last century.

In Thailand by the early 1980s, the government began recognizing the magnitude of forest loss and during this period there was increasing recognition that local participation in forest management could assist in forest conservation (Pragtong, 2000). In 1985, The National Forest Policy stressed the need to involve local communities, the private sector, academia, and other agencies concerned with forest management. In 1991, the Royal Forest Department began a process to develop a Community Forestry Bill to involve local communities in managing communal forest areas. The bill has passed through many processes of public involvement and it hoped that it will become law in the near future (Pragtong, 2000).

Ban Thung Soong village is situated in Krabi Province in the western peninsular Thailand. The people of Ban Thung Soong Community expressed their desire to manage the forest of their community. They submitted a plan to the Provincial Forest Office and it was approved by the Royal Forest Department in 1998. Since then this forest, covering an area of 7300 rai (1168 ha), has become a model of successful community forest management. An understanding of cultural, spiritual and ethical beliefs and practices of community people behind this success may be helpful for future expansion of success of community forestry and academic studies as well.

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Objectives

General objective

To identify the relationship between environmental ethics and community forest management in Ban Thung Soong Community.

Specific objectives

1. To identify how the concept of Environmental Ethics has developed and transmitted in the community;
2. To assess the environmental ethics the community posses;
3. To assess the behavior of the community people toward the community forest;
4. To assess the relationship between ethical beliefs and community behavior toward the forest.
5. To assess the relationship between behavior toward the forest and community forest management.

Scope of the Study

The study was conducted to explore the environmental ethics that exists in Ban Thung Soong Community, Krabi Province, Thailand and to find out how environmental ethics effects the management of the community forest. The results of the study would be a contribution to the body of knowledge on environmental ethics and community forest management. It would provide some grounds for better understanding the social, cultural and ethical perspectives of sustainable forest management which are often neglected in policy making of forestry sector. It would

be helpful for educators, researchers, and development planners especially in assessing people's behavior, the factors behind their behavior that effects the management of forest and matching appropriate development interventions.

As the study was conducted in only one culturally homogenous community, the results may not be applied to the other projects where several communities are involved in the management of the forest. Even it may not be applied for a single community as the ethical beliefs and values may vary from place to place. However, the results of this study may be useful to other places which have conditions and characteristics similar to Ban Thung Soong Community. In addition, the issues of the study may be similar to those experienced by other communities. Other communities may be encouraged to consider, discuss and reshape their policies in managing their forest.

Another limitation of the study, due to limitation of time frame, was that the ecological sustainability of the community forest was assessed only on the basis of respondents opinion and a few existing literature. There is a huge scope of scientific research in this regard specially on soil and hydrology, tree growth, diversity of non timber products, and wildlife diversity in the community forest.

Definition of Terms

Moral standing Something have moral standing means that it has some rights that other must take into account independent of their (other's) own interests, attitudes, or feelings and we have some duties towards them.

Individual moral standing Recognizing the rights of every individual living thing.

Moral standing of species Recognizing the rights of a species or ecosystem, not an individual of the species or individual of a ecosystem.

Instrumental and intrinsic value Things with instrumental value are those which are consumable and which serves our purposes. Things with intrinsic value are things in which we have an interest, but which we do not use. We enjoy having them around but not consume them.

Responsibility to future generation We have some responsibilities towards our future generation. In this research responsibilities are mainly concerned to natural resources and environment.

Reverence for life It means an attitude of awe and wonder to all living things. It is an attitude of great respect to all living things.

Sentience It means the capacity of feeling pains and enjoyment.

Duties in conflicting interests When we believe that we have a relationship with nature then some conflicts of interest between human beings and other natural objects will arise. If we are aware of the interest of all of the things related than it easy deals the conflicts.

Ecological interdependence In ecosystem all living and non-living things are interdependent in a systematic manner. If this interdependence breaks it affects everything of the interdependent system.

Religious ethics Here religious ethics includes the ethical believe concerning nature and human beings. As almost all the population are Buddhist how people values the Buddhist philosophy on environmental ethics will be studied.

Behavior of community towards forest Some commonly used synonyms include “activity”, “action”, “performance”, “responding”, “response”, and “reaction”. Essentially, behavior is anything that a person says or does.

Behavior of the community towards community forest means their dealings with community forest.

The community The community here is the Ban Thung Soong Community, Krabi.

The community forest The community forest here is the community forest of the Ban Thung Soong Community.

Impact on Community Forest Management It indicates good management of the forest which ensures protection and sustainability of the forest.

The village The village here is Thung Soong Village.

LITERATURE REVIEWS

Literature review, here, is confined with the related concepts and theories to serve as background for the study. The topics to be reviewed include the following:

1. Environmental Ethics

2. Environmental Ethics as a branch of Philosophy

3. Some basic concepts related to environmental ethics

4. Ethical Theories

5. Deep Ecology

6. Shallow Ecology

7. Buddhist Philosophy and Nature

8. Community Forestry

Environmental Ethics

In general, environmental ethics is a systematic account of the moral relationship between human beings and their natural environment. Environmental ethics assumes that moral norms can and do govern human behavior toward the natural world. A theory of environmental ethics, then, must go on to explain what these norms are and to whom or to what humans have responsibilities and show how these responsibilities are justified.

Different theories of environmental ethics offer differing answers to those questions. Some philosophers argue that our responsibilities to the natural environment are only indirect, that the responsibility to preserve resources, for example, is best understood in terms of the responsibilities that we owe to other humans. Anthropocentric ("human-centered") holds that only human beings have moral value. Thus, although we may be said to have responsibilities regarding the natural world, we do not have direct responsibilities to the natural world.

An extension of anthropocentric ethics occurs by considering future generations of human beings as objects of our moral responsibilities. This approach remains anthropocentric in that only human beings count morally, but it extends our responsibilities to include some to humans who do not (yet) exist.

Other philosophers have argued that we do have direct responsibilities to natural objects other than human beings. Nonanthropocentric ethics grants moral standing to such natural objects as animals and plants. Typically, this approach requires further extensions and revisions of standard ethical principles. Controversies

surrounding the ethical treatment of animals and the threatened extinction of plant and animal species are among the best-known issues of nonanthropocentric ethics.

A further development of environmental ethics occurs by shifting from a focus on individual living things- for example, spotted owls or redwood trees- to a focus on collections or "wholes" such as species, populations, or ecosystems. Holistic ethics holds that we have moral responsibilities to collections of (or relationships between) individuals rather than (or in addition to) those individuals who constitute the whole. For example, holistic environmental ethics might allow selective hunting of individual animals so long as the population of that species is not endangered. Holism, greatly influenced by the science of ecology, raises more serious philosophical challenges than do more individualistic ethics.

Environmental Ethics as a Branch of Philosophy

The discipline of Philosophy typically can be divided into three fields.

1. Metaphysics

It is the study of the fundamental nature of reality.

2. Epistemology

It is the study of knowledge, and how we acquire it.

3. Ethics

It is the study of goodness and rightness- our reasons for acting in one way rather than another, or our reasons for trying to be one kind of person rather than another.

The study of ethics generally is guided by certain presuppositions. Among the main presuppositions are these. First, we are more or less rational being, capable of understanding the world. Second, we can act on the basis of what we understand. Third, our actions can serve a purpose – we can make a difference.

Ethics itself can be divided into subfields.

3.1 Normative ethics

It is the study of rightness in action, and goodness in states of affairs.

3.2 Descriptive ethics

It is the study of opinions or beliefs about normative ethics. Descriptive Ethics often is considered to be a province of anthropology, not philosophy. The point

of separating normative from descriptive ethics is to emphasize that seeking the truth about ethics is not the same as cataloguing opinions about ethics.

3.3 Metaethics

It studies the meaning and presuppositions of moral theories and moral language and asks what it would be like to justify a moral theory. In effect, then, where normative ethics is the enterprise of formulating theories about what is right and good, metaethics steps back to study normative ethics itself.

In normative ethics, it seeks to formulate theories of the good, sometimes called theories of value. It also seeks to formulate a theory of right action. When people try to apply the results of normative ethics- whether theory of the good or the right- they move into the realm of applied ethics.

The primary areas within applied ethics currently are medical ethics, business ethics and environmental ethics. Lumping the three together is slightly misleading, though. Business and medicine are professions, typically studied in separate professional schools rather than in colleges of art and science; thus business ethics and medical ethics currently are forms of professional ethics in large measure. In contrast, the environment is not a profession and environmental ethics is not the study of ethical issues specific to any particular occupation. Environmental ethics is a way of applying normative ethics to a particular set of practical issues, but it also is a new way of doing normative ethics in general. Environmental ethics asks what people owe each other and to themselves, given their ecological context. It also asks what, if anything, human beings owe to nonhuman animals, to plants, to fragile ecological wonders, to species, and even to ecosystems themselves. It asks what kind of life people should aspire to live, and what kind of world they should aspire to live in. It is the study of value of human life and the value of life in general. In short, part of the beauty of environmental ethics is that it not only applies normative ethics, it encompasses normative ethics.

Some Basic Concepts Related to Environmental Ethics

1. Moral standing or moral status

The objects or beings regarding which human beings may have duties, or have some sort of responsibility to treat as if they matter in some way and for some reason have moral standing (Benson, 2000). Philosophers use various quasi-technical and slightly portentous phrases to describe such beings, they may be said to be “morally considerable”, to have “moral standing” or “independent moral status”. If it is said that something has a considerable weight or has considerable importance, it implies that it is really quite heavy or of more than slight importance. To call a being morally considerable however is not intended to convey any degree of importance, but only to identify the being as one to be considered in a particular way. ‘Considerable’ means ‘eligible for consideration’, or perhaps more strongly, ‘deserving of consideration’ (Benson, 2000). But ‘moral standing’ or ‘independent moral status’ is involved with some rights. A bearer of rights involves the satisfaction of much more demanding

requirements (Goodpaster, 1978). To have independent moral status or moral standing is to be a source of claims or rights that others must take into account independent of their own interests, attitudes, or feelings (Benson, 2000).

Moral standing is a topic that has been much debated in recent years. Debate has centered in three quite different views. According to one, the view of the majority western tradition, human beings are the only animals to have independent moral status; according to a second, all and only sentient beings – those capable of experiencing pain and pleasure - have it; according to a third, all and only beings who are self conscious and aware of themselves as having a past and a future have it (Benson, 2000).

2. Instrumental value and intrinsic value

There has been much debate about whether the environment has intrinsic or instrumental value, value in itself or value as a means to us, and possibly other creatures', ends.

Things with instrumental value include consumables, raw materials and, literally, instruments, equipment, whether natural or artefactual. Such things serve as means to human beings ends, they serve their purposes. People use them to satisfy their wants or needs (Howarth, 1996). The instrumental value of an object lies not in the object itself but in the uses to which that object can be put. When such an object no longer has use or when it can be replaced by something of more effective or greater use, it has lost it value and can be ignored or discarded. Thinking of natural objects in terms of "resources" is to treat them as having instrumental value. For example, Gifford Pinchot's conservation movement emphasized the instrumental value of forests and wilderness areas. The wilderness should be protected and conserved because it is the home of vast resources that humans can use (Jardins, 2001).

Things with intrinsic value or non-instrumental value are things in which human beings have an interest, but which they do not use. They rather enjoy having them around, contemplate them. They have value because of the way they are, the specific properties they have. People value them 'for themselves' (Howarth, 1996). Intrinsic value is the value ascribed to something not for its usefulness but for its own sake (Benson 2000).To say that an object is intrinsically valuable is to say that it has a good of its own and what is good for it does not depend on outside factors. In this sense, it would be a value found or recognized rather than given. Not all things that we value are valued instrumentally. Some things people value because they recognize in them a moral, spiritual, symbolic, aesthetic, or cultural importance. They value them for themselves, for what they mean, for what they stand for, for what they are, and not for how they are used (Jardins, 2001). Many environmental concerns rest on the intrinsic value that is recognized in nature. Life itself, in the view of many, is intrinsically valuable, no matter what form it takes. Wilderness areas, scenic landscapes, and national parks are valued by many people because they are a part of national heritage and history. Grizzly bears may have little instrumental value, but

many people value knowing that the bears still exist in Yellowstone National Park. The symbolic value of the bald eagle transcends any instrumental value that it might have. Undeveloped and unexplored wilderness areas are highly valued, even by people who will never visit, explore or use these areas (Jardins, 2001).

Ethical Theories

1. Anthropocentric Ethics

As philosophers began to apply various ethical traditions to environmental issues, two fundamental questions guided their work. First, what is the proper ethical relationship between humans and the natural environment? Second, what is the philosophical basis for this relationship? In seeking to answer these questions, many philosophers found that the appeal to standard ethical theories was highly ambiguous. Traditional philosophical (and theological) views on the human relationship with nature seemed in many cases to have contributed to environmental destruction and degradation.

For the most part, the Western philosophical tradition denies that any direct relationship exists between humans and the natural environment. According to most ethical theories within this tradition, only human beings have moral standing. All other things have ethical value only insofar as they serve for human interests. Thus, when considering some environmental decision, the ethical person needs only to ask how this decision will affect human beings. To the degree that it can be said to exist, "environmental ethics" is these views are all *consequentialist* ethics. Environmental right or wrong depends on the consequences to humans. Although, human beings have responsibilities regarding the natural world, they have no direct responsibility to the natural world. Environmental responsibility is, at bottom, a matter of prudence: we protect the environment for our own interests. However, this perspective was later extended to include responsibility to future generations of humans.

According to Aristotle, "*Plants exist for the sake of animals…all other animals exist for the sake of man, tame animals for the use he can make of them as well as for the food they provide; and as for wild animals, most though not all of these can be used for food and are useful in other ways; clothing and tools can be made out of them. If then we are right in believing that nature makes nothing without some end in view, nothing to no purpose, it must be that nature has made all things specifically for the sake of man"* (as cited in Jardins, 2001).

Sixteen centuries later, Thomas Aquinas picked up the issue and placed it in a theological context "*We refute the error of those who claim that it is a sin for man to kill brute animals. For animals are ordered to man's use in the natural course of things, according to divine providence. Consequently, man uses them without any injustice, either by killing them or employing them in any other way. For this reason, God said Noah: "As the green herbs, I have delivered all flesh to you."* (as cited in Jardins, 2001)

Aristotle and Aquinas could hold these positions because they believed that only human beings have moral standing. Human beings have moral standing because they possess an intellect (or "soul") capable of thinking and choosing. Because animals and other living beings lack this capacity, they can not be considered morally relevant in themselves. Any duties that we have regarding nature are explainable in terms of the needs or interests of human beings.

Kantian ethical theory is only a little less restricted. We have some evidence that Kant was sympathetic to duties to future generations, and the categorical imperative seems relevant to several environmental issues. Nonetheless, in his lectures on ethics, Kant was quite clear in saying that our duties regarding nature are indirect, that is, they are duties to other humans. More generally, the Kantian analysis – which limits rights and moral standing to "subjects" and "ends," as distinct from "object" and "means"- strongly reinforces the view that only humans have moral standing. In this view, only autonomous beings, capable of free and rational action, are moral beings. Again, because eighteenth century Europeans believed that other living things lacked this capacity, they could exclude them from moral consideration. Nonhuman animals and plants were the clearest examples of objects.

One of the few philosophers who did not unquestioningly exclude animals from moral consideration was Jeremy Bentham. In a passage that is famous because it is such an exception to the mainstream of Western philosophy, Bentham suggested that "*the day may come, when the rest of the animal creation may acquire those rights which never could have been withholden from them but by the hand of tyranny The French have already discovered that the blackness of the skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may come one day to be recognized that the number of the legs, the villosity of the skin, or the termination of the os sacrum, are reasons equally insufficient for abandoning a sensitive being to the same fate. What else is it that could trace the insuperable line? Is it the faculty of reason, or perhaps the faculty of discourse? But a full-grown horse or dog is beyond comparison a more rational, as well as more conversable animal, than an infant of a day, or a week, or even a month old. But suppose they were otherwise, what would it avail? The question is not, Can they reason? Nor can they talk? But can they suffer?"* (as cited in Jardins, 2001).

Later on, philosophers strongly began to argue that we have direct ethical responsibilities to nature, responsibilities that do not depend on the consequences to humans. This shift can be identified as a shift from anthropocentric to nonanthropocentric theories of ethics.

2. Nonanthropocentric Ethics

Nonanthropocentric ethical theories are mainly concerned with animal rights, biocentric ethics, and ecocentric ethics.

2.1 Ethical Theories on Animal Rights

a. Peter Singer and the Animal Liberation Movement

Perhaps the person most associated with the extension of philosophical ethics to animals is Peter Singer. Since the 1970s, Singer has argued that our exclusion of animals from moral considerability is on a par with the earlier exclusions of blacks and women. Singer popularized the term *speciesism* to draw a parallel with racism and sexism. Just as it is morally wrong to deny equal moral standing on the basis of race or sex, Singer argues that it is wrong to deny equal moral standing on the basis of species membership.

Singer begins his argument with a "fundamental presupposition" of moral theory, the "basic moral principle,"that all interests should receive equal consideration. Essentially, this is the formal principle that any being that qualifies for moral standing "counts for one and none for more than one." Even racists and sexists can accept this principle, although they would deny that blacks or women have equal moral standing. Singer must, therefore, explain the criterion for inclusion. What characteristics qualify a being for equal moral standing? Here Singer cites the passage from Bentham referred to earlier: The question is not can they reason, nor can they talk, but can they suffer? Singer goes on to say, "*The capacity for suffering and enjoyment is a prerequisite for having interests at all, a condition that must be satisfied before we can speak of interests in a meaningful way. It would be nonsense to say that it was not in the interests of a stone to be kicked along the road by a schoolboy. A stone does not have interests because it can not suffer. Nothing that we can do to it could possibly make any difference to its welfare. The capacity for suffering and enjoyment is, however, not only necessary, but also sufficient for us to say that a being has interests-at an absolute minimum, an interest in not suffering. A mouse, for example, does have an interest in not being kicked along the road because it will suffer if it is"*. (as cited in Jardins, 2001).

Singer focuses on the concept of interests to explain moral standing. He is not concerned with using interests as a basis for attributing rights to animals. He is sympathetic to Bentham's dismissal of rights as nonsense or at least as only a shorthand way of speaking about moral protections. Nor does he turn to cognitive elements as the essential aspect of interests. In Singer's view, the capacity for suffering (and enjoyment) is all that is needed to establish that a being has interests.

Singer uses the term *sentience* to refer to the capacity to suffer and/ or experience enjoyment. Sentience is necessary for having interests, in that an object without sentience, a rock, for example, can not be said to have interests. But Singer also believes that sentience is sufficient for having interests. A being that is sentient has at least minimal interest, that is, the interest in not suffering.

Because any and only sentient beings have interests, any and only sentient beings have moral standing. We are required to treat all sentient beings with equal moral consideration. This does not mean that we are required to make no

distinctions between humans and other animals. Humans are different from other animals. They have different interests. A "hard slap across the rump" of a horse will cause relatively little pain and, therefore, is not practically unethical. But this does not mean that the principle of equal consideration would justify an equally hard slap across the face of a child. A horse's rump is solid and broad, usually muscled or fat; where as a child's face is bony and small. Certain human mental capacities might cause humans to suffer more from certain actions and in different ways than would other animals. Begins with sophisticated mental capabilities and the capacity for complex emotional and affective states have a greater range of interests and, thus, a different moral standing than creatures with simple cognitive and emotional capacities. But the essential point is that the capacity to suffer and amount of suffering are what determine specific moral requirements. Because all animals above a certain neurological threshold are sentient, all such animals deserve direct moral consideration.

What are the implications of these views? Singer acknowledges that making comparisons can be difficult, especially when these comparisons are made between species. Nevertheless, if we were to restrict ourselves to only those cases in which severe animal suffering was condoned for the sake of mere human convenience, "*We would be forced to make radical changes in our treatment of animals that would involve our diet, the farming methods we use, experimental procedures in many fields of science, our approach to wildlife and to hunting, trapping and the wearing of furs, areas of entertainment like circuses, rodeos, and zoos. As a result, a vast amount of suffering would be avoided"* (as cited in Jardins, 2001).

As the references to Bentham and the emphasis on minimizing suffering suggest, Singer's approach is basically utilitarian. He provides an account of intrinsic good (enjoyment and the absence of suffering) and says that our ethical responsibility is to minimize the overall amount of suffering.

b. Tom Regan and Animal Rights

As Peter Singer has defended the moral standing of animals on utilitarian grounds, Tom Regan has developed a rights-based defense of animals. Regan explicitly argues that some animals have rights and that these rights imply strong moral obligations on our part. Like Singer, Regan condemns on ethical grounds a wide variety of human activities that affect animals. These activities include the use of animals in scientific and commercial research, use of animals as food, and recreational uses of animals that include sport hunting, zoos, and pets. Regan believes that these practices are wrong in principle but not because of the pain and suffering they cause. They violate animal rights by denying the intrinsic ethical value that some animals possess.

If we imagine that Singer's criticisms convince veal producers to change their methods so as to minimize suffering. The calves get some exercise, fresh air, a balanced diet, and perhaps are even groomed regularly. Like the cows in the old

advertisements, these are contented calves. Imagine also that human taste for veal increases so that many consumers have a real desire for veal. Consumers suffer, not much but many do, when they are denied veal.

In such a situation, we could argue that Singer's utilitarian position allows veal production to continue. With these imagined changes in the farming practices of the veal industry, the calves suffer minimally while human enjoyment increases notably.

A defender of Singer's position could dispute with this example, of course. However, the dispute would likely involve specific calculations of relative suffering, pain, and enjoyments. That is, we would need to measure and dispute the consequences of the alternative practices. In this view, raising, slaughtering, and eating the calf for food is not wrong in principle. It is only wrong when the suffering that it causes outweighs the resultant enjoyment. Regan picks up at this point, "*The forlornness of the veal is pathetic, heart wrenching…..But the fundamental wrong is not the pain, is not the suffering, and is not the deprivation. These compound what is wrong. Sometimes, often, they make it much worse. But they are not the fundamental wrong. The fundamental wrong is the system that allows us to view animals as our resources, here for us, to be eaten, or surgically manipulated, or put in our cross hairs for sports or money"* (as cited in Jardins, 2001).

How does Regan explain the principles underlying this view? To understand this, we should consider why it would be wrong to subject humans to similar treatment. Suppose someone was to follow Jonathan Swift's satirical "Modest Proposal" and treat disadvantaged young children as food. These children would be raised in a manner that kept them content and relatively free from suffering. However, at a certain point in their lives (Swift proposed a well-nursed one-year-old), these humans were slaughtered, albeit painlessly, and "stewed, roasted, baked, or boiled." Presumably, we would all acknowledge the moral evil of these activities even if the overall balance of enjoyment over suffering were increased. Why?

Regan argues that the answer lies in our belief that human possess a certain type of value, what he calls "inherent value." Essentially, to have inherent value is to have value independent of the interests, needs, or uses of anyone else. Inherent value is to have value in and of oneself. It is to be contrasted with instrumental value, in which a thing's value is a function of how it might be used by or what it might mean to others. Objects with inherent value are ends in themselves, goals, not merely means to some other end. It is wrong to treat humans (and, as it will turn out, some animals) as mere means to other ends, even if these includes as an end maximizing the net amount of enjoyment over suffering, because to do so denies to these humans the inherent value that they possess.

So far, this approach sounds similar to the Kantian tradition in ethics, and clearly it is greatly influenced by that tradition. But Regan denies that the basis for inherent value lies in the capacity for autonomous action. To see why, we need to introduce a distinction between moral agents and moral patients. Thus, far in our

discussion of moral standing, we have taken competent adult human beings as the clearest example of things with standing. As discussed, philosophers have disagreed about the criterion used to establish standing, but they agree that competent adult humans meet it. These adults are full *moral agents* because they are free and rational. As such, they can understand their duties, choose whether to act on them, and can be held responsible for those choices.

This characterization raises familiar problems with incompetent or immature humans, however. Infants and mentally incapacitated or comatose individuals lack the ability to understand and choose. Therefore, they cannot be said to be moral agents. They have no duties and cannot be held responsible for what they do or fail to do. Indeed, they are *moral patients.* This means that they have moral standing –we cannot do just anything to or with them-even though they are not full moral agents. They cannot act morally or otherwise, but they can be *acted on* morally or immorally.

When we understand this distinction and recognize that many things that are not full moral agents but have moral standing, we can figure out what is missing from much of the standard discussions of moral standing. Too many philosophers have focused exclusively on moral agents in establishing the criterion of moral standing. The class of all things with moral standing includes both agents and patients. We need to ask what is about moral agents and moral patients that explain their inherent value. Why is it wrong, in principle, to treat either agents or patients as food, targets, entertainment, or slaves?

Regan's answer is that they are subjects-of-a-life. Having a life, as opposed to merely being alive, involves a fairly complex set of characteristics, "*To be the subject-of-a-life involves more than merely being alive and more than merely being conscious. To be the subject-of-a-life is to have beliefs and desires; perception, memory, and a sense of the future, including their own future; an emotional life together with feelings of pleasure and pain; preference and welfare-interests; the ability to initiate action in pursuit of their desires and goals; a psychophysical identity over time; and an individual welfare in the sense that their experiential life fares well or ill for them, independently of their utility for others"* (as cited in Jardins, 2001).

Regan argues that justice demands that we treat all individuals with inherent value in ways that respect that value. The "respect principle" identifies Regan's views as an *egalitarian* theory of justice. Justice demands that we treat individuals with respect. Because inherent value is not reducible to any other type of value, we fail to treat individuals who have inherent value with the respect they deserve when we treat them as if they are valuable only as a means to some other end. Individuals with inherent value thus have the rights to be treated with the same respect due to all individuals with inherent value.

It remains for Regan to conclude that animals can be subjects-of-a-life. At least some mammals possess the characteristics required for "having a life."

These animals therefore have inherent value, and justice demands that we treat them with respect. Minimally, this means that we have a strong prima facie obligation not to harm them.

2.2 Biocentric Ethics

Philosophers focus changes as they consider more systematic attempts at developing comprehensive environmental philosophies. These approaches question the wisdom of simply extending traditional ethics, or what we can call "ethical extensionism," in favor of more dramatic and radical shifts in our ethical perspective.

The problems with ethical extensionism center around three issues. First, despite the work of philosophers like Singer and Regan, the principles and concepts used in their application often remain narrowly focused. The criteria for moral considerability defended by many philosophers are most clearly found in adult human beings. Critics charge that ethical extensionism gives moral standing only to those animals that most closely resemble adult humans. As a result, these extensions remain fundamentally hierarchical and, according to critics; beg the question about the moral status of other living things. For example, both Singer and Regan attribute moral standing only to higher animals. Other living things remain outside the range of moral consideration. This omission strikes many environmentalists as both an ethical and logical mistake.

Second, these extensions remain thoroughly individualistic. Individual animals have standing, but plants, species, habitat, and relations have no standing in their own right. Yet so much of the science of ecology stresses the interconnectedness of nature. Ecology emphasizes such wholes as species, biotic diversity, ecological communities, ecosystems, and biological, chemical, and geological cycles. Relations, communities, systems, and processes play a major role in the science of ecology. Unfortunately, standard ethical theories have little room for such concerns. Indeed, we need only remember Regan's dismissal of the ethical focus on communities as environmental fascism to see how unreceptive these standard ethical views can be. To some environmentalists, this is the perfect example of a perspective caught in the grasp of a philosophical theory and ignoring the facts of science.

Finally, these extensions are not, nor were they intended as, comprehensive environmental ethics. Philosophers applied ethics to specific problems as they arose and as they were perceived, with little or no attempt at building a coherent and comprehensive theory of environmental ethics. This focus has had two unhappy results. First, the extension of ethics to cover, for example, the rights of animals can provide no guidance for many other environmental issues like global worming or pollution. Second, extensionism tends to remain critical and negative. It often tells us what is wrong with various policies and actions but seldom offers much about what the alternative "good life" should be.

a. Schweitzer's the Reverence for Life

Biocentric Ethics refers to any theory that views all life as possessing intrinsic value. (The word biocentric means life-centered). Thus, although some one like Tom Regan is willing to attribute an inherent worth to some animals, his view is not biocentric because it does not include all living things.

An early version of biocentric ethics is Albert Schweitzer's "reverence for life" principle. Schweitzer (1875-1965) wrote extensively about religion, music, ethics, history, and philosophy. He also, of course, devoted much of his life to bringing medical care to remote and isolated communities in Africa. His ethics, captured in the phrase "reverence for life," is an extremely interesting precursor of contemporary biocentric ethics.

Modern industrial society had moved away from a worldview that connected the goodness of life with the goodness of nature. This belief, what Schweitzer called "world-and-life-affirmation," is reminiscent of the natural law tradition in ethics. The rise of science and technology and the industrialized society that accompanied them split the connection between ethics and nature by viewing nature as an indifferent, value-free, mechanical force. Modern science often views nature as a machine, governed by physical and mechanical laws. There is no good (nor, for that matter, evil) intrinsic to nature itself. Set adrift in such a world, human ethics is left without foundation. Ethical value becomes no more than personal opinion or sentiment. Modern industrial society with its wars, impersonal bureaucracies, meaningless work, and cultural decay is the result of this separation.

Schweitzer's ethical thinking sought to reestablish the bond between nature and ethics. He was convinced nonetheless that there was good in nature, an intrinsic value that could help provide a basis for human ethics. The idea that Schweitzer developed to solve the issue is captured by his phrase "reverence for life".

Schweitzer describes in almost mystical terms the moment that this idea came to him. While riding on a barge traveling upriver in Africa, "at the very moment when, at sunset, we were making our way through a herd of hippopotamuses, there flashed upon my mind, unforeseen and unsought, the phrase *Reverence for life.*

What does reverence for life mean? Schweitzer's original German phrase was *ehrfurcht vor dem leben*. Ehrfurcht implies an attitude of awe and wonder. Although reverence perhaps connotes a religious tone that is missing in ehrfurcht, it seems clear that Schweitzer had something like this in mind. The etymological roots of ehrfurcht suggest a combined attitude of honor and fear. It would not be misleading to think of the attitude often inspired by majestic vistas seen from atop high mountains or the attitude inspired by violent storms.

Schweitzer held that the most fundamental fact of human consciousness is the realization that "I am life which wills to live, in the midst of life which wills to live." Ethics begins when we become fully aware and fully in awe of

that fact. According to Schweitzer, *"The man who has become a thinking being feels a compulsion to give to every will-to-live the same reverence for life that he gives to his own. He experiences that other life in his own. He accepts as being good: to preserve life, to promote life, to rise to its highest value life which is capable of development; and as being evil: to destroy life, to injure life, to repress life which is capable of development. This is the absolute and fundamental principle of moral life"* (as cited in Jardins, 2001).

In our terms, Schweitzer is claiming that all living things have an intrinsic value, a value that commands our awe and reverence. Life is not a neutral, value-free "fact" of the universe. Life is good in itself. It is inspiring and deserving of respect.

Schweitzer did not envision reverence for life merely as some rule that we could apply to specific situations and, as it were, simply read off the recommended decision. Reverence for life is more an attitude that determines who we are rather than a rule for determining what we should do. It describes a character trait or a moral virtue rather than a rule of action. A morally good person stands in awe of the inherent worth of each life.

But what does this say about those circumstances in which the good person must choose to kill? What about the doctor who kills a virus? The butcher who kills a pig? The farmer who cuts down a tree? Schweitzer denies that we can escape responsibility for these decisions. They must be made, but they should be made responsibly and consciously. Reverence for life is that character trait that sensitizes us to the responsibility of these decisions. It is an attitude that makes us aware of the full implications of these decisions. It makes us reluctant to take a life randomly, callously, or without remorse. In doing this, it helps us live an authentic and moral life.

Schweitzer's ethical views are richly textured and firmly based in the experiences of many years in the African wilderness. Yet these views never attained a wide popularity among either the public or philosophers. Perhaps the tendency to see such a perspective as overly romantic or naïve is too common or too strong an obstacle. Schweitzer also never developed the type of scholarly defense of this position that professional philosophers demand. However, recent biocentric theories may be more persuasive. (as cited in Jardins, 2001)

b. Taylor's Biocentric Ethics

Paul Taylor's 1986 book *Respect for Nature* is one of the most fully developed and philosophically sophisticated contemporary defenses of a biocentric ethics. Although, Schweitzer tried to explain what reverence for life meant and what practical implications follow from this attitude, he never provided an adequate justification for adopting that attitude. Part of the strength of Taylor's view, lies in his careful defense of why it is reasonable to adopt the attitude of respect for nature. For this reason, we will concentrate on his view as our example of biocentric ethics.

As a biocentric theorist, Taylor seeks a systematic and comprehensive account of the moral relations that exists between humans and other living things. Taylor sees this relationship as being based on the inherent worth of all life. According to Taylor, "*The central tenet of the theory of environmental ethics that I am defending is that actions are right and character traits are morally good in virtue of their expressing or embodying a certain ultimate moral attitude, which I call respect for nature"* (as cited in Jardins, 2001).

Taylor's explanation and defense of this theory proceed through a number of steps. He first argues that it is meaningful to say that all living things have a good of their own. All living things can be said to have a good of their own because all living things are, in Taylor's phrase, "teleological centers of life." Taylor believes that this "good" is a simple fact that follows from living beings has a life. Having a good of itself is necessary, but not sufficient, for attributing any human responsibility to that entity. To say that an entity has inherent worth is to go beyond the factual claim that they have a good and make the normative claim that this entity deserves moral consideration and that moral agents have duties toward it. We move from the descriptive claim that it possesses inherent worth when we come to understand and accept what Taylor calls "the biocentric outlook on nature." Accepting this outlook and recognizing the inherent worth of living things is to adopt respect for nature as our "ultimate moral attitude." In turn, adopting this attitude means that we will act in morally responsible ways toward the natural environment.

To understand Taylor's views, we first need to distinguish things that have a good of their own from things that do not. Taylor cites a child as a being with a good of its own and a pile of sand as something about which it makes no sense to ascribe goodness. Parental decisions aim to promote the child's good. The child is benefited when that good is furthered and harmed when that good is frustrated. On the other hand, it is meaningless to talk of the sand's own good, as if the sand itself can be harmed or benefited in any way.

Taylor next relies on a traditional philosophical distinction between *real* and *apparent* good or between what we call *objective* and *subjective* value concepts. A thing's good is not always identical with what that being *believes* is its good. What *appears* to me to be good for me (subjectively) may not *really* (objectively) be good for me. This distinction allows Taylor to include in his biocentric ethics any being that has an objective good of its own. By ignoring the concept of apparent or subjective goods, he is not limited to including only those beings that possess the beliefs, interests, or desires presupposed in any account of subjective good.

What entities have an objective good of their own? Taylor's answer is to be found in the concept of a teleological center of a life. To understand this, it is helpful to draw some parallels with Schweitzer's reverence for life ethics and the natural law tradition of Aristotle. It also is informative to contrast what Taylor says with the concept of a subject- of- a - life as Regan uses it in animal rights ethics.

According to Taylor, "*Concerning a butterfly for example, we may hesitate to speak of its interests or preferences, and we would probably deny outright that it values anything in the sense of considering it good or desirable. But once we come to understand its life cycle and know the environmental conditions it needs to survive in a healthy state, we have no difficulty in speaking about what is beneficial to it and what might be harmful to it. Even when we consider such simple animal organisms as one-celled protozoa, it makes perfectly good sense to a biologically informed person to speak of what benefits or harms them, what environmental changes are to their advantage or disadvantage, what physical circumstances are favorable or unfavorable to them. The more knowledge we gain concerning these organisms, the better are we able to make sound judgments about what is in their interest or contrary to their interest"* (as cited in Jardins, 2001).

This is something that most of us, at least when we are not caught in the grips of a philosophical theory, would accept. It makes perfect sense to about the good of any living thing. This good is objective in the sense that it does not depends on anyone's beliefs or opinions. It is a claim that biological evidence can support. It is something that we can come to *know.* When we know an entity's good, we know what would be in that entity's interests, even if the being itself, like a plant, has no conscious interests of its own. Thus, even the weekend gardener can meaningfully talk about compost being good for tomatoes, pruning being good for an apple tree, drought being bad for vegetables, aphids being bad for beans, and ladybugs being bad for aphids.

All living things have a good because living beings are teleological-centers-of –life. The Greek word *telos* is translated as "purpose," or "goal," or "end." Aristotle was led by his biological observations to claim that all living things act toward some distinctive goal, or telos. Like Aristotle, Taylor claims that each species has a distinctive nature that determines the specific good for that species. Unlike Aristotle, this nature need not be identified with the organism's essence or soul. For Taylor, this nature is more like the ecological niche or functions fulfilled by that species. Each species has its specific end, but all living things do have ends. In general, that end is growth, development, sustenance, and propagation. Life itself is directional in the sense that it tends toward this end. Each living thing is the center of this purposive activity. Each living thing is the teleological center of a life (Jardins, 2001).

Schweitzer's phrase in this context, "I am life which wills to live in the midst of life which wills to live" is similar. So long as we do not assume that all things that "will to live" must do so consciously, Schweitzer's thinking is similar to Taylor's on this point. Each living thing has its own good because, as a living thing, each life has direction, a goal, a telos. This is true whether the being itself is consciously aware of that fact or not. The will to live is manifested in the biological processes of growth, development, propagation, and sustaining life.

This view can be contrasted with Tom Regan's defense of animal rights. Regan argued that all being that are subjects-of-a-life have the inherent value

that qualifies that being for moral standing. To be a subject-of-a-life involves a complex set of characteristics that go beyond merely being alive and merely being conscious. In this way, Regan defends moral standing only for "mentally normal mammals of a year or more." Taylor's concept of a teleological center of a life is more inclusive than Regan's subject-of-a-life. According to Taylor, "*To say it is a teleological center of a life is to say that its internal functioning as well as its external activities are all goal-oriented, having the constant tendency to maintain the organism's existence through time and to enable it successfully to perform those biological operations whereby it reproduces its kind and continually adapts to changing environmental events and conditions. It is the coherence and unity of these functions of an organism, all directed toward the realization of its good, that make it one teleological center of activity"* (as cited in Jardins, 2001).

Like Regan, unlike Aristotle and Schweitzer perhaps, Taylor is especially careful in moving from the *descriptive* claim that some being has a good of its own to the *normative* claim that we have ethical duties toward that being. According to Taylor, it is a matter of biological fact that living things have a good of their own. But this is not an ethical good in the sense that this fact alone does not commit us to any particular ethical stance toward living things. Having a good of its own does not by itself confer moral standing on a being.

Taylor's perspective explains the normative claims that all living things have moral standing and that we have duties toward them by reference to the concept of inherent worth. As he uses this phrase, inherent worth commits us to making two further normative judgments: entities with inherent worth deserve moral consideration and all moral agents have duties to respect that entity's own good. What is the connection between a thing having a good of its own and its possessing inherent worth?

Having a good of its own makes it possible for a living thing to be the object of human duties. That is, we can have duties to promote or preserve a being's good only if it does, in fact, have a good of its own to be promoted. Having a good of its own is, therefore, necessary for a being to possess inherent worth. But it is not sufficient. The normative claim that living things have an inherent worth is to be explained and justified by reference to what Taylor calls the "biocentric outlook."

The biocentric outlook is a system of beliefs that conceptualizes our relationship to other living things. It is a system of beliefs that provides a fundamental worldview of the natural world and our relationship to it. Once we adopt this worldview, we see that treating all living things as possessing inherent worth is the only way of treating them that makes sense. Only the way of understanding them is consistent with the biocentric outlook.

The biocentric outlook on nature center around four central beliefs. First, humans are seen as members of Earth's community of life in the same sense and on the same terms as all other living things. Second, all species, including humans, are part of a system of interdependence. Third, all living things pursue their own good in

their own ways (the teleological center of life belief). Finally, humans are understood as not inherently superior to other living things.

Taylor goes on to explain that the biocentric outlook is a way of conceiving nature that all rational and factually informed people should adopt. It is an outlook that is firmly based on reasonable scientific evidence. Rejecting this outlook would require us to give up or significantly revise a good deal of what the science of ecology has learned. Once a person adopts this view, such a person would see that recognizing the inherent worth of all living things is the only perspective on life that is consistent with this outlook.

To regard living things as possessing inherent worth is to adopt the attitude of respect for nature. It is to adopt a fundamental attitude toward nature that establishes certain basic motivations and dispositions. To adopt this attitude is to be disposed to promoting and protecting the good of other living things simply *because* it is their own good. It is to accept the good of other beings as a reason for one's own action.

Taylor's biocentric ethics addresses a number of philosophical issues that were missing in Schweitzer's reverence for life ethics. His account of how the biocentric outlook makes the attribution of inherent worth to all living things reasonable offers a rational basis for this belief that is missing in Schweitzer. Likewise, his description of inherent worth and a good of one's own add much to the philosophical debate. It remains for Taylor to turn to issues of normative ethics and offer more practical advice.

Taylor's normative ethics focuses on two basic issues: the general rules or duties that follow from the attitude of respect for nature and priority rules for resolving conflicts between the ethical claims of humans and other living things.

Taylor develops four general duties that follow from the attitude of respect for nature. They are the rules of *nonmaleficence* , *noninterference, fidelity,* and *restitutive justice.* As the term suggests, the duty of nonmaleficence requires that we do no harm to any organism. Taylor understands this as a negative duty. That is, we have the duty to refrain from any act that would harm an organism with a good of its own. We do not, however, have the positive duty to prevent any harm that we are not causing. Nor do we have the duty to reduce suffering or aid the organism in attaining its own good. Finally, like all duties, this requirement applies only to moral agents. For example, except for humans, predatory animals can not be required to refrain from harming their prey.

The rule of noninterference also establishes negative duties. By this rule, we are required not to interfere with the freedom of individual organisms or, in general, with ecosystems or biotic communities. Because humans can interfere with individual organisms in a variety of ways, a variety of specific duties follows from this general rule. We neither should actively prevent organisms from freely pursuing their good, nor should we act so as to deny them the necessities required to attain that

goal. Thus, we should not trap or enslaves organisms or do anything that would deny them health or nutrition. The duty of noninterference requires that we "not try to manipulate, control, modify, or 'manage' natural ecosystems or otherwise intervene in their normal functioning." Finally, because this is a negative duty, we have no positive obligation to help such organisms fulfill their telos, except where our own actions are the cause of the harm.

Taylor applies the rule of fidelity only to animals that live in the wild. Respect for nature requires that we not deceive or betray wild animals. Most hunting, fishing, and trapping -and much of the enjoyment and challenge of these activities- involve the attempt to deceive and then betray wild animals. As in any case of deception, the deceiver assumes superiority over the deceived. The deceived, whether an animal or another human, is taken to have a lower worth than the deceiver. Although hunting, fishing, and trapping also typically involve violating the duties of nonmaleficence and noninterference, breaking the rule of fidelity is yet another means of showing disrespect for nature.

The fourth rule, the duty of restitutive justice, requires that humans who harm other living organisms make restitution to those organisms. Justice demands that when a moral subject has been harmed that the agent responsible for that harm makes reparation for the harm. In general, the first three duties establish the basic moral relationship between humans and other living organisms. When any of these rules is violated, the rule of restitutive justice requires that the moral balance between the two be restored. Thus, if we destroy an animal's habitat, justice demands that we restore it. If we capture or trap an animal or a plant, justice demands that we return it to its natural environment.

Finally, Taylor argues for a priority relation for these four rules. He believes that the duty of nonmaleficence is our "most fundamental duty to nature." He also believes that with careful attention, we can minimize conflicts involving the other three. However, when conflicts cannot be avoided and when significant good can result without permanent harm, restitutive justice outweighs fidelity, which outweighs noninterference.

Perhaps the biggest challenge to any biocentric ethics arises when human interests conflict with the interests of nonhumans. In many ways, this is the primary test of any environmental philosophy, and it is typically the major motivation behind any attempt to develop an environmental philosophy. What is to be done when important human interests come into conflict with the welfare of nonhuman organisms?

We need to recognize that in order to remain consistent with the fundamental principle of biocentric ethics, any resolution of such conflicts must not privilege human interests. That is, we can not accept as a solution any decision that grants an in-principle advantage to humans. Any solution to conflict must respect the inherent moral worth of nonhumans.

We thus recognize that many moral conflicts and dilemmas would not arise within an anthropocentric framework. It is only after we acknowledge the inherent worth of other living things that a wide variety of conflicts can arise. Taylor mentions several as examples: filling in a wetland to build a marina, bulldozing a meadow of wildflowers to build a shopping mall, plowing a prairie to plant wheat or corn, and strip-mining a mountainside.

These activities raise moral problems only when we acknowledge that they create significant harm to other living organisms. But how do we resolve these conflicts without automatically favoring humans? Following a long tradition in liberal political philosophy, Taylor argues for several formal or procedural rules to provide fair and impartial resolution of these conflicts. These rules are: (1) self-defense, (2) proportionality, (3) minimum wrong, (4) distributive justice, and (5) restitutive justice.

Self-defense would justify favoring human interests when the conflicting interests of nonhuman organisms threaten or endanger human health or life. Thus, we would be justified in killing an attacking grizzly bear or exterminating an infectious organism or insect. As in the case of human self-defense, this principle holds only as a last resort.

The other four principles come into play when no serious harms to humans is threatened. They all rely on a distinction between *basic* and *nonbasic interests.* The principles of proportionality and minimum wrong govern those cases in which the basic interests of nonhumans conflict with the nonbasic interests of humans. In the case, if the nonbasic human interest is incompatible with the basic interests of nonhumans, the principle of proportionality prohibits us from satisfying the human interests at the expense of the (basic) nonhuman interests. Thus, for example, human interest in killing reptiles to make fashionable shoes and handbags is prohibited, via the principle of proportionality, by the respect for nature.

When non basic human interests can be made compatible with the basic interests of nonhumans, even though they threaten or endanger the nonhumans, the principle of minimum wrong sets the conditions for satisfying human interests. Thus, the respect for nature might allow damming a river for a hydroelectric power plant even when this will adversely affect other living things.

The principle of distributive justice sets the conditions for resolving conflicts between the basic interests of humans and nonhumans. In general, fairness demands that burdens be shared equally and that the distribution of benefits and burdens be accomplished impartially.

Finally, restitutive justice demands that restitution be made whenever a resolution of conflict fails to meet the conditions established by the principles of minimum wrong or distributive justice. (Jardins, 2001).

2.3 Ecocentric Ethics

Biocentric Ethics represents a significant shift from traditional ethical thinking by extending moral standing to much of the natural world. But for many environmentalists, biocentric ethics seems inadequate for addressing a wide variety of environmental issue. According to ecocentric approaches an adequate environmental ethics must also give serious consideration to nonliving natural objects, such as, rivers, mountains, etc. and it must give due consideration to ecological systems. Ecological ethics should be holistic in the sense that ecological wholes, such as, ecosystems or species, as well as nonliving natural objects and the relationships that exist among natural objects are seen as deserving ethical considerations. Ecocentric thinkers argue that biocentric approaches literally fail to see the forest for the trees. They claim that environmental concerns for ecosystems and wilderness areas are not the same as a concern for the individual trees, plants, and animals that live within them. Wilderness areas, forests, wetlands, prairies, and lakes are valuable in their own right and deserve moral consideration. Since ecosystems, species, mountains, rivers, and so forth are not alive in any obvious sense, biocentric approaches seem unable to account for the ethical value that ecocentrists want to attribute in ecological wholes.

a. Leopold's Land Ethics

The individualistic approach to environmental ethics – directed first to human beings (anthropocentrism), then to sentient beings ("animal liberation") and then to living organisms ("biocentrism") - has extended in favor of a holistic, contextual view believes that, just as "you can not (in fact) do just one thing," in ethics "you can not evaluate just one thing. " In ethics, as in nature, everything is connected to everything else" – the whole informs the parts.

Leopold opens "The Land Ethic" by retelling the story of Odysseus who, on returning from the Trojan War, hanged a dozen of his women slaves for misbehavior. Because slaves were understood as property, Odysseus's action was not seen as unethical or inappropriate. Since that time, ethics has evolved so that moral standing is now extended to all human beings. "The Land Ethic" is Leopold's call to continue this extension of ethics to include land, plants, and animals. At mid-century, land, like Odysseus slaves, was understood as mere property.

An ecological understanding of land rebuts the view of land as property. We can no longer treat the land as mere object, as dead matter that can be used and shaped in any way that humans desire. According to Leopold, land should be viewed as a living organism that can be healthy or unhealthy, injured or killed (Jardins 2001). The Land Pyramid is the pivotal section of "The Land Ethic" – the section which effects a complete transition from concern for "fellow-members" to the "community as such." A description of the "ecosystem" begins with the sun. Solar energy "flows through a circuit called the biota". It enters the biota through the leaves of green plants and courses through plant-eating animals, and then on to omnivores and carnivores. At last the tiny fraction of solar energy converted to biomass by green plants remaining in the corpse, animal feces, plant detritus, or other dead organic

material is garnered by decomposers – worms, fungi, and bacteria. They recycle the participating elements and degrade into entropic equilibrium any remaining energy. Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals," (Callicott 1987). Leopold speaks of the "extension of ethics" and tells us that the land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively, the land. His suggestion seems to be that we should extend moral consideration, what he terms "biotic rights," to birds, soils, waters, plants, and animals (Jardins, 2001).

The land ethic granted moral standing to the "land community". Individual members of that community can still be treated as resources as long as the community itself is respected. The "ecological conscience" teaches that humans are but members of the biotic community, "biotic citizens," rather than conquerors of nature. Ecology shifts the focus of moral consideration away from individuals and onto biotic wholes (Jardins, 2001).

Accordingly, the moral extensionism that is at work in Leopold's writing does not ask that we simply make room in our moral deliberations for yet another type of individual moral subject. Leopold asks that we make a radical category shift away from individuals. We now ought to grant moral standing to communities, symbolically represented as the land (Jardins, 2001).

This aspect of land ethic is concisely summarized in Leopold's most celebrated and controversial statement: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

As a consideration of the land ethic Leopold traces the life cycle of an oak tree to the following way. The oak that was using as firewood was killed by lightning during a July storm. The lightning "put an end to wood making by this particular oak" and "bequeathed to us three cords of prospective firewood." Leopold mourns the loss of the old tree but is satisfied to know that a dozen of its progeny have already set down roots in the nearby woods. After a year of drying, he cut the oak by hand, each pull of the saw cutting through years of the oak's life as captured in its annual rings. Leopold traces the life of the oak with each pull, rehearsing the changes in the local environment back through the years to the time around the Civil War when the oak first sprouted from an acorn. At the other end of the cycle, the oak is reduced to ashes in the fireplace while providing heat for the farm house. Eventually, the ashes will be returned to the land as compost, only to reappear, in time, as a red apple or a "fat squirrel bent on planting acorn."

Thus, the death of a single magnificent oak tree, while sad in itself, can be viewed from a broader perspective. All living things, including humans, must be viewed as members of the ecological community. The oak is honored as a member, even as it is used as firewood. One oak dies and other species benefit by consuming it. Yet in a harmonious and stable relationship, each member of the community is a resource for the continuation of the lives of others. An oak dies, but oaks live on.

Resources are used but never without being recycled into the system. The community is characterized by countless of these interdependencies. Its health is characterized by long-term integrity and stability (Jardins, 2001).

At this point, there are several elements of the land ethic that make it an attractive philosophical option. First, the land ethic offers a fairly comprehensive perspective. At first sight, it appears to offer a decision process for most, if not all, environmental and ecological issues. Unlike the animal welfare movement, it can offer normative guidance for issues as diverse as wilderness preservation, pollution, conservation, energy, resource depletion, and so forth.

Second, it also can avoid many of the counterintuitive conclusions that challenge the individual biocentric approach. We do not need to be overly concerned with such issues as killing a mosquito, cutting a tree, or tearing up a lawn. The continued healthy functioning of the system is the primary concern.

Finally, the land ethic is thoroughly nonanthropocentric. Humans are said to have no privileged status in the ecological community. They are reduced from conquerors to mere members. Not only does this shift accord natural objects and systems moral standing, but it also is more consistent with the teachings of ecology.

Deep Ecology

The distinction between shallow and deep ecologists was first made by Norwegian environmentalist and philosopher Arne Naess who defined a shallow ecologist as anyone whose concerns are confined to his fellow humans and to a narrow selection of nonhuman forms of life, mainly those which serve human purposes. His platform for the deep ecology movement includes the following formulations: (i) The flourishing of nonhuman life on Earth has as much intrinsic value as the flourishing of human life; (ii)The value of nonhuman species is independent of the usefulness these may have for narrow human purposes; (iii) The richness and diversity of the earth's life-forms are valuable in themselves and contribute in any case to the flourishing of all life on Earth, including human life; (iv)Humans have no right to reduce this richness and diversity except insofar as it is necessary to satisfy vital needs.

Although more recent deep ecologists may use a vocabulary which is different from that used by Naess, there are certain basic intuitions that mark off the deep ecologists as a group from their critics and opponents. One of their basic intuitions is that our dominant ethical codes and philosophies, especially our Western codes and philosophies, have been too concerned with how we treat other human beings and not concerned enough with how we should treat non-human beings, including animals, plants, and nature generally. Our dominant attitude is one of systematic. Just as we regard an individual as unethical if he is self-centred, if he always acts in his own interest, so we might say that the human species as a whole is unethical if it acts only in its own interest, to the detriment of other species. To value other species ethically will mean a complete revolution in human attitudes. It will mean overcoming

thousands of years of speciesism. It will mean valuing other species for their own sakes, treating them as ends in themselves, rather than merely as means to human ends. If a species of animal or plant is to be preserved, it should be preserved for its own sake and not just for the sake of the human species. This is an even more radical position than it seems. It means that nonhuman species should be regarded as having a right to exist, a right not to be damaged or polluted or destroyed. The recognition of such a right would mean the advocacy of a new environmental ethic, a nature-centred moral code which would make it immoral to always place human interests before the interests of the rest of nature, especially wild nature.

The deep ecologists are critical of any form of environmentalism that is not nature-centred. They regard any form of environmentalism that is human-centred environmentalism as shallow - shallow, because it will tend to value wild species, wildernesses, and ecosystems only to the extent that they serve human needs and interests. Nature is still being perceived as a resource, as something to be used, exploited, or consumed, rather than as something to be respected. In the view of the deep ecologist, to perceive anything as exploitable or usable is already to perceive it unethically. A properly environmental ethic cannot be derived from such an attitude. The deep ecologist believes that nature must be respected as valuable in itself, regardless of its usefulness to human beings, regardless of its beauty or ugliness, regardless even of its interest to naturalists or scientists. The natural world is to be perceived as intrinsically or inherently valuable, and not merely as instrumentally valuable. The claim is that we ought to have the same kind of concern for nature in general as we have had historically for the human species. To regard other persons morally is to regard them as having inherent worth; analogously, to have the attitude of respect for nature is to regard the wild plants and animals of the earth as possessing similar inherent worth.

This kind of point lies at the centre of Paul Taylor's book, *Respect for Nature*. Taylor argues that an attitude of respect for nature commits us to perceiving wild animals and plants as having a 'good of their own' which human beings have a duty to respect. By adopting such an attitude, by regarding animals and plants as having a good of their own, we will be disposed not only to give respectful consideration to their existence but also to see ourselves as bearing a moral relationship to them. This would mean treating all wild living things as ends in themselves rather than as mere means to human ends. It would mean engaging in practices and policies which are aimed at specific ways of preserving natural ecosystems and of ensuring a physical environment that is as beneficial as possible to as many species as possible. Anyone who adopts such an attitude of respect will feel pleased about any occurrence that maintains the existence of the Earth's wild communities of life, and to feel displeased about any occurrence that does harm to living things.

The respecter of nature will want to say that nonhuman creatures have claims to life that are so deserving of recognition that they can come into conflict with the claims of human beings. In other words, humans cannot assume that they constitute the only species that has rights, or that all of nature is at their disposal. Respecters of nature will try to find what Taylor calls 'priority principles' for resolving conflicts

between humans and nonhumans - principles which do not assign greater inherent worth to humans. One such principle suggested by Taylor is the principle of proportionality. According to this principle, if there is a conflict between the interests of human beings and the interests of nonhuman creatures, greater weight should be given to basic than to nonbasic interests. A basic interest in this context is a vital interest, the denial of which leads to death or serious injury; a nonbasic interest is one which may be denied without causing death, injury, or even major inconvenience. The sorts of actions which would be ruled out by this principle include

In all of the above examples, the vital interests of animals or plants are sacrificed to the nonbasic interests - that is, recreational or 'luxury' interests - of human beings. This is incompatible with the attitude of respect for nature. Taylor's other priority principles are (i) the principle of self-defence; (ii) the principle of minimum wrong; (iii) the principle of distributive justice (not hogging the earth's resources for ourselves, habitat allocation, organic farming, waste kept to a minimum); and (iv) the principle of restitutive justice (Duddy, 2005).

Shallow Ecology

A recent critic of deep ecology has been the Australian philosopher John Passmore. Nothing is to be gained, in Passmore's view, by insisting that human beings share a moral community with the rest of nature: Bacteria and human beings do not recognize mutual obligation, nor do they have common interests. In the only sense in which belonging to a community generates ethical obligation, they do not belong to the same community. To suggest, then ... that animals, plants, landscapes have a 'right to exist', is to create confusion. The idea of 'rights' is simply not applicable to what is non-human. (Passmore, 1980 as cited in Duddy, 2005) He is not convinced that there is anything evidently right about preserving biological diversity or anything evidently wrong with destroying a whole species. It all depends, he thinks, on the species. Is it so obvious, he asks, that a universe consisting of human beings and a cobra is better than a universe consisting of human beings only? Should St. Patrick be condemned for driving the snakes out of Ireland? 'And if to drive them out of Ireland is worthy of praise, should it not be equally praiseworthy to drive them out of the world (Duddy, 2005).

In Passmore's view, the core concepts of morality, such as the concept of rights, do not apply to something called Nature. Animals and plants, either individually or collectively, do not recognize mutual obligations; do not participate in the moral community. The claim that it is intrinsically wrong to cut down a tree, or clear a wilderness, or even destroy a species of animal or plant, is 'merely ridiculous.' It is ridiculous because it introduces a concept of morality which is barely intelligible to us, as if new moralities are the kinds of things that can be devised at will.

Calling for a new morality, for the recognition of the intrinsic worth of all living things, is like calling spirits from the vasty deep. It sounds fine and worthy but ultimately it is an ineffectual gesture. New moralities cannot be conjured out of the air anymore than spirits from the vasty deep. A morality can only grow out of existing

practices, values, and attitudes of mind, as an extension or development of them. People who are concerned about the environment are therefore better off working with and within the value-systems that already exist in whatever cultural and ethical tradition they find themselves. For example, the idea of reverence for life which is promoted in the writing of some environmentalists is best understood as the development of an idea which is to be found in traditional religious and ethical thinking, namely, the idea of reverence for *human* life. It can be linked most specifically to the Jewish principle that it is wrong unnecessarily to destroy:

Thou shalt not destroy' was indeed converted by Rabbinical commentators into a general moral principle. The eighteenth-century philosopher, Baumgarten, writing in the same tradition, condemns ... what he calls 'the spirit of destruction' or 'the habitual delight in the death of things' and urges that a man possessed by it be shunned. One could go at least this far: the moral onus is on anyone who destroys. This is particularly so when, as in the case of species, the destruction is irreversible (Duddy, 2005).

There is, then, such a thing as wanton destruction of nature, just as there is such a thing as wanton destruction of property or cultural artifacts. The reverence for non-human life which is demanded by deep ecologists can be seen as an extension of the sort of reverence people already feel for historical or cultural artifacts like works of art, monuments, or great buildings. This reverence is nothing radically new - it is embodied in the concept of 'vandalism'. Most cultures have a concept of vandalism, of wanton destructiveness of valued objects, and at the same time they cultivate attitudes of respect towards objects and places of antiquity. Such antiquities are 'time-honored' - they are valued just because they are ancient and have earned their keep, as it were. It is arguable that this attitude of respect for time-honored antiquities may be extended to things that are older than human time, things that are as old as the earth itself. If we can endorse a cultural taboo against the vandalizing of antiquities and works of art, we can also endorse a similar taboo against the needless destruction of nature's own antiquities, namely, wild species and wildernesses. As Passmore says, 'The man who cuts his name on a redwood is being a vandal, just as much as the man who scratches his initials on the portico of Wells Cathedral' (Duddy, 2005).

In thinking along these lines, shallow ecologists go a long way with the deep ecologist - but they give different reasons for what they are doing. They advocate respect for nature, not because nature has rights, or has inherent worth or a good of its own, but because such an attitude is consistent with living a rational, moral and humane life. By destroying aspects of nature we risk our own health and the health of future generations, and also debase ourselves by being destructive, cruel, or simply insensitive.

A position similar to Passmore's has been taken by American philosopher Joel Feinberg. Feinberg asks what sorts of beings or things may be said to have rights, and bases his own answer on what he calls 'the interest principle.' The sorts of beings that can have rights are precisely those that have (or can have) interests. First, a holder of rights must be capable of either claiming rights or having its rights represented; second, a rights-holder must be capable of being a beneficiary in its own person. But a

being or thing cannot be represented and cannot be a beneficiary if it has no interests because (a) a being without interests has no 'behalf' on which others might act, and (b) a being without interests is a being that is incapable of being benefited or harmed, since it has no good or 'sake' of its own. Interests presuppose awareness, expectation, belief, desire, aim, and purpose: 'without awareness, expectation, belief, desire, aim, and purpose, a being can have no interests; without interests, it cannot be benefited; without the capacity to be a beneficiary, it can have no rights' (Feinberg, 1974 as cited in Duddy, 2005).

On the basis of this relationship between awareness, interest, and rights, Feinberg excludes vegetable life from the rights community. Trees and plants do not have even a rudimentary mental life; they do not therefore have interests; and if they do not have interests, they cannot be beneficiaries of any rules designed to protect them. And if they cannot be beneficiaries, they cannot have a right to protection. Trees and other plants are just not the sorts of things that can have their own 'sakes'. Having no conscious wants or goals of their own, trees cannot know satisfaction or frustration, cannot sense pleasure or pain. Hence, there is no possibility of kind or unkind treatment of trees. We may speak of plants thriving or flourishing, withering or languishing, but such idioms have to do with human perceptions and purposes, not with the self-perception or purposes of the plants themselves. We may also talk about the kinds of conditions that are in the interests of a plant but, again, these interests are assigned by human beings rather than by the plants themselves. To say that a tree needs sunshine and water is to say that without them it cannot continue to grow, but, according to Feinberg, 'unless the growth and survival of trees are matters of human concern, affecting human interests, practical or aesthetic, the needs of trees alone will not be the basis of any claim of what is "due" them in their own right'. The needs in question are assigned needs, related to human perceptions and interests; they are not the felt needs of the plants themselves.

The only part of the nonhuman world that can be said to have rights is the animal world, according to Feinberg. Animals, especially the so-called higher animals, have appetites, needs, sentience, awareness, and the capacity to feel pain, frustration, or deprivation. They have interests which can be represented by human beings; they can be the beneficiaries of rights and can be harmed if their interests are neglected. Although Feinberg is reluctant to say that all animals have rights, he nonetheless accepts that animals are the sorts of beings of whom rights can meaningfully be predicated or denied. There are certainly ways of treating animals that may be described as immoral for the reason that they are cruel or wantonly destructive. It does not follow, however, that animal species have rights. Individual elephants can have interests but the elephant species do not have interests because a species, if it is an entity, is not the sort entity that can have interests (By the same logic, the human species, considered as a species, does not have interests either.). Therefore, the elephant species does not have rights, even the right to survive. This does not mean that the species ought not to be protected. It means only that the argument for its protection must be based on other grounds. We can say, for example, that we have a duty to protect threatened species, not in the sense of duties to the species themselves as such, 'but rather duties to future human beings, duties derived from our housekeeping role as temporary inhabitants of this planet'.

If Feinberg is right, then the claims of deep ecologists - especially the claim that nature has rights - cannot be sustained. We cannot claim that rivers, mountains, forests, wildernesses, ecosystems have rights, or that human beings have a duty towards them. We cannot even claim that species have rights. If we are to make a case for preserving wildernesses, ecosystems, and wild species it will have to be on human-centred grounds, including economic, scientific, or aesthetic grounds. To the question, 'Do we need an environmental ethic?' Feinberg would reply that such an ethic is untenable if it is going to be based on the belief that nature has rights or interests that can be represented. If we are going to be concerned for the environment, it should be in terms of our own interests and values as human beings; and if we are going to call this an ethical concern, it can only be on the basis that damaging the environment sometimes involves cruelty to sentient creatures, and puts the life and health of future generations of human beings at risk. If we wish to use the term 'duty' in this context, it can only be in the sense that we may have duties regarding animals that are not at the same time duties to animals, just as we may have duties regarding rocks, or buildings, or lawns, that are not duties to the rocks, buildings, or lawns. (Cf. Kant, *Lectures on Ethics* as cited in Duddy, 2005)

The deep ecologist will argue that the shallow approach is unethical because it is not nature-centred - that we should have the same respect for nature that we have had traditionally for the human species. There is one major problem, however, with this sort of claim. It does not seem possible to model our relationship with nature on the relationship we have with each other as members of the same species. It is not just because morality involves some degree of mutual recognition of obligation, but because a nature-centred environmental ethic would require us to relate to our environment in ways which would, on the face of it, make our own natural lives impossible. It is precisely because of our biological, creaturely, animal natures that we cannot respect (the rest of) nature in the way that we may respect each other. It is significant that when we wish to state graphically the extent to which one person disrespects another we say: He walked all over her. To walk on someone, in some figurative if not literal sense of the term, is to show great disrespect for her. Yet, this is what we must do to get about in the (non-human) world - walk on it, step on it, make holes in it, dig into it, plough it up, mine it, bury rubbish in it. We must also destroy things that grow on the earth and out of the earth if we are to eat; having eaten we must expel waste from our bodies, which will always cause some degree of pollution, even if at a very local level.

In the course of exercising our nature-given, if not God-given, human intelligence we also create or manufacture all sorts of objects which increase the production of waste matter. Of course, we must control and manage all of this pollution, but it is not possible for us to opt for zero-pollution, zero-waste, zero-consumption, or zero-destruction (in the way that we can opt for zero-murder or zero-dishonesty). To put it another way, it is not possible for us to opt for absolute conservation or absolute preservation (in the way that we can opt for absolute respect for each other's lives, or absolute honesty). To opt for absolute conservation would mean never making use of any part of the natural world, or seeing any part of it as a resource. Everything would have to be left as it is, not used, worked on, or consumed. Likewise, it is with absolute preservation. To opt for absolute preservation - at least in

the sense of preserving every specimen of every species - would mean never consuming any part of any other species, whether animal or plant. That would mean that you could never eat, or at least not with a good conscience. Even walking about on the surface of the earth would become a source of moral anxiety, since we frequently damage small-scale plant and animal life when we move around in the natural world, even when we do so carefully. For these sorts of reasons, we cannot entirely agree with Kant when he says that destructiveness is immoral. Certainly, wanton or unnecessary destruction is immoral, but the level of destructiveness that it takes to pull up a plant, break it apart and eat it - or perhaps to kill an animal and eat it - is a necessary level of destructiveness for a species that, like all other creaturely species, has to take its sources of energy from outside itself. An attitude of respect for nature which would be on a par with our prescribed respect for other members of our species would make it impossible for us to do live, since living implies the relatively destructive activity of eating and the relatively or potentially polluting activity of excreting waste matter from our bodies. We are not pure spirits, at least not in our biological manifestation, and we must hunt and gather and harvest, and find shelter, and clothe ourselves, and make some arrangement for the carrying away and dispersal within the natural world of our bodily waste.

Once we unpack all the implications of what it is to live, then we see that that we must regard some parts of nature as sources of food and energy. We must see that some of these sources are going to be things that are themselves alive, even if only as resources such as clean water and land, that we must deliberately grow things purely for our own good rather than for the good of the things themselves, that we must sometimes treat other species as means to our ends rather than as ends in themselves. If we treated everything in nature as an end in itself we could not justify our own survival, or for that matter the survival of other living species, since all living species survive and flourish at the expense of some members of some other species, whether it be other animal species or species of plant life. There is a very serious limit to the kind of respect we can have for the things that we eat, just as there would be a rather serious limit to the kind of respect a cannibal could have for the other human beings that he kills and eats. This does not mean that we do not have duties with regard to nature. We do. I would go so far as to say that we should adopt Taylor's five priority principles, despite the fact that they come from a deep ecologist. But, as Kant was the first to point out, we do not have duties *to* nature, if by 'duties' we mean the sorts of duties we have towards other human beings. If we must use the term 'respect' it should be in a suitably qualified sense, a sense qualified by our understanding of ourselves as animals who could not survive in a world of absolute conservation or absolute preservation.

We share with other animals, then, the need to eat, defecate, and do all those things which bring us into relatively destructive and relatively pollutant relationships with some parts or elements of nature. It does not follow, of course, that we have an absolute right to destroy and pollute. Human beings don't just lead an animal or natural life. They lead a kind of double life - an animal life certainly, but also a cultural life; an animal life in which they interact with nature like any other animal, but also a cultural life in which they stand back from nature the better to understand it, appreciate it and marvel at it through science, art, poetry, and other reflective

practices. One of the things that make us distinctively human is our ability to marvel at existence itself, including the existence of nature. As Emily Dickinson said, to live is so startling it leaves little room for other occupations. This is the cultural, distinctively human, reflective sense of 'live'. To live in this sense is to be the kind of person, the kind of being that is startled by the very existence of the world, and who feels diminished by anything that threatens the existence of that world, anything that makes that world a less marvelous place in which to live. What is immoral in this context is not our failure to love nature for its own sake but, rather, our failure to love nature for our own human sakes. Our tendency to over-exploit and damage nature is not so much a sign of a lack of love for nature as a sign of a lack of love for ourselves. Just as we show disrespect for ourselves as individuals when we let our own dwelling places become filthy, stinking, and obnoxious, so it shows lack of love for ourselves as a species when we let the natural world become filthy, stinking, and obnoxious. I am inclined the think, therefore, that a conscientious shallow ecology, precisely because it is human-centred, can deliver more or less the same results as a thorough-going deep ecology, and can do so without committing us to some form of anti-humanism. What we need is a shallow ecology that is deep enough to make us value the natural diversity of the world but not so deep that we undervalue our own duties to ourselves as a natural species. What we need is not so much a new environmental ethic as a new environmental ethos - i.e., an outlook which is as fully appreciative of the natural world as is consistent with our need to survive in it, and which registers horror at any activity which causes the needless destruction of non-human species (Duddy, 2005).

Buddhist Philosophy and Nature:

Phra Dhammapitaka (P. A. Payutto and formerly Phra Debvedi respectedly), one of the most scholastic interpreters of Buddhism in modern Thailand, has explained nature in his book Buddhadhamma which offers an erudite interpretation of core elements in the Buddhist doctrine:

According to the Buddha's teaching, there is nothing which exists beyond or separate from nature, either as a mystical power controlling events from with out, or in any way related to or involved in the proceedings of nature. Whatever, is associated with nature can not be separated from nature, but must be a component of it. ….] The same applies to our relationship with nature. The manner of speech, which describes human beings as separate from nature or as controlling nature, is simply a contrivance of language. Human beings are part of nature, not separate from it. To say that we control nature simply means that we become determinants within the cause and effect process (Payutto, 1994:22-23 as cited in Ivarsson, 2001).

Monk Buddhadasa Bhikku, another highly respected scholastic interpreter of Buddhism in modern Thailand, has offered the following interpretation of the term thammachat (nature) :

This Pali word may not correspond to the English "nature" exactly, but they are close enough. Take it to mean something which exists within itself, by itself, of

itself, and as its own law, this sense of nature is not opposed to man as Westerners would have it, but encompasses man and all that he experiences (quoted in Isager, 2000:26 as cited in Ivarsson, 2001).

Central to this scholastic interpretation of nature/thammachat is the Buddhist perception of the "true nature" of things, which holds that all things in the world in essence are the same as they share the same basic characteristics. That is, first, that everything is impermanent, is constantly changing, and is caught up in an endless circle of being- death-rebirth from which the only escape is Nibbana. There is no such thing as being, only becoming. There no permanent and unchanging ego, only an acting-together of factors which make up what we believe constitute "I". In the words of Buddhadasa:

If we look so deeply so we see [the process of] flow and that [things] are just that, [then] we will discover that things do not differ from each other: The earth is flowing, trees are flowing, rocks are flowing, human beings are flowing, and animals are flowing. Everything is the same – nothing is different from each other because there is only the way of change. Happiness is part of the way of change; suffering is part of the way of change. From a deep perspective, in reality, happiness and suffering are the same (Buddhadasa, 2000:19-20 as cited in Ivarsson, 2001).

The second basic characteristic is that nothing exists in autonomous isolation but everything is linked together in endless links of causal relations and is conditioned by factors outside themselves as expressed in the doctrine of dependent origination. Therefore, in Buddhist theological context, the way all things come about is the same and all things are mutually dependent and are mutually influenced by each other. Man is no different from the rest of nature and the distinction between "man" and the "natural environment" is false just as the distinction between "ego" and "other". Although man and the natural environment are different in the outward appearance, they form a unity as they are governed by the same fundamental laws and are similar in their "natural state". These laws – as expressed in the *Four Noble Truths* and the law of Dependent Origination – are from the core of the Buddhist doctrine, Dhamma. Therefore, from a Buddhist perspective, ultimately nature is conditioned and governed by Dhamma. In the words of Buddhadasa:

Nature (dhammajati) is all things that are born naturally, ordinarily, out of the natural order of things that is from Dhamma. Everything arising out from Dhamma, everything born from Dhamma is what we mean by "nature". That is what is absolute and has the highest power in itsel (Santikaro, 1998:65 as cited in Ivarsson, 2001)

Therefore, for Buddhadasa, to see thammachat is to see the world and all existence in their natural state characterized by non permanence, constant change, cessation and rebirth – to see "nature" is to see Dhamma (Buddhadasa, 2000). In accordance with this view, Buddhadasa does not call Buddhism a "religion" but rather calls it a "Truth of Nature" or "Natural Truth" (Buddhadasa, 1996:1 *as sited in Ivarsson, 2001*).

The practice of ahimsa or non-violence is in the core of Buddhist doctrine. All the Buddhist precepts are based fundamentally on non-violence, or reducing the sufferings of others. Practicing the first precept, not killing, raise ethical dilemma around food, land use, pesticides, pollution, and cultural economic invasion. The second precept, not stealing, suggests considering the implications of global trade and corporate exploitation of resources. Not lying brings up issues in advertising and consumerism Not engaging in abusive relations covers a broad realm of cruelty and disrespects for nonhuman others (Kaza 2003).

Ecological awareness is rooted in the history of Buddhism, seen in the interrelationship between the Buddha and the forest throughout his life and inherent throughout his teachings (Darlington, 1997 *as sited in Ivarsson, 2001*). Many hold that Buddhism and Buddhist values are closely associated with a distinct environmental ethic, which can be used to encourage a protective attitude towards nature and thereby supply man with a solution to current environmental problems. In literature propagating this idea of a close link between Buddhism and conservation of natural environment, Buddhism has earned epithets such as an "ecological religion" or a "religion of nature" (Ivarsson, 2001).

This notion of a "Buddhist environmentalism" or "Green Buddhism" often centers on a series of key ideological positions defining a specific "Buddhist Worldview". Among others, these ideological positions include:

- A Buddhist worldview encompassing a holistic approach to the man-nature link depicting man as part of nature and not separate from it as opposed to a Cartesian man-nature divide.;

- The idea of man living in harmony or coexisting with nature as opposed to conquering or mastering nature. Linked with this position is also a "gentle", "non-aggressive" attitude as opposed to an "aggressive" attitude to nature;

- An eco-centric as opposed to an ego-centric environmental ethic;

- Spiritual development and mental control as opposed to economic development and technological control;

- Non-greed as opposed to ostentatious consumerism;
- Loving compassion and respect for all life as opposed to respect for solely human life.

Community Forestry

1. Concept of community forestry

Community forestry is the control and management of forest resources by the rural people who use them especially for domestic purposes and as an integral part of their farming systems. (Fisher and Gilmour, 1997)

Community Forestry, one of the most successful approaches of the forestry sector, is defined as a process through which government transfer the responsibility of managing forests to the communities and recognizes latter's right to use on sustainable basis (Kanel, 2004). It implies that there is a significance of sustainability concept in the community forest management.

Rural communities live in close proximity of community forest. Mostly they directly rely on the CF for fuelwood, fodder and subsistence livelihood. Simultaneously, it empowers women and poor through the upliftment of socio and economic status by the process of decentralization and good governance. These people need regular supply of forest products and income from the forest in order to maintain their life perpetually. Therefore, the sustainability of community forest management has turned out to be indispensable.

2. The Global Scenario of Community Forestry

Forests cover 26.6 percent (3454 million ha.) of the total land area of the world of which developing countries account for 56.8 percent. The comparison of forest cover in the period 1990–1995 indicated a net loss of 56.3 million ha, forest area, representing a decrease of 65.1 million ha (0.65% per anum) in developing countries and an increase of 8.8 million ha (0.06% per anum) in developed countries (FAO 1999 as cited in Maraseni *et al.*, 2005).There are somewhere between 1 and 1.5 billion of the world's poorest people living in and around forests. These people, many of whom are Indigenous Peoples, have often had their human and property rights denied or worse, have been dispossessed of their ancestral land (White *et al.,* 2004). But the situation is changing now. Forest ownership patterns are changing dramatically across the globe. Central governments, the traditional holders of large swathes of the world's forests, are now increasingly divesting their land ownership and devolving their forest management responsibilities through privatization and decentralization.

Among the many shifts and changes in forest tenure throughout the world, two new trends stand out. The first is the recognition of indigenous and other community-based rights, and the second is the devolution of administrative responsibility for public forest land to communities. The term 'administrative responsibility' refers here to the management of forests resources and the use of the economic benefits generated by these resources (White *et al*., 2004).

There are numerous examples of governments that have begun to recognize indigenous and other community land rights. In Colombia, for example, legal changes in 1995 allowed indigenous groups and Afro-Colombian communities to register their rights to territories that they have historically occupied. Titles to land have been granted to 404 communities (White *et al.,* 2004). At least 10 countries (Australia 1996; Bolivia 1996; Brazil 1988; Colombia 1991; Indonesia 2000; Mozambique 1997; Philippines 1997; Tanzania 1999; Uganda 2000 and Zimbabwe) have enacted new legislation to strengthen indigenous ownership during the period of 1988–2000 (White and Martin 2002 as cited in Maraseni *et al.*, 2005). Several other countries,

such as Chad, the Comoros, Congo, Kenya, Morocco, the Niger, Nigeria, Swaziland and Togo have drafted new legislation in line with participatory management systems during 2002 (Wily 2003 as cited in Maraseni *et al.*, 2005). Around 32 percent of the total forest area of Benin and Cameroon, 37 percent of Burkina Faso, 46 percent of Zimbabwe and 90 percent of the Congo is under Community Based Management System (Potters *et al.,* 2003 as cited in Maraseni *et al.,* 2005).

In Tanzania the Forest Act of 2002 provides a legal framework for the establishment of village and community forest reserves. A study by Liz Wily and Peter Dewees in 2001 found a total of 1,502 forest reserves owned and manage by villages, covering an area of approximately 323,000 ha. Since then, an additional 60,000 ha of forest have been brought under local management (Sumbe, 2004).

Local communities have also been documented as spending significant amount of time, labor, and financial resources on forest management and conservation activities. In Mexico, for example, community investments of volunteer labor, including forest monitoring and improved management practices, equals two to ten person years of employment per year in each village. This is comparable to investments made by the 5,000 still-functioning Van Panchayats (Forest Protection Committee) in Uttar Pradesh, India, in which villagers volunteer for fire control, patrolling, management meetings and resource monitoring activities. In the Brazilian Amazon, volunteer patrolling and encroachment protection by indigenous tribes in their 100 million hectares of high conservation value forest lands save the government hundreds of thousands of dollars every year in foregone expenditure (White *et al.,* 2004).

In Asia-Pacific countries, Community Forestry is also expanding recognizing the local people role on forest management. Community forestry has enhanced opportunities for the rural poor to participate actively in, and benefit from, the management of forest resources. Some countries have initiated steps to develop and decentralize forest management to local authorities and communities. However, the degree of decision-making power actually in the hands of the poor is questionable, and the extent to which the opportunities have been realized is also debatable.

Approaches taken vary from country to country. For example, in Nepal, access and use rights to forests are given to forest users, whereas in Vietnam, forest land is allocated to individual households. On the other hand, in Thailand, many community forestry initiatives are happening on the ground without any national framework to legitimize these local efforts. In contrast, the legal framework for community forestry is widely recognized in the Philippines, but it is yet to be translated into a reality that benefits the local communities. Unlike most Asian countries where the state is the major owner of forestlands, over three-fourths of the total forestland in the Pacific countries legally belong to local communities. Despite the advances gained from these emerging community forestry modalities in the Asia- Pacific countries, problems still exist, as seen in the following examples:

In China, while over 60% of forestland (150 million ha) are nominally 'owned' by local communities, in reality, environmental and other concerns severally constrain their rights to manage these "community" assets.

In India about 8.3 million families are managing 17.3 million ha of forests (Bahuguna, V.K., Capistrano, D., Mitra, K. and Saigal, S., 2004). But in general the villagers' capacity to govern the forests effectively and equitably is still restricted by policies and practices from the past.

In Indonesia, the national government has transferred responsibility for managing natural resources, including forests, to local authorities. However, decentralizing control to local governments without devolving rights and management to users or user groups is likely to lead to potential conflicts, especially if the benefits are not shared by local communities.

In the Philippines, although 5 million ha of forestland reportedly have been handed over to communities supported by local government units, the use of and benefits from the resources remain limited.

In Thailand, over 8,000 village groups are managing forestland officially classified as protected areas where use is legally prohibited. Local authorities have tacitly allowed limited access and use to neighboring communities in the absence of a national-level policy framework.

In Vietnam, the 5 million ha reforestation program, accompanied by forestland allocation, was geared towards households and organization, but not yet to communities, as the management units. (RECOFTC, 2004)

Even in the regional success story, Nepal, not all is well. The recognition of forest user groups as autonomous managers of forest resources has been the basis for the establishment over 12,000 forest user groups managing more than 1 million ha of forest in less than a decade, with more than 75% of the groups forming the national Federation of Community Forestry Users. Unfortunately, this progress is not mirrored in the more richly forested areas of the Terai. There are further indications that only one-fourth of all forest user groups function effectively and manage the resources equitably, while in the remaining three-fourths, the poorest and most dependent members may actually be worsen off (RECOFTC, 2004).

These examples do not belittle the considerable efforts of governments and citizens in Asia to improve conditions for the management of resources by poor people. They should, however, remind us that there are few domains where the battle over contested resources has been decided in favor of those with the greatest need.

Forest Trends made a preliminary attempt to collate the two trends of Community Forestry in 2002- work that was published as Who Owns the World's Forests. This study presented the official government perspective of ownership in 24 countries, representing 93 per cent of the world's remaining natural forests.

Extrapolated to a global forest level, this data indicate that approximately 77 per cent of the world's forests is - according to national laws – owned and administered by governments, at least 4 per cent is reserved for communities, at least 7 per cent is owned by local communities, and approximately 12 per cent is owned by individuals. The data for developing countries show that the percentage of community reserves and ownership are even higher. There are at least 246 million hectares of forest officially owned by indigenous and other communities and at least 131 million hectares of public forest officially administered by indigenous and other communities in developing countries. In sum, community owned and administered forest totals at least 377million hectares or at least 22 per cent of all forests in developing countries. The study also showed that the area owned and administered by communities doubled between 1985 and 2000. This trend looks likely to continue over the next several decades as major forested countries, including once highly centralized systems like Indonesia and Russia, are actively engaged in decentralization processes with strong demands from the local population for the recognition of their rights. Community owned or administered forest areas in developing countries are conservatively expected to at least double again to 700-800 million hectares by 2015 (White *et al*., 2004).

3. The Community Forestry Scenario in Thailand

3.1 The past history of forest management

In about 700 years ago King Lithai, Mahadhamma Raja, of Sukothai, the earliest Thai dynasty, refrained himself from killing of any type of animals and could not tolerate any blood shedding. He practiced a gentle relationship with forest and other natural objects. Then Thai people also dealt forest with love and respect. People knew that human relationship with forest have two dimensions. First, there is a positive relationship which leads human beings to live in harmony with nature. Second, there is a negative relationship which encourages people to destroy nature for their own benefit. People believed that if there is good habitat then there are fat tigers and if there are tigers then there would have dense forests. They also believed that grass cover contributes to the cold earth and soil fertility supports the appearance of grass. It indicates their indigenous knowledge on the relationship among various living and non-living parts of nature. People dealt forests with love and respect even before the emergence of Buddhism in Thailand. There were different myths and beliefs that controlled their behavior toward forests. They believed that the Debotas (forest gods) take care of forests (Personal communication with Dr. Suree Bhumibhamon, 19th February, 2005).

Thai people were aware of cutting big trees. From Bangkok towards the northeast frontier the mountainous range was then called the Dong Phya Fai (the Lord of Fire Jungle). During the reign of King Rama V, the construction of the railroad linking Bangkok to northeast part of the country started. Cutting of hills and big trees for the construction of the railroad was then disturbed by malaria and other sicknesses. As many workers passed away in number, the rest of the workers dared not continue the construction as they linked the cases with the myth. The spirit of

Dong Phya Fai has shown their power and many workers died one after another. Then King Rama V visited the site and commanded that the construction of the railroad would be continued. He also converted the name Dong Phya Fai (the Lord of Fire Jungle) to Dong Phya Yen (the Lord of Cold Jungle). Since then, the construction has continued smoothly (Personal communication with Dr. Suree Bhumibhamon, 19th February, 2005).

Royal Forest Department was established by King Rama V in 1896. Since then, forest management strategies have evolved and Royal Forest Department was charged with managing all forest area in Thailand. The evolution of forest management in Thailand can be divided into four phases (Pragtong and Thomas, 1990).

a. Phase 1, 1896 - 1953: Developing forest management systems and a forest industry

During the period, forest land was managed primarily for commercial timber extraction to meet both domestic and forest consumption. The Forest Industry Organization (FIO) was established in 1947 as a public forest enterprise for timber and wood, and the Thai Plywood Company was established in 1952 to promote in-country wood processing. During this phase, forest and agricultural land were abundant and population density was still low. Until 1953, about 60 percent of the total land area was forested (Pragtong, 2000).

b. Phase 2, 1954 – 1967: State allocation of land for economic development

This period saw a push to use forest land to support national economic development. In 1954, agricultural land was allocated to small farmers under the Land Act 1954 which provided the legal basis for land classification and private ownership. In 1961, the first national social and economic development plan (1961 – 1966) was launched. Fifty per cent of forest land was to remain forested. By the second national plan the target was reduced to 40 per cent. Forest land was quickly cleared by logging concessions which were granted on a large scale to provincial timber companies, and by other governmental organizations which cleared forest for dams and road construction, and by landless farmers who settled in these open, frontier areas. Transformation of the landscape accelerated during this period, and by 1967, forest cover was reduced to 48 per cent of the kingdom while the farmland increased to 26 per cent (Pragtong, 2000).

c. Phase 3, 1968 – 1980: The vanishing forest frontier

In 1968, the government decided to extend long-term harvesting concessions. The program resulted in more than 500 concessions being granted, covering half the country. There were many disputes between forest officers and migrants who settled in the logged over areas. This led to an amnesty in 1974 for those residing in reserved forest land. Two major factors led to these. First, the continuous worry about communist insurgents who had moved into forest areas

throughout the country encouraged further clearance of forest lands to flush the insurgents out. Second was the mass migration of hill tribes escaping the conflicts of neighboring countries into the mountainous forest areas of Northern Thailand. Reflecting the political events of the time, the RFD began playing a more active role in working with communities. In 1975, the National Forest Land Management Division (NFMLD) was created within the RFD to administer the Forest Village Program. This and other rural development programs are generally recognized as having stabilized forest encroachment by setting limits for how much land household can claim (Pragtong, 2000).

By 1980, reserved forest area covered 36 per cent of the kingdom, with national parks and wildlife sanctuaries covering 6 per cent. Most of these areas were also under timber concessions, although minor withdrawals were made for national security considerations in highly sensitive areas. Deforestation accelerated, leaving only 32 per cent of the kingdom under forest cover (Pragtong, 2000).

d. Phase 4, 1981 – 1990: Transition to community forestry

By the early 1980s, the government began recognizing the magnitude of forest loss. During this period there was increasing recognition that local participation in forest management could assist in forest conservation as well as in stabilizing agricultural encroachment into forest land. Thus, the RFD initiated the National Forest Land Allotment (STK) Project, which provided land usufruct certificates to households occupying degraded reserved forest areas before 1982. STK land-use rights were similar to those issued under the Forest Village Project, but the program did not include infrastructure development. Also in 1981, the RFD initiated village woodlots. These woodlots were aimed at increasing forest production for local needs by communities outside forest reserves. In 1985, the National Forest Policy targeted 40 per cent of the country to be under forest land and stressed the need to involve local communities, the private sector, academia, and other agencies concerned with forest management. Other pilot projects were initiated to boost forest cover and reforestation efforts (Pragtong, 2000).

In 1988, serious flooding and landslides in the South generated public concerns and an outcry for more conservation oriented policies. A rising urban middle class, with increasing environmental awareness, pressed for action to halt forest degradation. This led to the 1989 national logging ban. The logging ban pointed towards a shift in national forest management policies toward local participation and forest conservation (Poffenberger, 1999 as cited in Pragtong, 2000).

3.2 Present status of community forestry

In 1991, the RFD began a process to develop a Community Forestry Bill to involve local communities in managing communal forest areas. The bill has passed through many processes of public involvement. However, many discussions have been made in a number of meetings, seminars, and workshops. Now there are five drafts proposed. The Original Community Forestry Bill was sent back to Royal Forest

Department when the government was dissolved. RFD can propose the revised bill to the new government (Bhumibhamon, 2005).In the meantime, the forest department has taken the following initiatives: private forest plantation, forest land use zonation, public involvement in degraded watershed rehabilitation, ecotourism for forest conservation (Pragtong, 2000).

The 1992 Tambon Administration Act (TAO) provides a greater role for local government units in forest management. Under this Act, TAOs (Sub-district Administrative organization) have responsibilities for managing all natural resources within their boundaries. This decentralization plan was further supported be the new Thai Constitution which came into law in 1997. The constitution states that local people and organizations should be involved in managing their natural resources. Both of these laws further enshrine people's participation in forest management and pave the way for clarifying land-use issues and people's role in forest management (Poffenberger, 1999 as cited in Pragtong, 2000).

While formal adoption of the Community Forestry Bill is still pending, the RFD has been testing out a number of pilot projects which will prepare the department for when the bill is eventually approved. This includes: Community Forest and Bufferzone Pilot Projects, Small-scale Forest Plantations, Forest and Forest Fire Protection, and Forest Management and the TAO (Pragtong, 2000).

Throughout the country over 8,000 village groups are managing forestland officially classified as protected areas where use is legally prohibited. Local authorities have tacitly allowed limited access and use to neighboring communities in the absence of a national-level policy framework (RECOFTC, 2004).

Related Researches

1. Haught, Paul A., Ecosystem Integrity and Its Value for Environmental Ethics. Master of Arts (Philosophy), May 1996, 169 pp:

Assessment of ecosystem integrity goes parallel to assessment of another ethical concept, moral integrity. Moral integrity refers to the characters of moral agents (here, human beings) whereas ecosystem integrity refers to the states of ecosystems. When an ecosystem possesses integrity, not only does it possess all of the necessary structural and functional components proper to an ecosystem, but additionally it possesses the beauty and stability associated with a system fitting to its natural history and its ongoing relationship with the entire human community. Ecosystem integrity is not simply the object of scientific inquiry, it is also an ecological value associated with the cultural interests and practices of the human communities who live in and around ecosystems. Ecosystems, like human beings, are historical entities, and their value cannot be assessed in terms of their discrete characteristics or properties. Rather, the value of an entire ecosystem (or the life of a human being) can only begin to be assessed in terms of that system's history, which itself requires the aid of narrative mode for its interpretation

2. Lindquist, Christopher R., Wild Practices: Teaching the Value of Wildness. Master of Arts (Philosophy), May 2004, 90 pp., references, 88 titles.

The notion of *wildness* as a concept that is essentially intractable to definition has profound linguistic and ethical implications for wilderness preservation and environmental education. Generally the ways in which wilderness value is expressed through language reveals much confusion and repression regarding our understanding of the autonomy of nature. By framing discussions of wilderness through fact–driven language games, the value of the wild autonomy in nature becomes ineffable. In removing wildness from the discourse on wilderness we convert wilderness value from an intrinsic value into a distorted instrumental value. If we want to teach others that wilderness value means something more than a recreational, scientific, or economic opportunity, we need to include other ways of articulating this value in our education programs. Through linking the wildness of natural systems with the wild forms in human language games, this thesis examine the conceptual freedom required for valuing autonomy in nature. The focus on what is required of language in expressing the intrinsic value of wilderness reveals that wilderness preservation and environmental education need complementary approaches to the current science-based frameworks, such as those used by the National Park Service. The disciplines of poetry, literature, ethics, and aesthetics offer alternative language games that allow for a more fluid, imaginative, and open-ended understanding of the autonomy of nature, and a means for articulating the value of this wildness that implies an ethical position of humility.

3. Leard, Jason, Ethics Naturally: An Environmental Ethic Based on Naturalness. Master of Arts (Philosophy), May 2004, 102 pp., references, 181 titles.

The thesis has attempted to base an environmental ethic on naturalness. Human actions may exceed the spatial and temporal scales of natural events, but humans are citizens of a greater biotic community. People must choose what to value in any situation. An ethical value should come from nature and then naturalness will be that norm. Following nature is the correct or right way to live. This way of living, however, is probably entirely out of the question for most people today due to the consequences within society that following nature would entail. It is important at this point not to change the way of life of humans too quickly or too abruptly. The naturalness environmental ethic is very idealistic. However, if gains can be made in areas such as ecological restoration and biological conservation by way of policy based on naturalness, then that would be a start. All it takes is for someone to begin unwinding the string. Perhaps, this unwinding will finally lead to a nature in which Leopold's vision can truly be realized, namely, one in which we are not only members and citizens of nature but one in which we recognize the citizenship of all of nature at the same time.

4. Dinneen, Nathan, Ranges of consideration: crossing the fields of ecology, philosophy and science studies. Master of Arts (Philosophy), December 2002, 117 pp., references, 45 titles.

In this thesis the researcher investigates how certain approaches to environmental discourse effects dialogue and negotiation. The first two chapters focus on environmental problems surrounding rangeland ecology along the U.S./Mexico border; whereas the last two chapters explore more theoretical conflicts concerning the philosophy of nature. Throughout the thesis the researcher shows the significance of nonhumans (prairie dogs, cattle, biological assessment sheets, environmental laws, etc.) in the human community. By considering the roles of nonhumans we broaden and enrich the conversation between ourselves concerning environmental issues.

5. Windhager, Steven, Rediscovering Context: An Assessment of the Ability of Ecological Restoration to Recontextualize Culture. Master of Arts (Philosophy), August, 1994, 86 pp., bibliography, 94 titles.

Ecological restoration is a science which abandons some of the assumptions of classical science, specifically those that serve to separate humans from nature. Restoration emphasizes the importance of all dimensions of experience. Because of this, restoration is more than merely a product. It can be better conceptualized as a tripartite undertaking made up of a process, a product, and an affective dimension. As a process, restoration is the interaction of active knowers with dynamic systems. The product of the restoration process is a healthy and sustainable community. The affective dimension of restoration recreates human relations with the world through the concepts of care and responsibility. Reinterpreting restoration in this light reveals new dimensions of value which are centered on the experience of local communities. Finally, restoration allows us to see ourselves as community members.

Restorationists need not see humans as either dominating nature or leaving it completely alone. We can be involved in ways that are beneficial for ourselves and the rest of the ecosystemic community without forcing it to do our bidding. We act and react just as do the rest of the community members. Deciding whether we should or should not act is a decision that must be reflexively evaluated. Finally, restoration allows us to see ourselves as community members.

6. Wathinee Sawatdee 2002: Plant Diversity and Ecotourism Resources Potential in the Community Forest and Homestead: A Case Study of Ban Thung Soong Village, Krabi, Thailand. Master of Science (Forestry). 119 pages.

The plant diversity of Ban Thung Soong Community Forest is similar to undisturbed forest in national park and protected areas managed by Royal Forest Department. There are still plenty of seedlings and samplings in the forest. There is high diversity of useful plants in the village. When combined the ecotourism resources in the village, there can index that the way of life, indigenous knowledge, friendliness to strangers are important for ecotourism development.

Conceptual Framework

Here moral standing, instrumental and intrinsic value, responsibility to future generation, reverence for life, sentience, duties in conflicting interests, ecological interdependence, and religion are independent variables. Behavior of people of the community towards forest is dependent variable. Independent variables influence the behavior of people of the community which has impacts on the community forestry management. Figure 1 shows the conceptual framework.

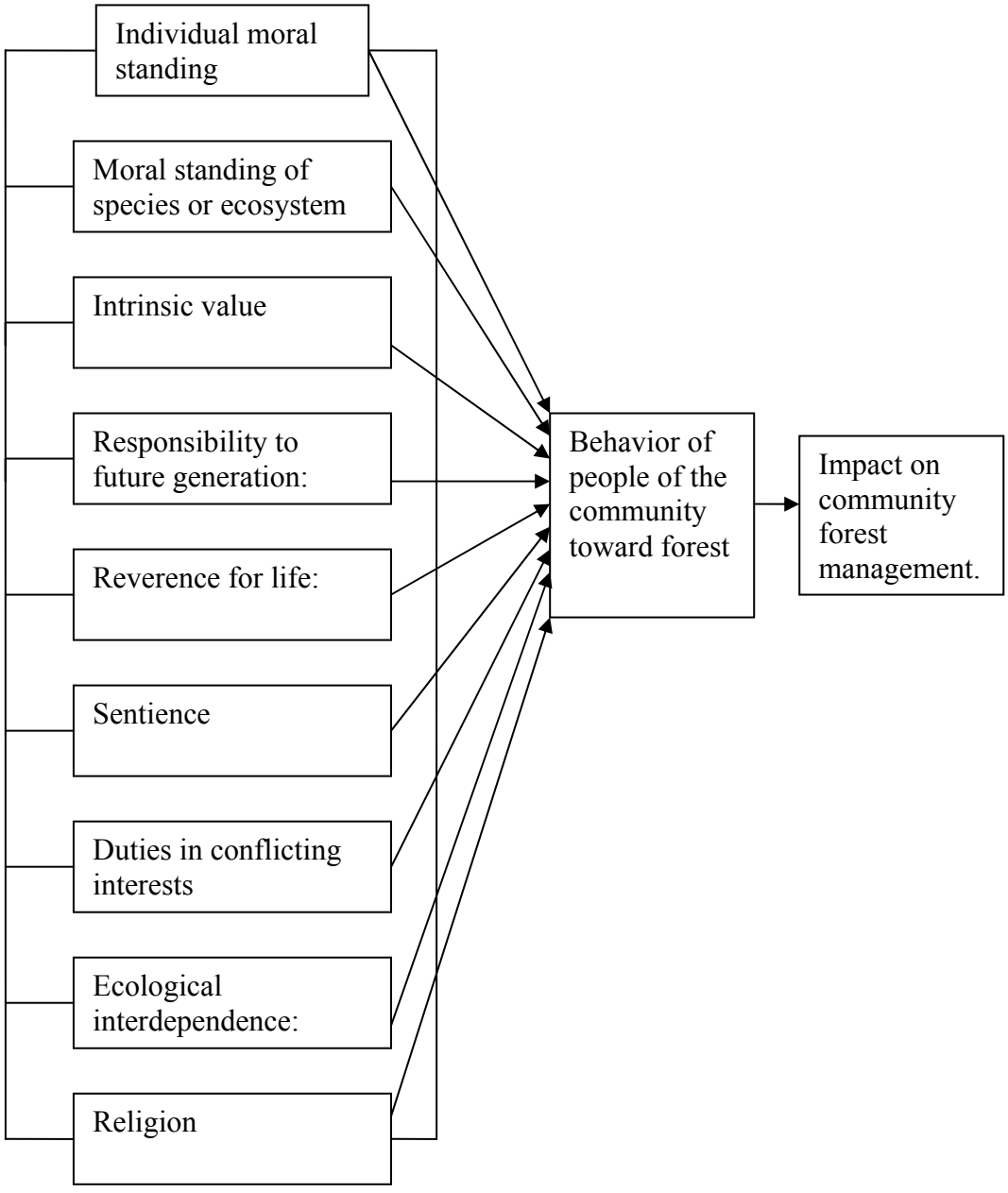

Figure1 Conceptual Framework

Hypothesis

The environmental ethics of the community people have a positive impact on the community forest in Ban Thung Soong Community.

The specific hypotheses are-

There is a relationship between:

- Individual moral standing and behavior of people of the community toward forest;

- Moral standing of species or ecosystem and behavior of people of the community toward forest;

- Intrinsic value and behavior of people of the community toward forest;

- Responsibility to future generation and behavior of people of the community toward forest;

- Reverence for life and behavior of people of the community toward forest;

- Sentience and behavior of people of the community toward forest;

- Duties in conflicting interests between human beings and other natural objects, and behavior of people of the community toward forest;

- Ecological interdependence and behavior of community toward forest;

- Religion and behavior of community toward forest;

- Behavior of people of the community toward forest and community forest management.

MATERIALS AND METHODS

The Study Area

Krabi is one of the 14 provinces in the southern region of Thailand. Ban Thung Soong is one of the five villages of Tambon (Sub-district) Khao Yai of Ao-Luk District of Krabi Province. The village is located between latitudes $8^{o}27^{'}$ and $8^{o}30^{'}$ North, longitudes $98^{o}42^{'}$ and $98^{o}45^{'}$ East and situated about 64 km north-east of Krabi City. The village is bordered by:

North : Sub-district Na Nua, District- Ao-Luk District, Krabi.
East : Sub-district Khi Ri Wong, Plai Praya District, Krabi.
South : Ban Nai Yuan Tai village, Sub-district Khao Yai, Ao-Luk District, Krabi
West : Sub-district Ma Rui, Tup Pud District, Phang Nga.

The topographical feature of village could be classified as flat and hill terrain with the ground surface in the 30-350 m MSL. The hill landform is lied on the north, northeast and northwest boundary of the village (Sawatdee, 2002). Figure 2 shows the map of the study area.

Climate

The climate of the village is tropical monsoon climate. The area is influenced mainly by the three monsoons, namely southwest, northern and northeast and northwest monsoon, and by the cyclone and depression storms. The rainy season occurs from late April to December, approximately for nine months. The rainy season is divided into two periods. The first period is from the late of April to late of September. And the second period is from November to January. Dry season extends from January to April.

The average monthly rainfall ranges 51.6 mm to 384.7 mm while average rainfall is 2428.3 mm. The minimum rainfall occurs during January as the influenced by the northeast monsoon. The maximum rainfall normally occurs in August and September due to the southwest monsoon from Indian Ocean. The average air temperature is the highest in April (29.12°) and lowest in November (26.97°) while average annual air temperature is (28.08°). The annual average of relative air moisture is 82.67%. The highest and lowest average of relative air moisture occurs in October and February respectively.

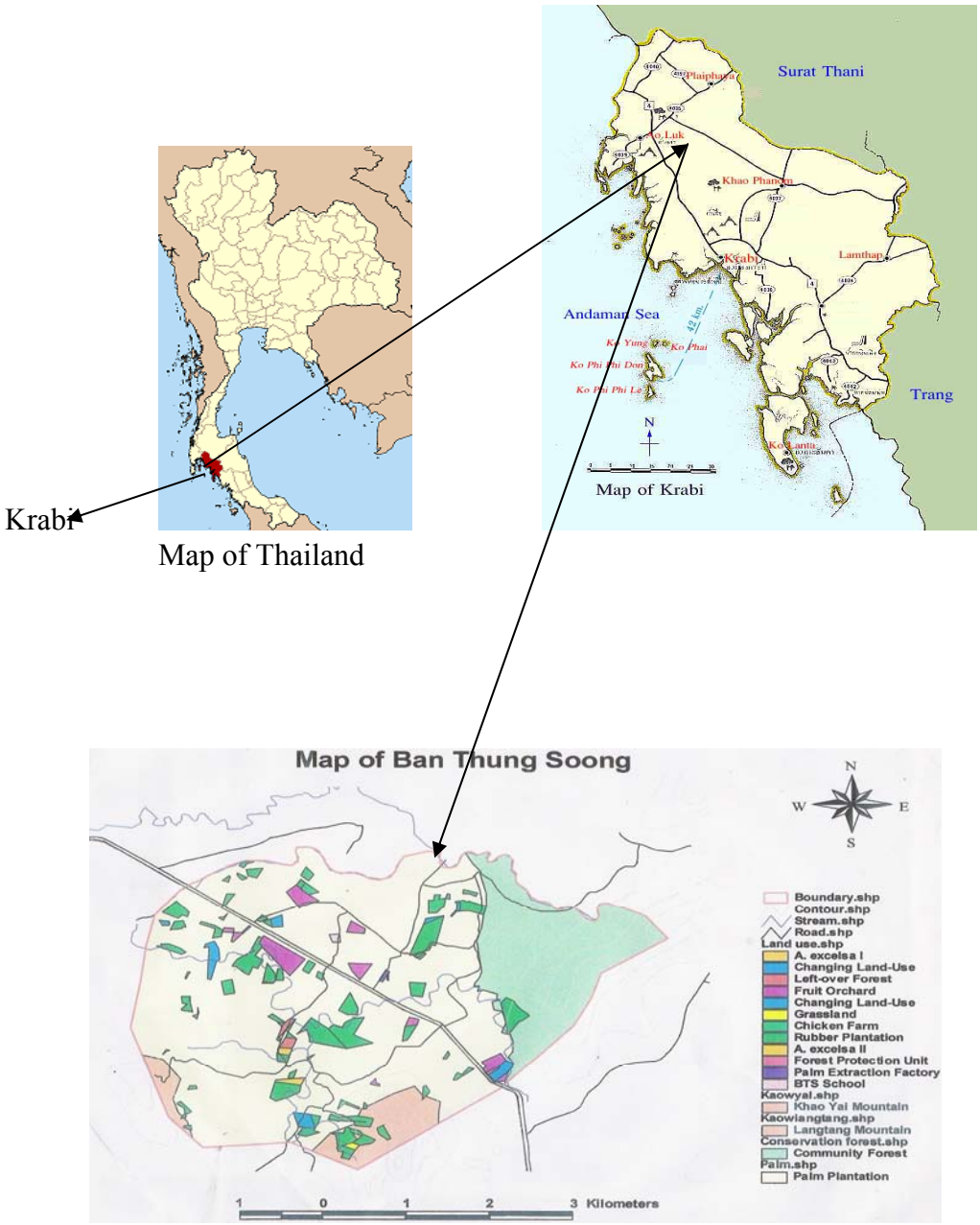

Figure 2 Map of the study area

Materials

In this research, a structured interview schedule was used for collecting quantitative data. It consists of 5 parts namely socio-demographic characteristics of the community, economic characteristics of the community, ethical beliefs, behavior towards forest, and community forest management.

For collection of qualitative data several in-depth interview with unstructured questions and group discussion were used as research materials. These two materials were used mainly to have in-depth information on what was going on in the community - who or what was involved, when and where things used to happen, how and why things occur.

Methods

1. Population and Sampling Techniques

Population of the study was the community of Ban Thung Soong, Krabi Province. The unit of analysis was households in Ban Thung Soong Community. The total number of samples was determined with the use of Yamane formula (Yamane, 1973):

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample size
N = Population size
e = Desire margin of error

The total number of household was 253. Using a margin of error of 5 per cent, the sample size was computed to be 155 respondents. The study used 155 respondents of both male and female, using simple random sampling technique.

2. Data Collection

Both primary and secondary data was collected depending on the objectives of the research.

2.1 Primary data collection

Before going to final data collection a field survey to the study area was conducted to gather some basic idea through participant observation, informal discussion with key persons of the community and relevant agencies. This information was used to form the interview schedule, sample selection, and planning for the final data collection. Both quantitative and qualitative data was collected.

2.1.1 Quantitative data

On the basis of field survey and the objective of the research an interview schedule with structured questions was prepared to interview the villagers. The interview schedule was prepared in English and then was translated in Thai language. The respondents were personally interviewed by the researcher in cooperation with a fourth year student of Department of Silviculture, Forestry Faculty, Kasetsart University. She was selected for her ability to speak in both English and Thai Language and also for having required technical knowledge to understand and interpret the questions to the respondents.

2.1.2 Qualitative data

Three in depth interviews with non-structured questions were conducted. In depth interview were taken with Phra Kru Suwimol Thammanukun, the highly respect monk of Wat Na Nua, adjacent to the village, Mr. Chatchai Khaosa-ard, the former village head and one of the most respected person of the community; Mr. Montri Khaosa-ard, the present village head and Chairman of the Community Forestry Committee.

Four group discussions had been conducted. Those were with a group of veteran people of the village, members of the community forestry committee, a group of five teachers including the headmaster of the BTS Primary School, and BTS Junior Andaman Youth Leadership Network (JALEADNET).

In depth interview and group discussions were conducted mainly to have an in-depth information on background of the village; history of community forestry; social, economic and cultural conditions of the village, development of environmental ethics in the village and some more detail information on community forest and ecotourism.

2.2 Secondary Data Collection

Secondary data was collected from literature review; BTS Community Office;Agricultural Technology Transfer Centre, Ban Thung Soong; ,Khao Yai Sub-district Office; Krabi National Resources and Environment Office;and The Meteorological Department, Ministry of Transport and Communications, Bangkok.

3. Data Analysis

3.1 Data measurement

Data on socio-demographic and economic characteristics were measured by percentage of responses and real numbers.

For measuring data on ethical beliefs and values a 3 point scale was used ranging from 0 to 1. Generally 1 was used for “yes” or affirmative response and 0 for

"no" or negative response. But for negative responses which contains positive values 1 was assigned for "no" and 0 was assigned for "yes". The interval of the scale was determined using the equation

$$\text{Interval} = \frac{\text{Highest score} - \text{Lowest score}}{\text{Range}}$$

$$= \frac{1 - 0}{3}$$

$$= 0.33$$

Then the scale was

0 – 0.33 = Low
0.34 – 0.67 = Medium
0.68 – 1 = High

For measuring data on development of ethics, behavior and community forest management a 5 point scale of 1, 2, 3, 4, and 5 was used to determine the criteria more or less like, least strongly, less strongly, moderately, strongly, and very strongly respectively. The interval of the scale was determined using the following equation.

$$\text{Interval} = \frac{\text{Highest score} - \text{Lowest score}}{\text{Range}}$$

$$= \frac{5 - 1}{5}$$

$$= 0.80$$

Then the scale was

1.00 -1.80 = Least strongly
1.81 – 2.60 = Less strongly,
2.61 – 3.40 = Moderately,
3.41 – 4.20 = Strongly, and
4.21 – 5.00 = Very strongly.

3.1.1 Individual moral standing

As the negative answers contained affirmative beliefs 1 was assigned for "no" and 0 was assigned for "yes". Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale was 0 - 0.66 = low, 0.67 – 1.33 = medium, and 1.34 – 2.00 = high

3.1.2 Moral standing of species or ecosystem

In most cases 1 was assigned for “yes” and 0 was assigned for “no”. In one case 1 was assigned for “no” and 0 was assigned for “yes” as the negative answers contained affirmative beliefs. Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. The computed scale was 0 – 2.00 = low, 2.01 – 4.00 = medium, and 4.10 – 6.00 = high

3.1.3 Intrinsic value

Here, 1 was assigned for “yes” and 0 was assigned for “no”. Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale was 0 – 1.33 = low, 1.34 – 2.66 = medium, and 2.67 – 4.00 = high

3.1.4 Responsibility for future generation

For the measurement, 1 was assigned for “yes” and 0 was assigned for “no”. Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale: 0 - 0.66 = low, 0.67 – 1.33 = medium, and 1.34 – 2.00 = high.

3.1.5 Reverence for life

In this case, 1 was assigned for “yes” and 0 was assigned for “no”. Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. There was no computed scale.

3.1.6 Sentience

In one case, 1 was assigned for “yes” and 0 was assigned for “no” and for another case 1 was assigned for “no” and 0 was assigned for “yes” as the negative answers contained affirmative beliefs. Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale: 0 - 0.66 = low, 0.67 – 1.33 = medium, and 1.34 – 2.00 = high.

3.1.7 Duties in conflicting interest

In most cases, 1 was assigned for “yes” and 0 was assigned for “no”. In two cases, 1 was assigned for “no” and 0 was assigned for “yes” as the negative answers contained affirmative beliefs. Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale was 0 – 2.00 = low, 2.01 – 4.00 = medium, and 4.10 – 6.00 = high.

3.1.8 Ecological interdependence

Here, 1 was assigned for “yes” and 0 was assigned for “no”. Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale was 0 – 1.00 = low, 1.01 – 2.00 = medium, and 2.10 – 3.00 = high

3.1.9 Religion

Here also, 1 was assigned for “yes” and 0 was assigned for “no”. Then a three point scale was used to measure the data where, 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale: 0 - 0.66 = low, 0.67 – 1.33 = medium, and 1.34 – 2.00 = high.

3.1.10 Factors affecting the development of ethics

Here, a five point scale was used to measure data. The scale was for 1.00 -1.80 = least strongly, 1.81 – 2.60 = less strongly, 2.61 – 3.40 = moderately, 3.41 – 4.20 = strongly, and 4.21 – 5.00 = very strongly. The computed scale was for 10.00 -18.00 = least strongly, 18.01 – 26.00 = less strongly, 26.01 – 34.00 = moderately, 34.01 – 42.00 = strongly, and 42.01 – 50.00 = very strongly.

3.1.11 Behavior towards the community forest

A five point scale was used which indicated 1.00 -1.80 = not at all, 1.81 – 2.60 = occasionally, 2.61 – 3.40 = moderately, 3.41 – 4.20 = strongly, and 4.21 – 5.00 = very strongly. Computed scale indicated 7.00 – 12.60 = not at all, 12.61 – 18.21 = occasionally, 18.22 – 23.82 = moderately, 23.83 – 29.43 = strongly, and 29.44 – 35.00 = very strongly.

3.1.12 Participation in problem identification, planning and decision making

A five point scale was used here to indicate 1.00 -1.80 = not at all, 1.81 – 2.60 = occasionally, 2.61 – 3.40 = moderately, 3.41 – 4.20 = actively, and 4.21 – 5.00 = very actively. Computed scale indicated 4.00 – 7.20 = not at all, 7.21– 10.41 = occasionally, 10.42 – 13.62 = moderately, 13.63 – 16.83 = actively, and 16.84 – 20.00 = very actively.

3.1.13 Participation in implementation and follow up

A five point scale was used here to indicate 1.00 -1.80 = not at all, 1.81 – 2.60 = less actively, 2.61 – 3.40 = moderately, 3.41 – 4.20 = actively, and 4.21 – 5.00 = very actively. Computed scale indicated 4.00 – 7.20 = not at all, 7.21– 10.41 = less actively, 10.42 – 13.62 = moderately, 13.63 – 16.83 = actively, and 16.84 – 20.00 = very actively.

3.1.14 Protection of the forest

A five point scale was used here to indicate 1.00 -1.80 = highly common, 1.81 – 2.60 = common, 2.61 – 3.40 = moderately, 3.41 – 4.20 = slightly common, and 4.21 – 5.00 = not at all. Computed scale indicated7.00 – 12.60 = highly common, 12.61 – 18.21 = common, 18.22 – 23.82 = moderately, 23.83 – 29.43 = slightly common, and 29.44 – 35.00 = not at all)

3.1.15 Sustainability of the forest

A five point scale was also used here to indicate 1.00 -1.80 = not at all, 1.81 – 2.60 = slightly increased, 2.61 – 3.40 = moderately increased, 3.41 – 4.20 = increased, and 4.21 – 5.00 = highly increased. Computed scale indicated 10.00 -18.00 = not at all, 18.01 – 26.00 = slightly increased, 26.01 – 34.00 = moderately increased, 34.01 – 42.00 = increased, and 42.01 – 50.00 = highly increased.

3.2 Uses of statistics

Data was analyzed in both quantitative and qualitative manner. Appropriate statistics was used to process and analyze the quantitative data. Qualitative data was analyzed by content analysis of the information.

RESULTS AND DISCUSSIONS

The results have been divided into two parts namely descriptive part and quantitative part. Descriptive part was based on the in-depth interviews and group discussions and the quantitative part was based on the interview schedule.

Part 1: Descriptive Results

1. Background of the Village

Before the establishment of the present administrative system, Ban Thung Soong was under Kwaeng Pak Lao. Krabi was then under Nakhorn Srithammarat province and divided into four Kwaengs. Pak Lao (princess of the north) was administrative unit as well as a well renowned business center in those days. It was 5 km far from Ban Thung Soong Village (Personal communication with Dr. Suree Bhumibhamon, 19th February, 2005). During those days population of Ban Thung Soong was very low. In 100 years ago, there were only 6 families in the village. In 1935, there were 23 families in the village. Most of the area of the village was covered by forest. Then shifting cultivation was main farming practice for the people of the village. They used to grow upland rice, maize, pumpkin, gourd, long bean, taro, soybean and sago palm for their livelihoods. Another important product was resin. People used to collect resin from *Dipterocarpus alatus* trees and used it for making lacquers and preparing torch. They used to go to Pak Lao to sell their product and buy their necessary things.

With the increase of population to establish their settlement the forest of the village was reducing. People started to develop mixed fruit orchard. But it was not so profitable. As a result just after the introduction of rubber and oil palm in the village, these two crops rapidly spread throughout the farming lands of the village.

At present there are 253 families in the village. Out of this, only 2 families are Christian and all of the rest are Buddhist. The total population of the village is 1071 out of which 541 are male and 530 are female. There were no illiterate people in the village and there are only 5 landless families in the village.

2. History of the Community Forest

During the 1960s, motivated by the principles of industrialized society when people of the world was running behind individual material wealth then the people of a small village of southern Thailand , Ban Thung Soong, was thinking some thing different. With the view that forest is “resource” and a source of material gain, destruction of forest was started to gain momentum throughout the world in this period. At the same period, the people of Ban Thung Soong was deciding to protect forest, the government owned reserved forest viewing it as “a part of nature”.

There was a reserved forest of 7,300 rai (1168 ha) in the village of which 4300 rai (688 ha) was mountain forest and 3000 rai (480 ha) was lowland forest. The name of the forest was "Kao Mai Kaew Kuan Ying Wua Reserved Forest". It includes two adjacent forest areas, namely "Kao Mai Kaew" and "Kuan Ying Wua" Forest. The meaning of "Mai Kaew" is *Murraya paniculata* tree, "Kao" means upland. That is the upland forest was rich in *Murraya paniculata* trees. "Wua" means wild bulls and "Ying" means shooting. The lowland forest was a place for hunting wild bulls. The forest was also very rich in *Dipterocarp alatus* trees and every where in the village there were big *Dipterocarp* trees. People used to practice shifting cultivation in lowland forest and also used to collect minor forest products from the forest. The crops in shifting cultivation were mainly upland rice, pumpkin, long bean, sweet potatoes, corn, rattan and gourd.

In 1960, the tremendous disaster, the "Laem Ta Lum Pook" storm damaged the forest severely. Most of the big *Dipterocarp* trees and other valuable trees throughout the forest were felt down by that severe storm. Royal Forest Department gave concession to "Chiang Saen Saw Mill" for logging these uprooted trees. When the company came to the village for logging the people of the village were very delighted and amused to see the elephants and other logging machineries used in the operation. They villagers started to help them in logging activities. High wages for labour also encouraged them to help the company. But after finishing the logging of felling trees the company started to cut standing big *Dipterocarp* trees in the name of logging of felt down trees with the support of some officer incharge. The company continued that operation altogether for more than three years and the forest was depleting of valuable standing trees. That was a period of destruction. The people of the village soon understood what was going on. They felt that they are loosing their valuable natural resource. Then they organized to resist the illegal activities of the company to save the natural forest of their village. In the face of their protest Forest Department terminated the concession of the company in the village.

The villagers started to think how to improve the condition of their forest. The then village Chief Mr. Chatchai Khaosaard organized the villagers to stop shifting cultivation in the forest. They unanimously decided to stop the shifting cultivation and restoration of forest. Additionally, they started to protect illegal tree cutting by the people of adjacent villages.

In 1985, the government gave permission to a private company to convert this secondary forest into oil palm plantation. The villagers became united against this decision. With the leadership of Mr Chatchai Khaosa-ard the villagers blocked the helicopter of the private company when they first came to visit the forest.They prepared a memorandum and collected 400 signatures against that decision. The villagers then collected money (contribution) to send their leader to Bangkok to hand over this memorandum to Prime Minister General Prem Tinnasulanonz. The then village Deputy Chiefs Mr. Montri Khaosaard and Mr. Ardoon Khaosa-ard went to Bangkok and met Mr. Wasana Boonpantanti, the member of parliament elected from Krabi Province, at his resident in Bangkok and discussed the issue. Mr. Wasana Boonpantanti highly appreciated the decision of the villagers and managed to send the

memorandum to the Prime Minister. The government then cancelled the program of converting the forest into oil palm plantation.

In 1997, the Andaman Institute, Kasetsart University Krabi Campus, Royal Forest Department, Krabi Provincial Office and Kasetsart University Alumni Association in Krabi jointly organized a Workshop on Ecotourism. Representatives from 150 villages from Krabi Province joined in that workshop. The workshop lead to connect the village with the University and the university came forward to help the village to protect the forest and development of community based ecotourism. With the help of the university the village prepared a proposal for managing the forest by the community and submitted it to the Royal Forest Department. In 1998, the village got the official approval. From then the community is managing the forest for restoration activities and development of community based ecotourism. With in a short period, wise management made it familiar as a leading community forest in the region. In 2000, the community forest received the award, Tong Pra Rajatan Pitak Pa Pua Rakrsa (The Royal White Protection Flag). In 2001, Her Majesty the Queen Sirikit and Crown Prince of Thailand visited the community to salute the people for conservation of their forest.

3. Social Conditions

There is very good social and inter personal relationship among the villagers. There are 253 families in the village out of which 30 percent are migrated to this village. The last migrant family came here 15 years ago. Most of the migrants came from Nakhorn Srithammarat, Surat Thani, Trang and Pattalung Provinces that are also situated in Southern Thailand and thus from more or less similar social and cultural conditions. Also few migrated families came from other parts of Thailand. This migration did not create any social problem because of the openness of the permanent residents to receive outsiders and good cooperation; strict and fair social regulations; more or less similar socio-cultural background and religion. Most of the migrated families have made marital relationship with the permanent residents and they have been involved in village development activities. Five members of village committee are from migrant family. The chairman of the women committee is also from migrant family from the Central Region of Thailand. Thus the community has become a homogeneous community.

3.1 Social Organizations

3.1.1 Village Committee

It is a 15 member committee. Chairman and other 10 members are elected by the villagers. Other 4 members are selected by the chairman. The duration of the committee is 4 years. The main functions of the committee are coordination of development activities with government and other sectors; operating the village development activities; coordination of the activities of other committees in the village; ensuring social justice; ensuring social security and facilitating all type of social activities. The chairman of the committee attends the district committee

meeting held in first office day of the month. In this meeting the chairman informs the district committee about the present situation of the development activities and needs and problems of the village. The committee reviews the ongoing activities and formulates new development activities for the villages of the district. Then the village committee arranges a meeting of the 15 members on 8th or 9th day of the month and reviews the whole situation of the previous month and prepares a draft plan of activities for the next month. On the 10th day of the month the village committee arrange a meeting where representative from every house of the village attends. Each of the participants of the meeting has the opportunity to give their opinion on the activities. It is the forum for decision making, planning, implementation and follow up of all type of activities of the village.

3.1.2 Community Forestry Committee

There are 15 members in this committee. Before forming this committee the whole village was divided into eleven sections. Each section elects 1 representative from their sections to be the member of the community forestry committee. Then the 11 members select the chairman from among themselves. The chairman selects other 4 members of the committee. All the members of the committee are life time member. If somebody dies then the related section of the village elects the new representative. Each member of the committee has the power to fire and they are registered to the govt. for using arms. The main functions of the committee are coordination with Royal Forest Department and other organizations; ensuring the sustainable management of the community forest; planning, implementation, and follow up of all type of forestry activities; creating environmental awareness; and other conservation and environmental development activities. This committee arranges a meeting on the 10th of each month just after the village committee meeting at the same venue where representative from every house of the village attends.. Each of the participants of the meeting has the opportunity to give their opinion on the community forestry activities. It is also the forum for decision making, planning, implementation and follows up of all type of community forestry activities in the village.

3.1.3 Women Committee

There are 11 members of this committee. The main functions of this committee are cooperating with state and private sectors; preserving the traditional cultures; creating environmental awareness to the women and children; supporting the ageing groups; supporting children activities; promoting good health program through physical exercise; training activities on product development; supporting social activities and generating fund for women welfare. Every woman of the village is involved with this committee. The committee generates fund by preparing foods, sweets and beverage products and selling fertilizer. They use this money for the welfare of the women of the village. They provide credit to the woman who wants to develop self reliance income generation activities. The women committee supports the ceremonies and the festivals in the village with flower, food and decorations.

3.1.4 Rice Bank Management Committee

It is a 6 member committee. The village has received 100,000 Baht from His Majesty the King to create a rice bank. This committee handles the fund. They buy cheap but good quality rice from wholesale market and bring it to the village. Every house of the village collects their rice from this committee. The price is higher then that of they buy from the wholesale market but cheaper than the local market. The margin is contributing to the increase of the fund. The fund has been increased to 150,000 Baht in 2006.

3.1.5 The Village Fund Management Committee

It is an 18 member committee. 143 family of the village has joined in this saving scheme. Each family of the village saves 50 or 100 Baht each month. This committee collects money from the villagers and deposits it to the bank with a joint account. The villagers get the bank interest. Villagers can take loan from this fund if they have immediate need.

3.1.6 Funeral Committee

This is a 17 members committee. If somebody dies, this committee collects contributions from the whole village. Then the committee arranges the cremation of the dead and other related rituals like arrangement of prayer by monks, funeral dinners, etc. The whole village participates in the cremation and related rituals.

3.1.7 Public Health Volunteers Committee

It is a 6 member committee. This committee organizes the volunteers for improvement of living environment of the village which is related to public health.

3.1.8 The Or-Por-Por Committee

It is a 14 member committee. This committee ensured the protection of the village if there any possibility to be attacked by any outsider. It is the government policy to stop the expansion of communism. The committee has arm-weapons. This group also helps in forest protection specially against illegal loggers and any influential groups.

3.1.9 Forest Protection Volunteer Committee

It is a 15 member committee. Their main function is to keep watch to the forest and ensure protection against all type of illegal activities. They also ensure protection against fire. There are 100 volunteers under this committee.

3.1.10 Village Police

There are 15 members in this committee. This committee mainly works to protect against the use or business of narcotics in the village. They also ensure security of the village.

3.1.11 BTS Junior Andaman Youth Leadership Network (JALEADNET)

The children of Ban Thung Soong have established BTS Junior Andaman Youth Leadership Network (JALEADNET). The main functions of this network are development of leadership qualities; development of knowledge on natural resources, social and environmental issues; transfer of knowledge and understanding to other children and people; and participation in social activities.

3.2 Education

There are no illiterate people in the village. In old days, the level of education was limited to elementary level. But recently people have become aware of higher education. There is a primary school in the village which was established in 1962. All the children of the village go to the primary school. After complementing primary education they go to Aulok or Thap Put for secondary school both of the school are 9 km far from the village. Then maximum of them go for vocational education. And the rest continue their higher studies in universities. There is a growing need to establish a secondary school in the village.

There are two ancient temples at the two adjacent villages, Wat Na Nua and Wat Prai Son. Both temples were constructed during the period of King Rama VI. These two temples are the source of religious teachings as well as indigenous knowledge of the people of the village.

3.3 Living amenities

Every house got electricity connection. People use electricity and containarized natural gas for cooking. Toilet facilities are available in every house. Water supply system has been extended to 39 houses. Khao Yai subdistrict has recently adopted a 500,000 Bath project for developing water supply system in each house of the village and restoration of the canal of the village. An old lady Ki Lekkham has donated 0.5 ha land for the establishment of the water supply station. There are seven parataxonomists in the village and many people rely on them for their treatment. Parataxonomists are united and have established a parataxonomist hub in the village. There is a midwife in the village trained by Public Health Department. Modern medical facilities are also available in the Public Health Centre located at the adjacent Na Nua village. Ban Thung Soong Community received the best community of Krabi Province award of Ministry of Public Health in 1997. There are only 5 landless families in the village. Food availability of the village is well secured. Everyone of the village have the food purchasing capacity. Moreover, the village has got 100,000 Bath from His Majesty King of Thailand for creating rice fund.

4. Economic Conditions

The major economic activities of Ban Thung Soong village can be divided into two main categories: farm activities and non-farm activities. Most of the families are involved more than one occupation.

4.1 Farm activities

Major source of economic activity of the village are oil palm and rubber plantation. Most of the villagers have either rubber or oil palm plantation or both. Both of these two are very profitable and have provided the village a strong economic base. Mixed fruit orchard is another important source of income. Most of the villagers have very rich home garden in their house. They grow timber trees, fruit trees, bamboos, medicinal plants and vegetables in these home gardens. They had developed their home garden not only for economic purpose but also to reduce pressure on the community forest.

4.2 Non- farm activities

The village is mostly dependent on farming and as it is profitable very few people go outside for seeking job. Up to now, only 20 persons had gone outside for job after completing university degree (Interview with Mr. Montri Khosaard, 12th May 2005). Multinational oil palm company Univanich is working in the village. It has generated employment opportunities for some young people in a small scale. Some people are involved in local business in the village.

4.3 Land use pattern

The total area of the village is 24,636 rai (3,941.76 ha). Out of this forest covers an area of 7,300 rai (1168 ha), farming area covers 12,580 rai (2012.80 ha), and others including household and home garden cover an area of 4756 rai (760.96 ha). Out of the farming area oil palm plantation covers the largest area of the village. It covers an area of 7,953 rai (1272.48 ha). The second largest land use for farming in the village is rubber plantation. It covers an area of 2,964 rai (474.24 ha). Before the initiation of rubber and oil palm plantation mixed fruit orchard was the main source of income in the village. But it has getting less and less priority day by day. Now mixed fruit orchard covers an area of 1078 rai (172.48 ha). People use a small area for agronomy and vegetable. It covers an area of 610 rai (97.6 ha). In the past days, there was cultivation of upland rice in shifting cultivation area of the forest. After prohibiting shifting cultivation, rice production is almost absent in the village except an area of 35 rai (5.6ha) scattered in different parts in the village (Agricultural Technology Transfer Centre, Ban Thung Soong 2005)

5. Cultural Conditions

'Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiment in artifacts; the essential core of culture consists of traditional (i.e. historically derived and selected) ideas and specially their attached values; culture systems may on the one hand, be considered as products of action, on the other as conditioning elements of further action'. (Kroeber and Kluckholm 1974, as cited in Mike Crang 1998). Culture, then is about the interaction of people as observed through social relations and material artifacts. It consists of behavioral pattern, knowledge and values which have been acquired and transmitted through generations. The essence of culture is contained in the value attached to traditional ideas.

The cultural root of the village is deeply embedded into the culture of Andaman Region which is typical to Southern Thailand. The first conclusive archaeological evidence of people (late Pleistocene epoch) in Thailand comes from the Lang Rongrian rockshelter site in Krabi, Southern Thailand (Anderson 1987). Southern Thailand has special environmental features. Part of the region is on a peninsula, with the Gulf of Siam on one side and the Andaman Sea on the other. In this monsoon climate rainfall is heavy and vegetation is proliferates (Donner 1978 as cited in Vichit-Vadakan 1987). Nature's great potential and wide range of choices, augmented by low population density prior to World War II, have made Southerners proud, fiercely independent, and self-reliant. Southerners are said to be legal-minded, to possess regional pride, and to abhor servitude (Saengduangkhae 1985 as cited in Vichit-Vadakan 1987). Their pride and group solidarity are well-known especially outside the South. Regionalism may be the basis upon which their political affiliations and groupings are based. Village egalitarianism, cooperation and solidarity are quite evident in the region (Vichit-Vadakan 1987).

Traditional lifestyles everywhere are in jeopardy through a wide range of causes Because of modern media and global trend of economic and cultural homogenization. The social behavior of young generation of the village is also changing gradually. The village is fully aware of this. It is not against new knowledge and information. But the village is taking care that the new generation would interpret this new knowledge and information on the basis of their traditional values and experiences and then accepts it in their social behavior (Interview with Mr. Chatchai Khaosa ard, 10th May 2005).

In recent years, the village arranged several traditional cultural functions including "Norah dance' and 'Rong Geng'. In old days norah dance and Rong Geng were highly popular in Andaman region. The origin of rong keng is Malaysia and the origion of norah dance is Java. With dance, the performers sing songs. These songs state their traditional knowledge on nature and relationship of human beings with nature. With cooperation of Dr. Suree Bhumibhamon the village invited Mr. Khsig who is famous for 'shadow play' and 'Norah dance'. Mr. Khsig arranged "shadow play'. He also provided valuable tips on 'Tum Tum' "Rong Geng' to the children of

the village. Young generation and children highly appreciated these programs (Group discussion with veteran people of the village, 15th October 2005).

The village observes all the festivals and rituals supported by religion and culture with due respect. Spiritual beliefs still has great influence on day to day activities. Indigenous knowledge has great influence on different activities including management of natural resources. There are seven parataxonomists in the village. They have established a parataxonomist hub for the development and transfer of knowledge on medicinal plants and indigenous treatments. People have good faith in their activities and a great majority of people still depends on parataxonomists for their treatment (Interview with Mr. Chatchai Khaosa-ard, 10th May 2005).

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6. Management of the Community Forest

After the initiation of community forestry activities forest department has very little involvement in the management of the forest. They provide training on community forest for the leaders and other villagers. Forest Department also monitors the development activities, if there is any, funded by the Royal Forest Department.

Protection and conservation of forest is the responsibility of the community. The community is managing the forest following a regulation prepared by them and approved by the forest department. For the proper management, the village has established a 15 member Community Forestry Committee. This committee plan, implement and monitor the forestry activities with active participation of the villagers.

7. Development of Ecotourism

The community has already drafted the Master Plan for community based ecotourism in the village with the support from Kasetsart University. After the initiation of the program very little development in ecotourism has been observed. Up to now with the help of Tourism Authority of Thailand a people centre has been constructed in the village. No furniture had been provided for the centre. Still there are many scopes to develop the centre. In the same project, 3 small trails were developed inside the forest. In addition, Tourism Authority of Thailand arranged a training course on traditional massage for 12 women of the village with trainers from Wat Po, Bangkok. But no heath care centre has been established the village (Interview with Mr. Montri Khosa-ard, 12th May 2005).

Ecotourism as profession had not developed yet in the community. Training courses are necessary for development of operational skill on tourism programs. Specially, training is necessary for the development of local products and for and to develop a group of tourist guide.

8. Development of Ethics in the Community

The development of environmental ethics in any society involves a long socio-cultural process. Core beliefs, behaviors, and values of a society evolve and develop over a long period of time, through generation to generation. The root of environmental ethics of the village is deeply embedded into the old traditional culture and it is developing through various social institution and social interaction. Through observation of people, and in depth interview with veteran individuals and groups, this research has identified the influential factors that have profound effects on the development and transmission of environmental ethics in the community.

8.1 Folk arts

Folk songs, traditional dance, folktales, folk plays are the reflection of the society, their beliefs, values and behavioral patterns. Most of these were derived from and linked with the forest, trees, animals, nature and man-nature relationship.

Lullabies are very popular in this community. Mothers sing this song to make their children sleep. They sing these songs and invites goddess Mae Sue to make their children sleep and take care of them. The moon, the sky, goddess, plants, animals and nature are the main subjects of these songs. There are various types of children rhymes and riddles prevailing in the village. Children sing these rhymes during playing and amusement among themselves. These songs and riddles are based on the beliefs on animals, plants, man, nature and supernatural things (Group interview with veteran people of the village, 15th October 2005). These types of folk beliefs about nature and natural phenomena form the child's attitude toward nature. As the child grows up, such sets of beliefs or predispositions develop into more complicated forms which are reflected in the relationship between adults and nature (Kriengkraipetch, 1987).

In the old days, Norah dance and Rong Geng were very popular in the village. The subject matters of these dances were forest, trees, plants and other natural phenomena. Krabi Province is famous for shadow play. In shadow play the jokers Teng, Kaew, Noonui, Samor and Kuan introduce and describe different social, political, economic and environmental issues in joking and amusing way. These traditional dances and plays had very important roles in constructing environmental beliefs and values (Group discussion with veteran people of the village, 15th October 2005).

8.2 Rituals

In the old days the society was full of rituals and ceremonies. Still today people of the village follow almost all of these rituals. These rituals are reflections of communal beliefs and activists which are generally not easily separable from the daily life of the community.

In old days, when a young man got married, he had to build a new house. All the villagers helped them to construct the new house. They provided the new couples woods, bamboos and other materials to construct the house. They also helped to construction works. After completing the house they used to plant trees around the house Villagers provided the seedlings and help to plant them. Every house used to bring gifts for the new couples according to their abilities. The gifts were mainly cows, pigs, chickens, banana and other fruits. It helped the young couple to realize that they are an inseparable part of the community and they should have to cooperate with other members of the community. It encourages them to live a life with communal harmony. In present days, young people get married when they are economically solvent. Still the villagers go to help the new couples with various types of gifts (Interview with Mr. Chatchai Khaosaard, 10th May, 2005).

There is another important ritual related to house building. When they put the first pole of the new house they arranged a ceremony where all the villagers attend. They place two small pieces of silver and gold to the whole where the first pole would be set up. Then they wrap 5 banana leaves with attached banana, one sugarcane, one germinated coconut, paddy stick with white clothes and tie it with white and red ribbon. They hang it on the top of the pole. Then they offer prayer to Naga to ensure peace, prosperity and security of the new house. After construction of the house they construct another small house, the house of spirit (Sala Pra Bhumi). After completing the construction of house of spirit they decorate the spirit house with flags, 2 flower vase, two candle holder, one incense holder, 2 pairs of doll, 1 pair of replica of elephant, one pair of replica of horse, red and white color ribbon, 3 leaves of gold, silver and copper, pop rice, 4 eggs, banana, coconut, cooked rice, arenga nut, butter, and condensed milk. Then they ignite incense and candle and start prayer to the God of spirit house. In this ceremony, they invites all the villagers to take part in the pray and slaughter pigs and chicken to entertain them. The villager prays to the God of spirit offering those things which have a deep association of love and respect with them. Most of these are collected from the nature such as plants, leaves, fruits, replica of animals, etc (Group discussion with veteran people of the village, 15th October, 2005).

The village observes the Loi Krathong festival with great festivity. The full moon night of the eleventh and twelfth lunar months, i.e. in the later part of October or November, are the days of Loi Krathong. Loi is “to float” and the Krathong is the “leaf cup” made of banana leaf. In this banana leaf cup people put betel leaf, betel nut, a small coin, a candle holder and an incense holder. They put a candle and incense and ignite it. Then they float the cup in the river. The Loi Krathong is the act of remission to the Goddess Mae Kong Ka, the mother of water. Kong Ka is the same word as the Indian “Ganga” or “Ganges”, but in Siamese, it means water in general. The belief behind this ritual is that in spite of the Goddess bountiful gift of water to man, he sometimes has polluted her water. So, he begs the pardon of the Goddess this way (Group interview with veteran people of the village, 15th October, 2005)..

When there is a lunar or solar eclipse, the pregnant women of the village fasten a swing needle in the waistband of the lower garment, believing that this prevents the unborn child from having physical deformation (Group discussion with veteran people of the village, 15th October 2005).

There are many rituals existing in the village, such as, rituals related to new born baby, bathing, ploughing, cremation, songkran, Chuk Phra, ordination to Lord Buddha, ordination to different God and Goddess and so on. All of these rituals reflect the beliefs on nature and natural phenomena, religion and super natural things that had been constructed through ages to ages.

8.3 Local myths

The myths delineate how the world came to be (a cosmogony), what it is like (a cosmology), what people are capable or incapable of achieving (a moral anthropology) (Taylor 2003). Basis of myths are peoples' expectation and explanation of things from their imagination. They try to perceive and understand the physical world through myths.

The "creation of world" myth was very popular in the village in old days. Before the creation of mankind there was a big creeper on the earth surface which bears only one very big gourd When the gourd was ripen the shell broke and many human beings started to crawl out from the gourd. They varied in skin color, other physical features and in their ways of life, according to the sequence of their coming out from the gourd. But all of them came from the same place. So every human being is equal whatever may be their race, color, and other physical feature (Group discussion with veteran people of the village, 15th October, 2005).

Another popular myth is the myth of Ma–Norah which is related to norah dance. Long ago, there were seven sisters. All of them were kinnaree (half bird half woman). They were beautiful and very attractive. Ma-Norah was the youngest fo them and the most attractive one. Seven sisters used to come to swim in the Anodard Pond every day. By this time the prince of the kingdom came to know about these seven sisters and their beauty. He ordered to Pran Boon (the hunter of the kingdom) to capture these sister. One day, when they were swimming in the pond keeping their wings on the bank of the pond. Then Pran Boon arrived there. Other six sisters could manage to flee but Pran Boon capture the wings of Ma-Norah which she left on the bank of the pond. Ultimately she was captured and brought to the prince. Thus Ma-Norah lost her freedom and chance to enjoy the beauty of the natural world (Interview with Mr. Chatchai Khaosaard, 10th May 2005).

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Myth of Mae Phosop (rice goddess) was also very popular in the village. Mae Phosop was a very attractive young girl. One day she was badly treated by an old widow. She felt grieved and decided she would leave the human society. She then went to the deep forest out of rich of human beings. She started to stay with her friend, a fish in the pond of the forest. In her absence there was no production of rice and people were in severe food problem. So, they were trying to find and her back to

their society. One day the fish told her that she should go back because the Lord Buddha was going to come to the world in this world very soon. Lord Buddha would require her help to serve human beings. Then Mae Phosop returned to the human society to stay forever. But before coming back to the human society she asked for a promise that human beings would not misbehave with her and treat her with great respect. People were very happy with this news and they made the promise. Then she returned to them with the commitment that she will provide abundant rice for them (Group discussion with veteran people of the village, 15th October, 2005).

Like these, there are many myths in the village which are related to the nature, its creation, origin of natural resources, and interaction of human beings with nature and supernatural objects.

8.4 Spiritual beliefs

Thailand is a land of spiritual beliefs, i.e. beliefs on super natural and divine objects. In every occasion there is a relation with some spirits and people pay ordination to these spirits. The origin of these beliefs is traced to the attempt of human mind to cope with the crisis of every day life, mishaps, diseases, natural disasters and so on. Ban Thung Soong is not an exception. Spiritual beliefs have an enormous influence on the day to day activities of the community. Some of these are directly related to nature oriented beliefs which helps to create positive attitudes to nature.

Before entering the forest still many people say their prayers to Chao Pa (a powerful spirit guarding a particular forest area). They do it for begging forgiveness to trespass the forest and at the same time protection from any dangers inside the forest. They believe that the spirit called Theparak dwells in trees especially in big trees to protect them from destruction by men or other means. If some body cut a big tree he will get the curse of Theparak and would have face different types of dangers. So, people do not dare to cut big trees. If there is a great need to cut the tree they offer a prayer to Theparak and ask for forgiveness. If there is an exceptionally big and tall tree people will not cut it down. (Group discussion with veteran people of the village, 15th October 2005).

Sua Saming is a ghost having the form of a tiger. It can change its body form and shape. In the deep forest it usually appears in front of people in the form a man or woman. When people go near to it or pass by it then it suddenly change its form into tiger and kill people.

Phe pa is another ghost of forest. It tantalizes people inside the forest and misguides them to go in wrong path inside the forest. People losses their way inside the forest and can not go back to their home. So people are afraid of entering deep forest.

Phe plai is a lady ghost dwelling in the water. It has long hair and big eyes. Sometimes its big eyes can be seen in water from the bank of the river or canal. When people go to swim or bath in the water it makes them numbed and they sink down. People are afraid of it and abstain from polluting water and causing disturbance in watershed areas.

Po tree (*Ficus religiosa*) is a great source of religious spirit. Lord Buddha is known to mediate in a cool shade under a Po tree until achieving enlightenment. People pay great respect to this sacred tree. In every wat (temple) there are some Po trees (Interview with Mr. Chatchai Khaosa-ard, 10th May 2005).

There are many other trees which are related to spiritual beliefs. The Takian tree (*Hopea odorata*) is a very well-known one where a female spirit has her habitation. She is known as "Nang Takian" or Lady Takian. Lady Takian usually takes the form of a beauty maiden who sometimes makes a wailing and piercing sound when the tree, her abode, is felled. It is believed that the person who destroys her dwelling place will face serious consequences of calamities. Nang Tani is another female spirits who dwells in banana tree. This female scares people when they pass the tree alone (Group discussion with veteran people of the village, 15th October 2005).

8.5 Forefathers' environmental wisdom

The village is rich in indigenous knowledge on environment, forest and nature. In old days, people of the village never cut trees in watershed areas. They were fully aware of the hazards of soil erosion. They did not cut trees during the growing season when branches, leaves and flowers sprouts. In those days, people knew the medicinal values of trees and plants. They used these medicinal plants with great reliance to ensure sound health. Very few of them had to go to doctor for treatment. Hunting for food was common in the village that time as there were abundant forest and wildlife. But people used to hunt only when they needed it. They used to avoid hunting pregnant and young animals. They tried to hunt big one so that only one animal could meet their demand (Interview with Mr. Chatchai Khaosaard, 10th May 2005).

In old days, there was scarcity of drinking water. People would dig well for drinking water. They believed that if there is a termite hill in a place, there must have water underground. They also believed that if grasses of any place remain green most of the time of a year, there is availability of under ground water in that place. They used to ask their children not to catch fish during the hatching period and not to use poisonous things for catching fish (Interview with Mr. Chatchai Khaosaard, 10th May 2005).

8.6 Community spirit of the village

The community had united to protect their forest and environment. After the severe storm of 1960, when illegal felling was going on, the community unanimously came forward to protect their forest. Royal Forest Department stopped the logging activities due to their strong protest. Then the villager stopped their long practiced shifting cultivation in the forest. Their united activities had created a community spirit which encouraged them to fight against the government decision of converting their forest into rubber and oil palm plantation. Later on, they applied to the Royal Forest Department to have the right to manage their forest. After the establishment of the community forest they unitedly protected any attempt of illegal activities by outsiders. They formulated a regulation (appendix 2) and established a community forest management committee. They have a great respect to this regulation. They have deep faith on the leaders of the committee. Regular activities of the committee involving people have created a sound environment to develop environmental thinking in the village (Group discussion with veteran people of the village, 15th October 2005).

8.7 School education

There is a primary school in the village established in 1962. It is the place for starting formal education for the villagers. In 2005, there were 5 teachers and 64 students in the school. The school authority has their own vision and mission to teach the kindergarten student. But after kindergarten they have to follow text books supplied by the government. Government suggests each school to develop a text book by the teachers of the school which will bear the text regarding the village. The school is now preparing this text book with cooperation with the villagers.

Ban Thung Soong primary school is fully aware of the community spirit of environmental conservation. There is an article in the BTS Community Forestry Regulation that BTS villagers should cooperate with school in transferring the ecological knowledge of BTS Community Forest to the youth. BTS primary school and the villagers are cooperating to form and develop environmental thinking to the school children (Group discussion with BTS Community Forestry Committee, 29th September, 2004).

There is a standard text in each class which includes several sections which are related to forest, trees, wild animals, utilization and conservation of forest. The teachers teach these sections with great importance. They realize that these texts are not sufficient to give a clear idea on indigenous knowledge and to create moral responsibility on environmental issues. To cover these deficiencies the school has developed various extra curriculum activities. First of all, the school has made its campus green. Every blank place has been planted with different species of timber, fruit and flower bearing trees. Students participate of all activities of planting and taking care of trees. Thus they practically learn how to plant trees and take care of them. The students become familiar with all of the species, their utilities and role on environment. Every day before starting the classes, there is an half an hour session on

discussion on selected topics from daily newspaper. Students actively participate in this session. This is very useful for creating awareness of children on current social, political and environmental issues (Group discussion with the teachers of BTS Primary School, 4th July, 2005).

For better understanding of nature and forest; relationships of plants, animals, soil, water and other non living things; and ecological functions of the forest the teachers take the students to BTS community forest 3 or 4 times a year. After returning from the forest the students are asked to draw pictures and write essays on what they have seen and learnt in the forest. They spend several days on drawing pictures and interpreting their thinking on they have learnt from the trip of the forest (appendix 3-7, one of the best drawing series drawn by a student of the school). The school realized that these activities are very important to create environmental values and beliefs to the children so the put great importance in this activities. Besides this the school also gives important on the indigenous knowledge and spiritual beliefs related to forest and environment. The school has its own activity to teach children about medicinal plants, other indigenous knowledge and spiritual beliefs. Yet the school takes cooperation of wat (temple) to strengthen the development of children on these sides. Respected monk Phra Kru Suwimol Thammanukun.of Wat Na Nua comes to the school to teach student about Buddhist Philosophy, man-nature relationship and indigenous knowledge. Children like him very much and attend a valuable session of one and half an hour with him. His teaching is very important and fruitful for the children (Group discussion with the teachers of BTS Primary School, 4th July, 2005).

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8.8 Learning from wat (temple)

In Thailand, early formal education used the temple as a school ground and the Buddhist monks as teachers. Temple and school could thus be one and the same, and dhamma (religion) could be considered a basic teaching and guide to lead day-to-day life. Thai temples have traditionally served other purposes also – from being a seat of education to providing information on health and the environment. (Sagarik, 1987). There are two ancient temples at the two adjacent villages of Ban Thung Soong, Wat Na Nua and Wat Prai Son. In Wat Prison, there are 0.5 ha natural forest which is the symbol of Buddhist Philosophy of man - nature relationship. Wat Na Nua has established a 5.6 ha plantation of trees of different species in temple premise. There are more than hundred monkeys, several species of reptiles and more than hundred wild fowls in this plantation.

Phra Kru Suwimol Thammanukun is the highly respect monk of Wat Na Nua. He presided over the opening ceremony of BTS Community Forest in 1998. According to Him Wat Na Nua is the centre of teaching of Buddhist Philosophy. Buddhism and nature always goes together. Man, plants, animals, organisms and other non-living things all are interrelated and interdependent to each other. Man is nothing different from other components of the nature. So he must have to live a life in harmony with nature. He should not disturb or destroy other component of nature. People who comes to this temple, this is main and first learning for them said Monk

Phra Kru Suwimol Thammanukun. This temple is also a centre of learning indigenous knowledge on health, medicine and other natural resources. People from Na Nua, Ban Thung Soong and other villages come here to pay offerings to Lord Buddha and to learn how to live a peaceful life in this earth. He believes that children should have to be trained according to the Buddhist Teaching. So, He visits the BTS Primary School every Friday and teaches students the Buddhist teachings. These teachings help the students to structure their ideas and beliefs to foster a healthy, sustainable interaction between human beings and the natural world (Interview with respected Monk Phra Kru Suwimol Thammanukun, 6th July, 2005).

8.9 Opportunities to share ideas with other group members of the community

There is very good inter personal relationship among the members of the community. They are unitedly conserving the forest and environment of the village. They attend the community forestry meetings regularly. Not only that they also actively participate in every social functions of the community. Here they exchange and share their ideas and views on every sphere of life including forest and environmental issues (Group discussion with veteran people of the village, 15th October 2005).

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8.10 Opportunities to share ideas with researchers and educational institutions

After the initiation of BTS Community Forest, it has become the centre of research for students and researchers. Within the last eight years different teams and individuals visited the forest for research purposes. A group of students from Forest Biology Department of Kasetsart University Forestry Faculty (KUFF) conducted biodiversity study in the forest. Research group from Department of Conservation of Kasetsart University Forestry Faculty (KUFF) visited the forest to prepare the draft Master Plan of BTS Community Forest for Ecotourism. It was supported by Krabi Provincial Administrative Organization. Another group of students from Department of Entomology of Kasetsart University Faculty of Agriculture (KUFA) visited the forest to study insect population in the forest. They identified two places for firefly which can be used for ecotourism. Another group of students from Pharmacy Department of Mahidul University conducted research on medicinal plants in this forest. Several groups of students from Viikki Tropical Resources Institute (VITRI), University of Helsinki, Finland have also visited this forest within these 8 years. All of these groups stayed in the village for several days. Students from Finland, Hong Kong, Bangladesh, Malaysia and Austria also conducted their thesis work in this community. In addition, 4 to 5 students from different universities of Thailand conduct their masters and doctoral research on this forest. Kasetsart University Forestry Faculty continuously supporting the development of the community forestry program in BTS (Personal communication with Dr. Suree Bhumibhamon, 29th March,2006).

The villagers are cooperative with all the researchers. They receive them with kinship and behave friendly with them. Help them in their activities and provide free accommodation in People Centre and for big groups in School. Sometimes they

arrange traditional cultural functions in honor of the research groups. They share their beliefs and ideas with researchers. In addition, they request the researcher to send their findings to them. They have collected almost all the research findings this way. Then the villagers share these findings among themselves. Moreover, they are getting constant support from Kasetsart University Forestry Faculty. Specially, they received great contribution from Dr. Suree Bhumibhamon, who visits the village in every alternative months and share his knowledge with people and children on conservation of forest and environment (Group discussion with veteran people of the village, 15th October 2005).

8.11 Children activities

The children of the village have established BTS Junior Andaman Youth Leadership Network (JALEADNET). It is a network affiliated with Andaman Youth Leadership Network of Andaman Institute, Krabi Campus, Kasetsart University. The children of the village are very proud of that the Andaman Youth Leadership Network has formulated their regulation on education, the Andaman Youth BTS Regulation on Education 2000 during their seven day camping in Ban Thung Soong in 2000. Andaman youths have evaluated their natural resources, cultural heritages, socio-economic and environmental condition and their potentials in two regulations, Andaman Youth Regulation 1988 (appendix 8) and Andaman Youth BTS Regulation on Education 2000 (appendix 9). In addition, they have expressed their expectation in these two regulations on how would the government and non–government organizations manage their natural social, cultural and economic resources. At the same time, the youths have recognized their own responsibilities on these issues in these two regulations. Before every meeting of the BTS Junior Andaman Youth Leadership Network, the children read these two regulations to remind and upkeep their own responsibilities. This network have helped them a lot to get information on current issues and to generate environmental and social consciousness among them. In 2005, they had arranged a dialogue with village and community forestry committee leaders. In that dialogue they expressed their thanks to the leaders for managing their natural resources properly and at the same time they had expressed their expectation to the leaders about their future forest and other natural resources. From this dialogue they have got valuable suggestions from the leaders which would enrich their thinking on forest and environment (Group discussion with BTS Junior Andaman Youth Leadership Network, 12th August 2005).

They children recognized the contribution of Dr. Suree Bhumibhamon, the founder of Andaman Youth Leadership Network. He visits the village every alternative month and spent a lot of time with children. He had arranged several training programs and seminars on environment for the children. He also arranged several drawing competitions on nature and natural resources for them. All of these had helped a lot to develop their thinking on conservation of forest and environment (Group discussion with BTS Junior Andaman Youth Leadership Network, 12th August 2005).

The children felt that their parents had very important role in developing their environmental thinking. They taught them to be compassionate to animals, not to destroy trees and other plants and keeping the environment clean. The school had also very important role in creating and developing their beliefs and values on nature and environment. Respected monk Phra Kru Suwimol Thammanukun is very popular to the children. They liked His teachings very much and it helped to construct their religious beliefs as well as responsibility to the nature (Group discussion with BTS Junior Andaman Youth Leadership Network, 12th August 2005). They also recognized that their traditional culture, specially lullabies, game songs had great influence on their thinking of nature and its components (Group discussion with BTS Junior Andaman Youth Leadership Network, 12th August, 2005).

The children are proud of their forest. Many people come to their village to see the forest and for research purposes. No other village around them has got this type of fame. So, they feel proud of their ancestors who are managing their forest with fame and dignity (Group discussion with BTS Junior Andaman Youth Leadership Network, 12th August 2005).

Ban Thung Soong is an effective and successful community. It possesses very good communal harmony and integrity. It has supported its environmental beliefs and values and transmitted it to the new generation.

Part 2: Quantitative Results

1. Socio-Demographic Characteristics

The socio-demographic characteristics of the respondents can be described by status in household, age, gender, marital status, religion, household size, educational attainment, occupation, and length of residence. Table 1 has been summarized the socio-demographic characteristics of the respondents and Table 2 has been summarized the characteristics of the household.

1.1 Status in household

Majority of the respondents was parent. 94.2 percent (146) respondent was parent while 5.8 percent (9) was son or daughter of the family.

1.2 Age

The age of respondents ranged from 16 years to 84 years with an average of 47 years. The majority of the respondents (47.1%) were from young group (18-44 years old). Then, 31.6 percent respondent was from middle age category (45-60 years old) and 20.6 percent respondent was from old group (above 60years). Only 0.6 percent (01) respondent was under 18 year old.

1.3 Gender

Male-female ratio of respondents was 6: 4. Male respondent was 60 percent (93) whereas female respondent was 40 percent (62). Respondent from the household was selected on the basis of the presence in the house during interview and opinion of the family members.

1.4 Marital status

Majority of the respondent, that is, 90.3 percent was married. Unmarried respondent was of 5.2 percent while 4.5 percent was divorced.

1.5 Religion

The community is almost a Buddhist community having only four Christian families other than Buddhist. As a consequence, 98.7 percent (153) respondent was Buddhist and 1.3 (2) percent respondents was Christian.

1.6 Educational attainment

Majority of the respondent educational background was of elementary level. This largest group forms with 70.3 percent of the respondents. Then 11.0 percent respondent was from secondary level 1 and 9.7 percent was from secondary level 2. A small number of respondents were with vocational (5.2 %) and university (3.9%) background.

1.7 Length of resident ship in the village

Among the respondents, 80.6 per cent was permanent resident while 19.4 percent was immigrant in the village. The last of them came 15 years ago and first one came 38 years ago. Among them, 10.00 per cent came within 15 to 20 years, 76.67 percent came within 21 to 30 years and the rest 13.33 percent came with in 31 to 38 years ago.

1.8 Respondents' household size and age class distribution

The average of the respondent household size was 4 with the range 1 to 9. Household consisting of 1-2 members was 20 per cent (30). Household consisting of 3-4 members were 55.5 percent (86). Again household consisting of 5-6 members was 21.3 percent (33). Then household consisting of 7-8 members was 2.6 percent (04). And then household consisting of 9-10 members was 0.6 percent (1). The community consists of both single-parent family and nuclear family.

Total household member of 0-5 age class was 5.35 percent. Total household member of 6-17 years was 20.51 percent, of 18-44 years was 42.41 percent, and of 45-60 years was 21.21 percent. Total household member above 60 years old was 10.52 percent. And then, the total male household member was 51.72 percent (300) while total female household member was 48.28 (280).

Table 1 Socio-demographic characteristics of the respondents

(n = 155)

Characteristics	Number	Percent
Status in household		
Parents	146	94.2
Son or daughter	09	5.8
Respondents age(years old)		
17 years and below	01	0.6
18 - 44	73	47.1
45 - 60	49	31.6
61 and above	32	20.6
Mean = 46.63 Standard deviation = 14.72		
Range = 16 – 84		
Gender		
Male	93	60.0
Female	62	40.0
Marital status		
Married	140	90.3
Unmarried	08	5.2
Divorced	07	4.5
Religion		
Buddhist	153	98.7
Christian	02	1.3
Educational attainment		
Elementary	109	70.3
Secondary level 1	17	11.0
Secondary level 2	11	9.7
Vocational	08	5.2
University	06	3.9
Resident ship in the village		
Permanent	125	80.6
Immigrant	30	19.4
Length of immigration		
10 – 20	03	10.00
21 – 30	23	76.67
31 – 40	04	13.33
Mean = 26.36 Standard deviation = 4.57		
Range = 15-38		

Table 2 Socio-demographic characteristics of respondents household

(n = 155)

Characteristics	Number	Percent
Respondents household size		
1-2 member	31	20.0
3-4member	86	55.5
5-6 member	33	21.3
7-8 member	04	2.6
9-10member	01	0.6
Mean = 3.74 Standard deviation = 1.35		
Range = 1-9		
Age class distribution of household members		
0-5 years male	16	2.76
0-5 years female	15	2.59
0-5 years total	31	5.35
6-17 years male	70	12.07
6-17 years female	49	8.44
6-17 years total	119	20.51
18-44 years male	116	20.00
18-44 years male	130	22.41
18-44 years total	246	42.41
45-60 years male	62	10.69
45-60 years female	61	10.52
45-60 years total	123	21.21
Over 60 years male	36	6.21
Over 60 years female	25	4.31
Over 60 years total	61	10.52
Male total	300	51.72
Female total	280	48.28
Educational attainment of family members		
No education	17*	2.93*
Elementary	370	63.79
Secondary level 1	69	11.90
Secondary level 2	66	11.38
Vocational	37	6.38
University	21	3.62

* Children below school going age.

1.9 Educational attainment of the respondent household

Children below school going age were 2.93 percent. Members having elementary education were 63.79 percent. Members having education of secondary level 1 were 11.90 percent. Members having secondary level 2 were 11.38 percent. Members having vocational education were 6.38 percent and members having university education was 3.62 percent (21). The majority of the members have education of elementary level and higher studies were limited.

2. Economic Characteristics

Respondents economic characteristics had been described by respondents' occupation and household income; possession of resources; and dependency on resources.

2.1 Respondents' Occupation and Household Income

Most of the respondents' (72.3%) occupation was farming. Then 13.5 percent respondent was service holder. Business was the occupation of 10.3 percent respondent. Whereas 2.6 percent respondent was student and 1.3 percent respondent was dependent on other occupation.

The average household yearly income was 155,381.90 Baht with a range from 36,000 to 612,000 Baht (1 US dollar is equal to 40 Baht). Majority of the households' income (65.2%) was under average income. Household having income level 75,000 Baht and below was 27.7 percent. Household having income level 75,001 – 150,000 Baht was 37.4 percent, income level 150,001 – 225,000 Baht was 18.1 percent, income level 225,001 – 300,000 Baht was 4.5 percent, with income level 300,001 – 375,000 Baht was 3.9 percent, and with income level 375,001 – 450,000 Baht was 1.3 percent0. Where as household having income level 450,000 Baht and above was 7.1 percent. All the respondents (100%) mentioned that they were able to meet their family need with their income. It is the indication of their self reliant economy. They were happy with their income and well adjusted their income with their expenses.

Some families are dependent on only one income source but maximum household are dependent on more than one income sources. Oil palm plantation was the income source of the maximum household (57.4%). The second largest source of household income was rubber plantation where 40 % household was involved with this income source. Home garden was the income source for 20 percent household and salary from job was also the income source for 20 percent household. Business was the income source for 17.4 percent household. Agronomy contributed to the income source for 4.5 percent household. Other sources contributed to the income source for 17.4 percent household. Table 3 summarized respondents' occupation and income. Table 3 has been summarized the respondents' occupation and household income.

Table 3 Respondents' occupation and household income

(n = 155)

Item	Number	Percent
Respondent's occupation		
Farming	112	72.3
Business	16	10.3
Service	21	13.5
Student	4	2.6
Other	2	1.3
Household income (Baht/year)*		
75,000 and below	43	27.7
75,001 – 150,000	58	37.4
150,001 – 225,000	28	18.1
225,001 – 300,000	07	4.5
300,001 – 375,000	6	3.9
375,001 – 450,000	2	1.3
450,001 and above	11	7.1
Mean = 155381.90 Standard deviation = 128747.1 Range = 36,000 – 612,000		
House hold income sources**		
Salary	32	20.6
Home garden	32	20.6
Agronomy	7	4.5
Rubber plantation	62	40.0
Oil palm plantation	89	57.4
Business	27	17.4
Other sources	27	17.4

* 1 dollar = 40.00 Baht

** Some households are involved with more than one income sources.

2.2 Possession of Resources

Possession of resources included the possession of land and home garden. Table 4 had been summarized the respondents' possession of resources. Table 5 shows the respondents' dependency on resources.

2.2.1 Household land holding

The average household land holding was 20.40 rai (1 ha is equal to 6.25 rai) with a range from 1 rai to 100 rai. Household having land holding from 1 to 10 rai was 37.4 percent. Household having land holding from 11 to 20 rai was 25.8 percent, 21 to 30 rai was 20.6 percent. Land possession by household between 31 to 40 rai was 6.5 percent and between 41 to 50 rai was 5.2 percent. And then, house hold having land holding 51 rai and above was 4.5 percent. No household possessed

encroached land. All most all the land was privately owned land. Only 1 household possessed 40 rai leased land and another household possessed 12 rai land on rent.

Table 4 Respondents' resources

(n = 155)

Resources	Number	Percent
Household land holding (rai)*		
01 – 10 rai	58	37.4
11 – 20 rai	40	25.8
21 – 30 rai	32	20.6
31 – 40 rai	10	6.5
41 – 50 rai	8	5.2
51 rai and above	7	4.5
Mean = 20.40 Standard deviation = 17.65		
Range = 01 – 100		
Household home garden area (rai)*		
1 rai and below	96	61.9
1.1 – 2.0 rai	19	12.3
2.1 – 3.0 rai	10	6.5
3.1 – 4.0 rai	3	1.9
4.1 – 5.0 rai	14	9.0
5.1 rai and above	4	2.6
Mean = 1.88 Standard deviation = 1.79		
Range = 0.5 – 10.0		
Home garden crops (number of household)		
Timber trees	133	85.8
Fruit trees	137	88.4
Fodder trees	39	25.2
Medicinal plants	126	81.3
Vegetables	135	87.1
Bamboo	115	74.2

*1 ha = 6.25 rai

2.2.2 Possession of home garden

All most all (94.2%) respondents' household possessed home garden. The home garden size of the maximum (61.9%) household was 1 rai and below (1 ha is equal to 6.25 rai). The average size of the home garden was 1.88 rai with a range of 0.5 to 10 rai. The household possessing home garden of 1.1 to 2.0 rai was 12.3 percent, 2.1 to 3.0 rai was 6.5 percent, 3.1 to 4.0 rai was 1.9 percent, and 4.1 to 5.0 rai was 9.0 percent. And then, 2.6 percent household possessed home garden having an area of more than 5.1 rai.

2.2.3 Home garden crops

People of the village tried to enrich their home garden to avoid their dependency on the community forest. They used their home garden on the basis of multipurpose land use system. They raised trees of various species to meet their demand of timber, fodder, fruits, bamboos and other non timber products in association with vegetables in the same land. Among the households 88.5 percent grew timber trees, 88.4 percent grew fruit trees, 25.2 percent grew fodder trees and 74.2 percent grew bamboos in their home garden. Medicinal plant was in 81.3 percent home garden. In addition, 87.1 percent house hold produced vegetables in their home garden.

2.3 Dependency on Resources

For forest related produces 52.3 per cent respondent were able to meet their domestic needs from the home garden. To meet their requirement 26.5 percent respondent was dependent on community forest for wild fruits, 25.2 percent for food materials, and 20.6 per cent for medicinal plants. None of the respondent was dependent for timber, poles and fodder on community forest. Fuel wood had usually no use in the community as the people use containerized natural gas and electricity for cooking. During the period of previous year, 19.4 per cent respondent bought timber from the market for their use. At the same time, 11.6 percent bought poles, 34.2 percent bought wild fruits, 33.5 percent wild food materials and 26.5 per cent respondent bought medicinal plants from the market. Respondents' dependency on resources has been summarized on Table 5.

Table 5 Dependency on resources

(n =155)

Item	Household	Percent
Collect from Community forest		
Wild fruits	41	26.5
Food	39	25.2
Medicinal plants	32	20.6
Buy from the market		
Timber	55	35.5
Poles	18	11.6
Wild fruits	53	34.2
Food	52	33.5
Medicinal plants	41	26.5

3. Ethical Beliefs and Values

3.1 Individual moral standing

Moral standing, the criteria or consideration of having right, is the most debating issue of environmental philosophy. Shallow ecologists, from their anthropocentric standpoint, believe that only human beings have moral standing. Respect for nature and other things are not because they have rights but because such an attitude is consistent with living a rational, moral and humane life. On the other hand, deep ecologists, from their non-anthropocentric standpoint, believe that in addition to human beings other things also have moral standing. Among the deep ecologists there is also debate on the objects who will consider to having moral standing. Peter singer suggests all individual living animals that have capacity of suffering pains have moral standing. Tom Regan advocates all individual living animals that have high mental capability have moral standing. Paul Taylor, from his biocentric outlook, suggests all individual living things have moral standing.

Table 6 Individual moral standing

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high.
Computed scale: 0 - 0.66 = low, 0.67 – 1.33 = medium, and 1.34 – 2.00 = high)

(n=155)

Item	Person (percent)		Mean
	Yes	No	
Support consumption of an individual plant for medicinal use if there is sufficient plant of this species.	119 (76.8)	36* (23.2)	.23
Support consumption of an individual animal as food if there is sufficient animal of that species.	97 (62.6)	58* (37.4)	.37
Mean = .60 standard deviation = .84 Range = 0 - 2			

* No = 1

The majority of respondents (76.8) percent supported consumption of an individual plant for medicinal use if there is sufficient plant of this species. Again, 62.6 percent respondent supported consumption of an individual animal as food if there is sufficient animal of that species. It implies that majority of the respondent did not support individual moral standing of plants and animals. On the contrary only 23.2 percent respondent supported moral standing of individual plants and 37.4 percent supported moral standing of individual animals. The computed mean on the respondents' score on individual moral standing was 0.60 which indicates low beliefs

on individual moral standing. Respondents' beliefs on individual moral standing have been summarized in Table 6.

3.2 Moral standing of species and ecosystem

Ecocentric ethics does not support moral standing of any individual. It supports moral standing of the whole species or ecosystem, not individuals of that species or that ecosystem.

Table 7 Moral standing of species and ecosystem

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale: 0 – 2.00 = low, 2.01 – 4.00 = medium, and 4.10 – 6.00 = high)

(n=155)

Item	Person (percent)		Mean
	Yes	No	
Support consumption of plant which is going to be extinct	23 (14.8)	132* (85.2)	.85
We have duties to protect endangered animals	140 (90.3)	15 (9.7)	.90
A plant species has the right to exist in this world	140 (90.3)	15 (9.7)	.90
An animal species has the right to exist in this world	141 (91.0)	14 (9.0)	.91
We have duties to conserve nature	142 (91.6)	13 (8.4)	.92
We have duties to conserve forest	143 (92.3)	12 (7.7)	.92

Mean = 5.40 standard deviation = 1.55
Range = 0 – 6.

* No = 1

Most of the respondents (85.2%) did not support the consumption of plant which is going to be extinct. Among the respondents 90.3 percent believed that we have duties to protect endangered animals. At the same time, 90.3 percent respondent believed that a plant species has the right to exist in this world and 91.0 percent of respondent believed that an animal species has the same right. All of these imply that the majority of respondent supported the moral standing of species. Again, by

recognizing that we have duties to conserve nature and forest, 91.6 percent of respondent supported the moral standing of nature and 92.3 percent respondent supported the moral standing of forest. The computed mean on the score of moral standing of species was 5.40 which indicate high beliefs on moral standing of species and ecosystem. Table 7 summarizes the respondents' beliefs on moral standing of species or whole.

3.3 Intrinsic value

There has been much debate about whether an object has intrinsic or instrumental value. There is no debate regarding instrumental value, the value of something assigned by its usefulness to human beings. But intrinsic value, the value of something which is independent of human beings or any others interest, is subjected to too much debate. Non anthropocentric ethics supports intrinsic value recognizing that an object has its own value which is not assigned by its usefulness to others.

Table 8 Intrinsic value

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1 = high.
Computed scale: 0 – 1.33 = low, 1.34 – 2.66 = medium, and 2.67 – 4.00 = high)

(n=155)

Item	Person (percent)		Mean
	Yes	No	
Support conservation of forest that has no benefit	141 (91.0)	14 (9.0)	.91
Forest is wonderful and attractive	144 (92.9)	11 (7.1)	.93
Support prevention of destruction of a plant species that has no benefit	134 (86.5)	21 (13.5)	.86
Forest has its own value and usefulness	143 (92.3)	12 (7.7)	.92

Mean = 3.62 standard deviation = 1.06
Range = 0 - 4

Among the respondents, 91.0 percent supported the conservation of forest that even does not produce any benefit for human beings. At the same time, 92.9 percent respondent believed that forest is wonderful and attractive and 92.3 percent believed that forest has its own value of usefulness. Then, 86.5 percent respondent supported

the prevention of destruction of a plant species that has no benefit. Table 8 summarizes the respondents' beliefs on intrinsic value.

The computed mean of the respondents' score on intrinsic value was 3.62 which indicate high beliefs on intrinsic value. This belief is related to the recognition of that forest is wonderful and attractive and it has its own value and usefulness. Their beliefs are consistent with the idea that forest is a place where people can enjoy their leisure period and seek pleasure and happiness. It is a source of learning nature, plants and animals. It helps to develop our mind. It has symbolic value which is not less important than its instrumental or consumptive value.

3.4 Responsibility for future generation

All the ethical theories, anthropocentric as well as non anthropocentric, have given emphasis on the responsibilities towards future generation. Even, those human beings who still does not arrive in this world have right to get a world which is conducive for their peaceful living. Present generation can not use resources as much as they can or as much as they will. Jeopardizing the resource base to meet the immediate need or to satisfy the greed of human beings is not consistent with the moral and rational behavior. We have to consider how our activities are polluting the environment and how much load the nature can bear.

Future generation will judge our civilization on the basis of, among other, our knowledge on nature, wisdom in resource uses and contribution for their better life. As a rational being we should have to ensure the prosperity and security of our future generation. At the same time, we have to develop knowledge and wisdom that will help them to deal the nature in proper way.

Table 9 Responsibility for future generation

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high.
Computed scale: 0 - 0.66 = low, 0.67 – 1.33 = medium, and 1.34 – 2.00 = high)

(n=155)

Item	Person (percent)		Mean
	Yes	No	
There should have sufficient forest for future generation	152 (98.1)	3 (1.9)	.98
.Mountains, rivers, streams, and land should be conserve for future generation	143 (92.3)	12 (7.7)	.92
Mean = 1.90 standard deviation = 0.31 Range = 0 - 2			

Majority of the respondents (98.1%) believed that there should have sufficient forest for future generation. Meanwhile, 92.3 percent of the respondents believed that mountains, rivers, streams, and land should be conserved for future generation. The computed mean of the respondents' score on responsibilities for future generation was 1.90. It indicates that they highly realized and recognized their responsibility towards future generation. At the same time, they are well conscious of ensuring a good environment for the next generation. Their beliefs on responsibility for future generation have been summarized in Table 9.

3.5 Reverence for life

Albert Schweitzer's "reverence for life" principle deserves a place in the foundation of environmental ethics. In this principle it is recognized that all living things have an intrinsic value, a value that commands our awe and reverence, a combined attitude of honor and fear. It describes a character trait or a moral virtue that sensitizes us to the responsibility to all living things. Life is not a neutral, value-free "fact" of the universe. Life is good in itself. It is inspiring and deserving of respect. A morally good person stands in awe of the inherent worth of each life. In doing this, it helps to live an authentic and moral life.

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Table 10 shows that almost all the respondents (93.5%) believed that all living things should be dealt with love and respect and the average score was 0.93 which was also high. This attitude is conducive to deal the nature in a proper way and makes a connection between ethics and nature by not viewing living things as an indifferent, value-free, mechanical force.

Table10 Reverence for life

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high)

(n=155)

Item	Person (percent)		Mean
	Yes	No	
All living things should be dealt with love and respect	145 (93.5)	10 (6.5)	.93

Mean = 0.93 Standard deviation = 0.24
Range = 0 - 1

3.6 Sentience

It is the capacity of an animal to feel pains and enjoyment. Peter Singer recognized that animal which has the capacity to feel sufferings has at least minimum interest, that is, the interest of not suffering. All most all the respondents (99.4%) believed that animals have the sense of feeling pains and enjoyment. The majority of the respondents (74.2%) did not support the sufferings of animals for human beings enjoyment. This attitude guides human beings to be kind to animals as well as

wildlife. The computed mean of respondents' beliefs on sentience was 1.73 which indicates high recognition of sentience. Table 11 summarizes the beliefs of respondents regarding sentience.

Table 11 Sentience

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high.
Computed scale: 0 - 0.66 = low, 0.67 – 1.33 = medium, and 1.34 – 2.00 = high)

(n=155)

Item	Yes	No	Mean
	Person (percent)		
Animals have the sense of feeling pains and enjoyment	154 (99.4)	1 (0.6)	.99
Support sufferings of animals for human beings enjoyment	40 (25.8)	115* (74.2)	.74
Mean = 1.73 Standard deviation = 0.45 Range = 0 - 2			

* No = 1

Peter Singer considered sentience as the basis for moral standing. He claimed that all living individual animals that have sentience would be considered to have moral standing. Here the beliefs of the respondents differ from Peter Singer. The respondents believed that not all individual of a species has moral standing but a species constituted by individuals have moral standing. Here, their beliefs on sentience are related to their compassionate attitudes towards living beings rather than the moral standing of living individuals.

3.7 Duties in conflicting interest

When we recognize that other living beings have moral standing or rights then the question of conflict comes forward. A right bearer enjoy the opportunity of satisfaction much more demanding requirement. These requirements of other living things and requirements of human beings, makes complexity in our relationship with them. Even our simple actions for subsistence living may cause harm to other living things. What is to be done when important human interests come into conflict with the welfare of nonhuman organisms is the serious question which has to be solved ethically. We need to recognize that in order to remain consistent with the fundamental principle of biocentric ethics; any resolution of such conflicts must not privilege human interests.

Following a long tradition in liberal political philosophy, Paul Taylor suggests for several formal or procedural rules to provide fair and impartial resolution of these conflicts. These rules are: self-defense, principle of proportionality, principle of minimum wrong, principle of distributive justice, and principle of restitutive justice.

Self-defense justifies favoring human interests when the conflicting interests of nonhuman organisms threaten or endanger human health or life. All the respondents (100%) supported the killing of mosquitoes that cause malaria, that is, create threat to human health. In the same way, 100 percent respondent supported the killing of a snake which is about to bite him. They justified this action to save his life, that is, for self defense.

Table 12 Duties in conflicting interest

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale: 0 – 2.00 = low, 2.01 – 4.00 = medium, and 4.10 – 6.00 = high)

(n=155)

Item	Person (percent)		Mean
	Yes	No	
Support the killing of mosquitoes causing malaria (Self defense)	155 (100)	0 (00)	1.00
Support the killing of a snake ready to bite (Self defense)	155 (100)	0 (00)	1.00
Support the killing of a deer for hide (Principle of proportionality)	16 (10.3)	139* (89.7)	.89
For digging pond cutting trees more than requirement (Principle of minimum wrong)	10 (6.5)	145* (93.5)	.93
Benefit sharing with other living things in case of land use (Principle of distributive justice)	143 (92.3)	12 (7.7)	.92
Support restoration of wildlife habitat destructed by cutting trees (Principle of restitutive justice)	150 (96.8)	5 (3.2)	.96
Mean = 6.67 Standard deviation = 0.75			

* No = 1

If the non-basic human interest is incompatible with the basic interests of nonhumans, the principle of proportionality prohibits us from satisfying the human interests at the expense of the (basic) nonhuman interests. The majority of respondents (89.7) did not support the killing of a deer for hide. Thus they ignored their non-basic need of a show piece favoring the basic need of survival of a deer in this world.

When non basic human interests can be made compatible with the basic interests of nonhumans, even though they threaten or endanger the nonhumans, the principle of minimum wrong sets the conditions for satisfying human interests. Here, human actions consider that the actions would cause the minimum harm to the victim. When for digging a pond tree cutting can not be avoided then 93.5% respondent did not support cutting trees more than requirement. It is consistent with the principle of minimum wrong.

The principle of distributive justice sets the conditions for resolving conflicts between the basic interests of humans and nonhumans. In general, fairness demands that burdens be shared equally and that the distribution of benefits and burdens be accomplished impartially. In case of land use 92.3 percent respondent supported the sharing of benefits with other living things.

Restitutive justice demands that restitution be made whenever a resolution of conflict fails to meet the conditions established by the principles of minimum wrong or distributive justice. The majority of respondents (96.8) supported the restoration of wildlife habitat destructed by cutting trees. Table 12 states the respondents' attitude on duties in conflicting interests.

3.8 Ecological interdependence

In eccentric ethics, along with living things moral considerations has given to the nonliving natural objects such as soil, water, rivers, mountains, etc. as a part of ecological system. In this approach, ecological wholes, living and nonliving natural objects in an ecosystem and the relationships that exist among them are seen as deserving ethical considerations. Humans are a member of a biotic community like other living and nonliving members of the community and interdependent with each other. Humans have no privileged status in this ecological community. They are reduced from conquerors to mere members Aldo Leopold's 'Land Ethics' grants moral standing to the ecological communities, symbolically represented as the land.

The majority of respondents (98.1%) believed that all living things are interdependent to each other for their food and better survival. In the same time, 90.3 percent of the respondent believed that extinction of living being can hamper the interdependence for food and survival for other living beings. And then, 96.8 percent respondent believed that living beings are dependent on nonliving things. It implies that the respondents were fully aware of the ecological systems and functions of the members of the system. Table 13 summarizes the respondents' beliefs in this regard.

Table 13 Ecological interdependence

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale: 0 – 1.00 = low, 1.01 – 2.00 = medium, and 2.10 – 3.00 = high)

(n=155)

Item	Person (percent)		Mean
	Yes	No	
All living things are interdependent to each other for their food and better survival	152 (98.1)	3 (1.9)	.98
Extinction of a living thing can hamper the interdependence for food and survival for other living things	140 (90.3)	15 (9.7)	.90
Living things are dependent on non- living things	150 (96.8)	5 (3.2)	.96
Mean = 2.85 Standard deviation = 0.51 Range = 0 - 3			

3.9 Religion

In Buddhist worldview there is nothing which exists beyond or separate from nature. Every living being and nonliving things are components of nature. Man is also a part of nature and not separate from other components. He would live in harmony or coexisting with nature, not conquering or mastering nature. All the Buddhist precepts are based fundamentally on ahimsa, that is, non-harming or reducing the suffering of others**.**

Out of 253 families almost all the families believes in Buddhism except two Christian families. The whole community is under the influence of Buddhist Philosophy. Among the respondents 94.8 percent believed that man is a part of nature and is not different from the rest of the nature. Meanwhile, 91.6 percent of respondent believed that human beings should live a life with peace and harmony with other living beings and nonliving things. Their understanding of nature stated that they are conscious of their position in nature and at the same time they are compassionate to other components of nature which consistent with Buddhist environmental philosophy. Respondents' response on religion has been summarized in Table 14.

3.10 Development of Ethics in the Community

Formation and development of ethics is a long socio-cultural process. Long practiced cultural activities are needed for its articulation (Lindquist 2004). Various social institutions and social interaction is also needed for its development and keeping it going

3.10.1 Folk arts

The average of the respondents score on folk arts was 3.37. It indicates that folk arts had a moderate effect on the formation and development of environmental ethics in the community.

Table 14 Religion

(Scale: 0 - 0.33 = low, 0.34 – 0. 67 = medium, and 0.68 – 1.00 = high. Computed scale: 0 - 0.66 = low, 0.67 – 1.33 = medium, and 1.34 – 2.00 = high)

(n=155)

Item	Person(Percent)		Mean
	Yes	No	
Man is a part of the nature and is not different from the rest of the nature	147 (94.8)	8 (5.2)	.94
Human being should live a life with peace and harmony with other living and non living things	142 (91.6)	13 (8.4)	.92
Mean = 1.86 Standard deviation = 0.42 Range = 0 - 2			

3.10.2 Rituals

The average of the respondents score on rituals was 3.84. It implies that rituals had a strong effect on the formation and development of environmental ethics in the community.

3.10.3 Local myths

Respondents' average score on local myth was 2.52 which exhibits that local myths had a less strong effect on the formation and development of environmental ethics.

3.10.4 Spiritual beliefs

Respondents' average score on spiritual beliefs was 3.41 which indicate that spiritual beliefs had a strong effect on the formation and development of environmental ethics.

In another response, 100 percent respondents mentioned that they respect sacred trees. Among them 96.8 percent (150) mentioned the name of Po tree (*Ficus resligiosa*), 67.7 percent (105) mentioned big trees where God Therappak resides, and 86.5 percent (134) mentioned temple trees as sacred trees. While, 70.3 percent respondent believed on ghost trees. As dwelling place of malevolent spirits or ghosts, 48.4 percent (75) respondents mentioned the name of Takian tree (*Hopea odorata*) and 45.8 percent (71) respondent mentioned the name of banana tree.

3.10.5 Forefather's environmental wisdom

The average of the respondents score on forefather's environmental wisdom was 4.18. It indicates that forefather's environmental wisdom had a strong effect on the formation and development of environmental ethics.

3.10.6 Community spirit of the village

The average of the respondents score on community spirit of the village was 4.25. It implies that community spirit of the village had a very strong effect on the formation and development of environmental ethics.

3.10.7 School education

The average of the respondents' score on school education was 4.15. It indicates that school education had a strong effect on the formation and development of environmental ethics.

3.10.8 Learning from wat (temple)

The average of the respondents' score on learning from wat (temple) was 4.11. It indicates that learning from wat had a strong effect on the formation and development of ethics.

3.10.9 Opportunities to share ideas with other group members of the community

The average of the respondents' score was 4.10 which indicate that opportunities to share ideas with other group members of the community had a strong effect on the formation and development of environmental ethics.

Table 15 Factors affecting the formation of ethics

(Scale: 1.00 -1.80 = least strongly, 1.81 – 2.60 = less strongly, 2.61 – 3.40 = moderately, 3.41 – 4.20 = strongly, and 4.21 – 5.00 = very strongly.
Computed scale: 10.00 -18.00 = least strongly, 18.01 – 26.00 = less strongly, 26.01 – 34.00 = moderately, 34.01 – 42.00 = strongly, and 42.01 – 50.00 = very strongly)

(n = 155)

Item	Person (percent)					Mean
	Very Strongly	Strongly	Moderately	Less Strongly	Least Strongly	
Folk arts	33 (21.3)	35 (22.6)	54 (34.8)	23 (14.8)	10 (6.5)	3.37
Rituals	50 (32.3)	50 (32.3)	38 (24.5)	15 (9.7)	02 (1.3)	3.84
Local myths	13 (8.4)	6 (3.9)	40 (25.8)	87 (56.1)	09 (5.8)	2.52
Spiritual beliefs	40 (25.8)	29 (18.7)	45 (29.0)	37 (23.9)	0 4 (2.6)	3.41
Forefather's environmental wisdom	69 (44.5)	58 (37.4)	17 (11.0)	09 (5.8)	02 (1.3)	4.18
Community spirit of the village	85 (54.8)	38 (24.5)	20 (12.9)	11 (7.1)	01 (0.6)	4.25
School education	62 (40.0)	62 (40.0)	24 (15.5)	07 (4.5)	00 (.0)	4.15
Learning from wat	71 (45.8)	46 (29.7)	26 (16.8)	09 (5.8)	03 (1.9)	4.11
Opportunities to share ideas with other group members of the community	73 (47.1)	46 (29.7)	18 (11.6)	16 (10.3)	02 (1.3)	4.10
Opportunities to share ideas with other researchers and educational institutions	62 (40.0)	48 (31.0)	29 (18.7)	14 (9.0)	02 (1.3)	3.99
Mean = 37.97 S. deviation = 8.14						

3.10.10 Opportunities to share ideas with researchers and educational institutions

The average of the respondents' score was 3.99. It indicates that opportunities to share ideas with researchers and educational institutions

The computed mean of all that factors was 37.97. It also indicates that all that factors had a strong effect on the development and formation of environmental ethics in the community. The findings on these factors have been summarized in table 15.

4. Behavior toward the Community Forest

The project of environmental ethics is to construct ecologically and ethically appropriate ways for human beings to live their lives in consort with nature (Mallory 1999). It shapes human behavior and judgment and places limitations on behavior (Haught 1996). It also provides us with the means to articulate ethical problems and deliberate between ranges of alternatives as to how one ought to behave (Lindquist 2004).

The community has formulated a regulation to set a behavioral pattern to deal their forest. In this regulation restrictions have been imposed in activities detrimental to the forest. The average of the respondents score on not feeding domestic animals in the forest was 4.56. It indicates that they followed this item of the regulation very strongly. The average of the respondents score on not cutting tree in the forest was 4.60. It states that they followed the restriction of the regulation on cutting trees very strongly. The average of the respondents score on not collecting non-timber forest produces for sell was 4.6. It also indicates that they very strongly followed this item of regulation. At the same time, the average of the respondents score on not collecting medicinal plants for sell, no hunting of wildlife and not setting fire in and around the forest were 4.57, 4.80 and 4.59 respectively. All these indicate that they very strongly recognized those items of regulations. Their average score on the protection against all illegal practices in the forest was 4.60 which also indicated that they very strongly protect all illegal activities in the forest. The computed average score of all these items of behavior was 32.14 which is also very strong and consistent with their ethical beliefs. The respondents' response on their behavior has been summarized in Table 16.

Regardless of the strictness of the deductive process by which principles are converted into actions, principles ultimately require first-order justification by which the goods they are intended to respect are appreciated by the members of a given society (Haught 1996). It is very difficult that all the members' action will go in the same line. For that the local community must understand itself finally as a community of interest – a common dependence on a common life and a common ground (Berry 2003). A successful community involves an implicit sense of belonging in a taken-for-granted situation (Bell and Newby 1976 as cited in Walmsley and Lewis 1993). In

community forest, this sense of belonging is an important prerequisite because it helps to create a sense of responsibility of the participants.

For the formation of this sense of belonging community people must have influence in the decisions and have the opportunity to participate in all level of activities.

Table 16 Behavior toward the community forest

(Scale: 1.00 -1.80 = not at all, 1.81 – 2.60 = occasionally, 2.61 – 3.40 = moderately, 3.41 – 4.20 = strongly, and 4.21 – 5.00 = very strongly. Computed scale: 7.00 – 12.60 = not at all, 12.61 – 18.21 = occasionally, 18.22 – 23.82 = moderately, 23.83 – 29.43 = strongly, and 29.44 – 35.00 = very strongly)

(n =155)

Item	Person (percent)					Mean
	Very Strongly	Strongly	Moderately	Occasionally	Not at all	
Does not feed domestic animals in the forest	99 (63.9)	47 (30.3)	8 (5.2)	0 (0.0)	1 (0.6)	4.56
Does not cut tree in the forest	104 (67.1	43 (27.7)	6 (3.9)	1 (0.6)	1 (0.6)	4.60
Does not collect non-timber forest produce for sell	104 (67.1)	43 (27.7)	6 (3.9)	1 (0.6)	1 (0.6)	4.60
Does not collect medicinal plant for sell	103 (66.5)	41 (26.5)	09 (5.8)	1 (0.6)	1 (0.6)	4.57
Doesn't hunt wildlife from the forest	105 (67.7)	42 (27.1)	6 (3.9)	1 (0.6)	1 (0.6)	4.60
Does not set fire in and around the forest	101 (65.2)	47 (30.3)	6 (3.9)	0 (0.0)	1 (0.6)	4.59
Protect against all illegal practices in the forest.	101 (65.2)	48 (31.0)	5 (3.2)	0 (0.0)	1 (0.6)	4.60

Mean = 32.14 Standard deviation = 4.39
Range = 7 - 35

4.1 Participation in problem identification, planning and decision making

BTS Community Forestry Committee arranges a meeting on the 10th day of every month. Representative from each house of the village attends in this meeting. Each of the participants of the meeting has the opportunity to give their opinion on the community forestry activities. It is the forum for decision making, planning, implementation and follow up of all type of community forestry activities in the village ((Group discussion with BTS Community Forestry Committee, 29th September 2004).

Among the respondents, 83.2 percent (129) expressed that they regularly attend the community forestry meeting while 16.8 percent (26) respondent attend the meeting occasionally. The average of the respondents' score on talking about the problems of the forest in the meeting was 3.73 which indicate active participation in problem identification. Again, respondents' average score 3.84 indicates that they actively participate in planning forest management. Then, the respondents' average score on giving opinion was 4.05 which indicate that they have active participation in decision making. And then, then the average score on following the decision taken in the meeting was 4.10 which indicate that they actively follow the decisions taken by the meeting. On average, the computed mean was 15.74 which indicate active participation in all that items. Respondents' response on participation in problem identification, planning and decision making has been summarized in Table 17.

Table 17 Participation in problem identification, planning and decision making

(Scale: 1.00 -1.80 = not at all, 1.81 – 2.60 = occasionally, 2.61 – 3.40 = moderately, 3.41 – 4.20 = actively, and 4.21 – 5.00 = very actively. Computed scale: 4.00 – 7.20 = not at all, 7.21– 10.41 = occasionally, 10.42 – 13.62 = moderately, 13.63 – 16.83 = actively, and 16.84 – 20.00 = very actively)

(n =155)

Item	Person (percent)					Mean
	Very actively	Actively	Moderately	Occasionally	Not at all	
Talking about the problems of the forest in the meeting	48 (31.0)	33 (21.3)	60 (38.7)	13 (8.4)	1 (0.6)	3.73
Giving opinion on planning in forest management	57 (36.8)	30 (19.4)	56 (36.1)	11 (7.1)	1 (0.6)	3.84
Giving opinion for making decision	68 (43.9)	37 (23.9)	41 (26.5)	8 (5.2)	1 (0.6)	4.05
Following the decision taken in the meeting	78 (50.3)	28 (18.1)	37 (23.9)	11 (7.1)	1 (0.6)	4.10

4.2 Participation in implementation and follow up

The respondents' average score on their participation in patrol duty was 4.06, which indicate active participation. The average score on participation in fire protection was 4.05, which indicates their active participation. Again, their average score on weeding, cleaning, and other tending programs was 4.34 which represents active participation. And then, the average score on follow up activities was 3.95 which also indicate their active participation in follow up activities. On average, the computed mean was 16.40 which is the indication of their active participation in patrol duty; fire protection; weeding; cleaning and other tending programs; and follow up activities. Table 19 exhibits the respondents' participation in implementation and follow up programs in community forest.

Active participation in community forestry activities had created a sense of belonging among them as well as it had generated a communal sense of responsibility toward the forest. And their behavior towards forest was guided by this sense of responsibility.

Table 18 Participation in implementation and follow up

(Scale: 1.00 -1.80 = not at all, 1.81 – 2.60 = less actively, 2.61 – 3.40 = moderately, 3.41 – 4.20 = actively, and 4.21 – 5.00 = very actively.
Computed scale: 4.00 – 7.20 = not at all, 7.21– 10.41 = less actively, 10.42 – 13.62 = moderately, 13.63 – 16.83 = actively, and 16.84 – 20.00 = very actively)

(n =155)

Item	Person (percent)					Mean
	Very actively	Actively	Moderately	Less actively	Not at all	
Patrol duty	66 (42.6)	43 (27.7)	38 (24.5)	6 (3.9)	02 (1.3)	4.06
Fire protection	62 (40.0)	52 (33.5)	30 (19.4)	10 (6.5)	1 (0.6)	4.05
Weeding, cleaning and other tending programs on community forest	64 (41.3)	49 (31.6)	33 (21.3)	7 (4.5)	1 (0.6)	4.34
Follow up activities	62 (40.0)	38 (24.5)	43 (27.7)	10 (6.5)	02 (1.3)	3.95
Mean = 16.4 Standardard deviation = 4.59						
Range = 4- 20						

5. Community Forest Management

Before 1960 the main object of forest management was timber production for economic profit. After that the concept of sustainability starts to develop. Sustainability forms the ethical foundation of forestry. But there is still a lot of debate regarding the concept of sustainability and there are many different definition of sustainability in different parts of the world. A background document from the Inter-governmental Seminar on Criteria and Indicators for Sustainable Forest Management (ISCI) discusses the different post-Rio definitions of sustainable forest management and concludes that despite some differences "the basic principles - the economic, ecological, and social including cultural and spiritual functions of forest - of what constitutes sustainable forest management appear in most of the descriptions" (Granholm et al. 1996 as cited in Saastamoinen, 2005). The new concepts of sustainability states that forest resources and forest lands shall be managed and used sustainably to fulfill, economic, ecological, and social including cultural and spiritual needs of the present and future generations.

5.1 Social dimension of the community forest management

It includes involvement of people in the program and social justice**.** The majority of respondent (91.6 percent) supported that the community forestry committee arrange meeting regularly. All (100%) the respondents recognized that community forestry committee takes their opinion in forest management. At the same time, all (100%) the respondent supported that community leaders are capable of managing their forest and 100 percent respondent believed that the community forestry regulation is suitable for the management of their forest. The majority of respondent (78.1%) had received community forestry training which was needed for their active participation in the program. In addition, 97.4 percent respondent believed that there is no conflict in community forest management. Only 2.6 percent (4) respondent believed that there was conflict and they identified the source of conflict were non timber forest product collection specially collection of medicinal plants. There was no conflict on duty and responsibility, distribution of benefit and opportunity, formation of the committee or any other sources.

5.2 Economic dimension of the community forest management

Amartya Sen, the Nobel Laureate, has most comprehensively studied the relationship between economics and ethics. He argues that economics has had two different origins, "ethics" and "engineering." The "engineering" origin and approach to economics is not concerned with the ultimate ends, but are takes ends straightforwardly given and tries to find appropriate means to serve them. The "ethical" approach is related to the ultimate end (Sen 1987, as cited in Saastamoinen, 2005).

The community did not adopt timber production for economic benefit as their management objective. The goal of their management is the restoration of the forest and development of ecotourism. All (100%) the respondents were familiar with both the restoration and ecotourism development program. The majority of the

respondents, i.e. 95.5 (148) percent did not support the replacement of community forest by rubber, oil palm or other profit making use. At the same time, though 25.8 percent (40) respondent supported large scale tourism, the majority of respondent, i.e. 74.2 percent (115) supported that type of ecotourism which would involve limited eco-friendly tourists and which would not cause any harm to the environment. These indicate that their economic dimension of community forest management was not utilitarian or "engineering". It was based on ethics.

5.3 Ecological dimension of the community forest management

The community has decided to manage the forest for restoration. All (100%) the respondents were informed that there forest was for restoration.

Restoration encourages responsibility by making explicit the consequences of our actions in terms of our relation to the larger ecosystemic community. The restorationist is first confronted by past actions (or inaction) which has resulted in a particular system that is often unhealthy or degraded. Through involvement in restoration, the human communities try to grasp the effects caused by their actions and find ways to involve themselves in the community that will lead to healthier systems (Windhager, 1994).

Ban Thung Soong Community had recognized that the past forest management was not appropriate for ecosystem. Then they decided to restore the forest for a healthier ecosystem.

5.4 Out Come of the Present Management

5.4.1 Protection of the forest

For better protection of the forest, BTS Community Forest Regulation had imposed restrictions in activities detrimental to the forest. This regulation helped people to set a behavioral pattern to deal with the forest.

The average of the respondents' score on presence of live stock grazing in the forest was 4.74. It implies that grazing is not at all present in the forest, i.e. protection is very strong against grazing. The average of the respondents' score on presence of illegal cutting of trees was 4.99. It indicates that illegal cutting was not at all present in the forest, i.e. the protection against illegal cutting was very strong. Respondents' average score on presence of commercial extraction of non-timber forest product was 4.70 from which it could be understood that protection against commercial extraction of non-timber forest product was very strong. Again, respondents' average score on presence of commercial extraction of medicinal plants was 4.67 from which it states that protection against commercial extraction of medicinal plants was also very strong. Respondents' average score on the presence of hunting, poaching and trapping of wild animals was 4.76 which also indicate very strong protection against hunting, poaching and trapping of wild animals. Then respondents' average score on presence of slash and burn practices was 4.76 which also shows very strong protection against slash and burn practices. And then,

respondents' average score on presence of land encroachment was 5.0 which also indicate very strong protection against land encroachment. On average, the computed score was 33.63 which indicate that the presence of all that illegal activities were very low which is an indication of very strong protection against illegal activities. The respondents' response on the protection against illegal activities has been summarized in Table 19.

Table 19 Protection of the forest

(Scale: 1.00 -1.80 = highly common, 1.81 – 2.60 = common,
2.61 – 3.40 = moderately, 3.41 – 4.20 = slightly common,
and 4.21 – 5.00 = not at all.
Computed scale: 7.00 – 12.60 = highly common, 12.61 – 18.21 = common,
18.22 – 23.82 = moderately, 23.83 – 29.43 = slightly common, and
29.44 – 35.00 = not at all)

(n =155)

Item	Person (percent)					Mean
	Highly common	Common	Moderately	Slightly common	Not at all	
Presence of livestock grazing	0 (0.0)	0 (0.0)	10 (6.5)	19 (12.3)	126 (81.3)	4.74
Presence of illegal cutting of tree	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)	154 (99.4)	4.99
Presence of commercial extraction of non-timber forest product	0 (0.0)	0 (0.0)	16 (10.3)	14 (9.0)	125 (80.6)	4.70
Presence of commercial extraction of medicinal plants	0 (0.0)	0 (0.0)	20 (12.9)	10 (6.5)	125 (80.6)	4.67
Presence of hunting, poaching and trapping of wild animals	0 (0.0)	0 (0.0)	11 (7.1)	17 (11.0)	127 (81.9)	4.74
Presence of slash and burn practices	0 (0.0)	0 (0.0)	10 (6.5)	17 (11.0)	128 (82.6)	4.76
Presence of land encroachment	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	155 (100.0)	5.00

Mean = 33.63 S.deviation = 2.92
Range = 7-35

5.4.2 Sustainability of the forest

After the initiation of the community forestry program of restoration of the forest it is expected that there would be positive change in the ecosystem.

a. Stability of soil against erosion in riverside

The average of the respondents' score on stability of soil erosion in riverside was 3.03 which indicate that after the initiation of the restoration program, the stability of soil against erosion in clong thom riverside had moderately increased.

b. Water availability inside the forest

Respondents' average scores 3.46 represents there was increase in water availability inside the forest.

c. Naturally growing seedlings in the forest floor

From the respondents' average score 4.22 we can understand that naturally growing seedling on the forEst floor was highly increased. The density of seedling in the community forest were 141,250 seedlings per ha (Sawatdee, 2002). It had more density of seedlings than in the tropical rain forest in Khao Chong Nature and Wildlife Study Center, Trang at altitudes 50, 250, and 450 m above MSL 7,093, 7.062 and 10,875 seedlings per ha respectively (Kiratiprayooon, 1986 as cited in Sawatdee, 2202) and tropical rain forest in Khao Sok 40,000 seedlings per ha (Bunnasopits 1989 as cited in Sawatdee, 2002). But the community forest had less seedling density than dry evergreen forest in Sakaerat Environmental Research Station with 413,750 seedlings per ha (Visaratana, 1983 as cited in Sawatdee, 2000).

d. Growth of trees in the forest

From the average score 3.87, it was understood that the growth of trees in the forest was increased. The diameter of trees in different permanent sample plots in the community forest demonstrated the inverse J-shape or L-shape distribution pattern, which had indicated that the community forest was in a stationary stage as same as in the tropical rain forest in Khao Chong Nature and Wildlife Study Center, Trang, dry evergreen forest in Sakaerat Environmental Research Station (Sawatdee 2002)

e. Regeneration of indigenous bamboo

The average of the respondents' score on regeneration of indigenous bamboo was 4.10 which indicate there was an increase in regeneration of indigenous bamboo in the forest.

f. Availability of forest fruits

Respondents' average score 3.94 also indicates that there was an increase in availability of forest fruits.

g. Availability of medicinal plants

Respondents' score 3.92 shows that there was also an increase in availability of medicinal plants in the forest.

h. Availability of other non-timber forest products

Respondents' average score 3.91 exhibits that there was also an increase in availability of other non-timber forest products in the forest.

i. Number of birds in the forest

The average of the respondents' score on number of birds in the forest was 4.01 which indicate that there was also an increase in the number of birds in the forest. Wildlife management field study report by Faculty of Forestry, Kasetsart University in 2000 identified birds of 11 Order 22 Families and 79 species in BTS Community Forest (Sawatdee 2002).

j. Number of wild animals in the forest

The respondents' average score 3.99 exhibits that there was also an increase in the number of wild animals in the forest. Wildlife management field study report by Faculty of Forestry, Kasetsart University in 2000 identified amphibians of 2 Order 6 Families 24 Species, Reptiles from 2 Order 8 families 14 species, and mammals from 5 Order 11 Families 23 species. There was also some rare species as *Rana blythii*, *Rana miopus*, *Rufo asper*, *Calyptomena viridis*, *Otus sagittatus*, *Batrachostomus stellatus*, *Hipposideros turpis* and *Myotis rosseti* (Sawatdee 2002)

On, average the computed score was 38.50. It is an indication of an increase in the ecological functions in the forest which is indispensable for the sustainability of the forest. Table 20 has been summarized respondents' response on sustainability of the forest.

From the above observations, it has been found that biodiversity of the forest was increasing. Water availability inside the forest was also increasing. Soil erosion was decreasing in a moderate way. All these indicate that the forest is gradually progressing towards restoration.

Table 20 Sustainability of the forest

(Scale: 1.00 -1.80 = not at all, 1.81 – 2.60 = slightly increased, 2.61 – 3.40 = moderately increased, 3.41 – 4.20 = increased, and 4.21 – 5.00 = highly increased
Computed scale: 10.00 -18.00 = not at all, 18.01 – 26.00 = slightly increased, 26.01 – 34.00 = moderately increased, 34.01 – 42.00 = increased, and 42.01 – 50.00 = highly increased)

(n =155)

Item	Person (percent)					Mean
	Highly increased	Increased	Moderately increased	Slightly increased	Not At all	
Stability of soil against erosion in riverside	13 (8.4)	29 (18.7)	64 (41.3)	48 (31.0)	01 (0.6)	3.03
Water availability inside the forest	14 (9.0)	53 (34.2)	79 (51.0)	09 (5.8)	0 (.0)	3.46
Naturally growing seedlings in the forest floor	56 (36.1)	82 (52.9)	13 (8.4)	0 4 (2.6)	0 (.0)	4.22
Growth of trees in the forest	15 (9.7)	107 (69.0)	32 (20.6)	01 (0.6)	0 (.0)	3.87
Regeneration of indigenous bamboo	33 (21.3)	106 (68.4)	15 (9.7)	01 (0.6	0 (.0)	4.10
Availability of forest fruits	18 (11.6)	114 (73.5)	20 (12.9)	03 (1.9)	0 (.0)	3.94
Availability of medicinal plants	13 (8.4)	121 (78.1)	18 (11.6)	03 (1.9)	0 (.0)	3.92
Availability of other non-timber forest products	15 (9.7)	115 (74.2)	22 (14.2)	03 (1.9)	0 (.0)	3.91
Number of birds in the forest	16 (10.3)	127 (81.9)	10 (6.5)	02 (1.3)	0 (.0)	4.01
Number of wild animals in the forest	15 (9.7)	126 (81.3)	12 (7.7)	02 (1.3)	0 (.0)	3.99

Mean = 38.50
S. deviation = 4.05

6. Hypothesis Testing Results

Relationship between independent variable that is, independent moral standing, moral standing of species, intrinsic value, responsibilities for future generation, reverence for life, sentience, duties in conflicting interests, ecological interdependence, and religion with dependent variable behavior towards forests were analyzed using Pearson Correlation analysis. The results of analysis are shown in table 21.

Relationship between independent variable, that is, behavior towards forest with dependent variables namely protection of the forest and sustainability of the forest was analyzed using Pearson Correlation analysis. The result of this analysis is shown in Table 22.

Again, the relationship between independent variable that is, independent moral standing, moral standing of species or ecosystem, intrinsic value, responsibilities for future generation, reverence for life, sentience, and duties in conflicting interests, ecological interdependence, and religion with dependent variable behavior towards forests were further analyzed using multiple regression. The results of these analyses have been shown in Table 23.

6.1 Results from Pearson Correlation analysis

6.1.1 Relationship between Ethics and Behavior towards Forest

There was positive correlation between behavior towards forest and moral standing of species, instrumental and intrinsic value, responsibilities for future generation, sentience, duties in conflicting interests, ecological interdependence, and religion. Besides, there was negative correlation between behavior towards forest and independent moral standing, and reverence for life.

a. Individual moral standing

There is a negative correlation ($p = .000$, $r = -.533$) between independent moral standing and behavior towards forest.

b. Moral standing of species

The positive correlation ($p = .000$, $r = .404$) indicates that high recognition of rights of species tends to have positive behavior towards forest.

c. Intrinsic value

The positive correlation ($p = .000$, $r = .367$) indicates that high recognition of intrinsic value is associated with positive behavior towards forest.

d. Responsibilities for future generation

The positive correlation (p = .000, r = .354) indicates that high recognition of responsibilities to future generation is associated with positive behavior towards forest.

e. Reverence for life

There is a negative correlation (p = .033, r = -.171) between reverence for life and positive behavior towards forest.

f. Sentience

The analysis shows that there is a positive correlation (p = .000, r = .313) between sentience and behavior towards forest. It indicates that high recognition of sufferings and pains of animals tends to govern positive behavior towards forest.

Table 21 Results from Pearson Correlation analysis for ethics and behavior toward forest

Independent variables	Behavior towards forest	
	p	r
Independent moral standing	.000	-.533*
Moral standing of species	.000	.404*
Intrinsic value	.000	.367*
Responsibilities for future generation	.000	.354*
Reverence for life	.033	-.171*
Sentience	.000	.313*
Duties in conflicting interests	.034	.170*
Ecological interdependence	.043	.163*
Religion	.004	.228*

Remarks: p = significant level
r = correlation coefficient.

g. Duties in conflicting interests

There is also positive correlation (p = .034, r = .170) between duties in conflicting interest and behavior towards forest. It means high level of recognition of appropriate duties in conflicting interests tends to encourage positive behavior toward forest.

h. Ecological interdependence

The analysis also shows that there is a positive correlation (p = .043, r = .163) between ecological interdependence and behavior toward forest. It implies recognition of ecological interdependence of all living and non living things tends to increase positive behavior towards forest.

i. Religion

The positive correlation (p = 004, r = .228) between religion and behavior towards forest implies that high recognition of religious beliefs on nature tends to increase positive behavior towards forest.

6.1.2 Relationship between Behavior towards Forest and Forest Management

There was positive correlation between independent variable behavior towards forest with dependent variables protection of the forest; and independent variable behavior toward forest and dependent variable sustainability of the forest

a. Protection of the forest

The positive correlation (p = .000, r = .572) shows that positive behavior towards forest increases the protection of the forest.

b. Sustainability of the forest

The positive correlation (p = .001, r = .260) implies that positive behavior towards forest increases the sustainability of the forest.

Table 22 Results from Pearson Correlation analysis for behavior towards forest and forest management.

Independent variable	Protection of the forest		Sustainability of the forest	
	p	r	p	r
Behavior towards forest	.000	.572*	.001	.260*

Remark: p = significant level
r = correlation coefficient.

6.2 Results from Multiple Regression Analysis

In this study, hypothesis was that individual moral standing, moral standing of species, intrinsic value, responsibilities for future generation, reverence for life, sentience, duties in conflicting interests, ecological interdependence, and religion has relationship with respondents behavior towards forest. The results from multiple regression analysis are summarized in Table 24. The results found individual

moral standing, moral standing of species, intrinsic value, responsibilities for future generation, reverence for life, sentience, duties in conflicting interests, ecological interdependence, and religion significantly influence the degree of behavior of people towards the forest (F = 15.004; Sig. = .000; Multiple R= .694) and they are accounted for 45% variance in degree of behavior of people towards forest in Ban Thung Soong Community. However, when looking at relationship between each independent variables and dependent variable is found that five variables namely individual moral standing (Beta = -.380; t = -5.008; Sig. = .000), responsibilities for future generation (Beta =.291; t = 2.011; Sig. = .046), reverence for life (Beta = -.161; t = -1.998; Sig. = .048), ecological interdependence (Beta = -.447 ; t = -3.233; Sig. = .002), and religion (Beta =.258 ; t = 2.899; Sig. = .004) influence the degree of behavior towards forest.

Table 23 Results from multiple regression of behavior toward forest and independendent variables

Independent variables	$\overline{X}$	SD	B	Beta	t	Sig
Constant	-	-	24.870	-	7.878	.000
Individual moral standing(IMS)	.6065	.84128	-1.987	-.380	-5.008*	.000
Moral standing of species (MSS)	5.4065	1.55712	.403	.143	.904	.367
Intrinsic value (IV)	3.6258	1.06386	.860	.208	1.176	.241
Responsibilities for future generation(RFG)	1.9032	.31775	4.024	.291	2.011*	.046
Reverence for life (RFL)	.9355	.24647	-2.870	-.161	-1.998*	.048
Sentience (SEN)	1.7355	.45694	.463	.048	.677	.500
Duties in conflicting interests (DCI)	6.6774	.75537	.485	.083	1.196	.234
Ecological interdependence (EI)	2.8516	.51966	-3.782	-.447	-3.233*	.002
Religion (REL)	1.8645	.42758	2.655	.258	2.899*	.004

Remark: F = 15.004; Sig. = .000; Multiple R= .694; R^2= .450

The regression equation for behavior toward forest is as follows:

Behavior toward forest = 24.870 – 1.987 IMS + 0.403 MSS + 0.860 IV + 4.024 RFG – 2.870 RFL + 0.463 SEN + 0.485 DCI - 3.782 EI + 2.655 REL

The standardized regression equation for behavior toward forest is:

$Z_{\text{Behavior toward forest}}$ = - 0.380 IMS + 0.143 MSS + 0.208 IV + 0.291 RFG – 0.161 RFL + 0.048 SEN + 0.083 DCI – 0.447 EI + 0.258 REL

7. Reliability Testing for Questionnaires of Dependent and Independent Variables

The results of reliability testing for questionnaire of independent and dependent variables have been summarized in Table 24.

Table 24 Reliability testing of questionnaires for dependent and independent variables

Variables	Reliability coefficient (Alpha)
Individual moral standing	.5960
Moral standing of species or ecosystem	.4972
Intrinsic Value	.5087
Responsibilities for future generation	.5437
Reverence for life	.5612
Sentience	.5566
Duties in conflicting interests	.5567
Ecological interdependence	.5434
Religion	.5467
Behavior toward forest	.4100
Protection of the forest	.4262
Sustainability of the forest	.5564
For all of these variables	.5554

CONCLUSION

The culture of Ban Thung Soong is nature oriented. Enriched indigenous knowledge on nature had constructed through long cultural practices. They are aware of that the cultural changes are inevitable and also recognized that it would not be wise to close the door. They welcome new information and knowledge and then judging it with their existing values and indigenous knowledge they adopt it in their social activities. Religion, here, is also nature oriented where man is a part of nature and nothing different from other components of nature. The cultural and religious core beliefs and values integrated with peoples' willingness to preserve nature had generated a strong environmental ethics in the community. The school and temple are working sincerely to keep this environmental ethics going on. Social organizations of the village are also working actively in this regard. Good association with researchers and educational institutions had created a strong background for further development of environmental thinking. At the same time, the community is supporting children activities in the village with great care. They are exchanging their knowledge and experiences with children. Their activities had created an environment conducive to transmit environmental beliefs and values to the future generation.

In ethical beliefs and values, belief on individual moral standing was low. But all other cases such as moral standing of species and ecosystem, intrinsic value, responsibilities for future generation, sentience, reverence for life, duties in conflicting interest, ecological interdependence and religion were high.

The village has a strong communal harmony. Interpersonal relationship is strong. They are actively participating in problem identification, planning, decision making, implementation and follow up programs, i.e. all the activities of community forest management. This type of active participation had created a strong sense of belonging to the people of the community. Combined with the strong environmental ethics this sense of belonging had generated a sincere sense of moral responsibility among the people. This sense of responsibility is different from duty. It is an inward response and comes from an understanding of the interconnectedness with nature and interconnectedness of our actions with natural phenomenon.

The community has formulated a regulation to set a behavioral pattern to deal their forest. In this regulation restrictions have been imposed in activities detrimental to the forest. They followed all the items of regulation such as prohibition of feeding domestic animals in the forest, cutting trees in the community forest, collecting non-timber forest produces for sell, collecting medicinal plants for sell, hunting of wildlife and setting fire in and around the forest very strongly. Following the regulation they also very strongly protected all illegal activities in the forest.

The social organizations and leaders of the community are people oriented. It has created a good background for the community to manage their forest. People of the village have great respect to the community forestry committee leaders. They believe that their leaders are capable of managing the forest and they also believe that BTS Community Forest Regulation is suitable for the management of the forest. This

respect has created a strong unity and integrity among the leaders and people to manage their community forest in unified way.

Their ethical behavior towards forest has positive influence on the community forest. The community has provided very strong protection against live stock grazing, illegal cutting of trees, commercial extraction of non-timber forest product, commercial extraction of medicinal plants, hunting wildlife, slash and burn practices, land encroachment, and all illegal activities. Their positive behavior toward forest also has positive influence on the sustainability of the forest. After the initiation of the community forest, stability of soil against erosion in riverside of the forest had moderately increased, water availability inside the forest increased, natural regeneration of seedlings highly increased, growth of trees in the forest increased, regeneration of indigenous bamboo increased, availability of forest fruits increased, availability of medicinal plants increased, availability of other non-timber forest products increased, number of birds in the forest increased and number of wild animals in the forest also increased. It indicates that the restoration of the forest is going on.

RECOMMENDATIONS

The people of the village are managing the forest for restoration and development of ecotourism. Their social, economic, cultural conditions have large influence on the management of the forest. The villagers are managing the forest in a very good way. Yet there is still something to be considered for the better management of the forest and for the betterment of the people of the village.

1. Recommendations for Education

Higher studies in the village are limited. All the people have elementary education but only 11.90 percent of them went for secondary level 1 education and the number was gradually decreasing in higher classes. The presence of a primary school in the village has ensured elementary education of the village. It also has a very good influence on the development of environmental thinking of the village. The nearest secondary school is 9 km far from the village. Establishment of a secondary school will provide opportunities of higher education of the village.

2. Recommendation for Community Based Ecotourism development

Community based ecotourism facilities still did not develop in the village. There is a People Centre of the village. This center could be well furnished. A library and a showroom of village products could be established here. A health care center could be established for the tourists as there are trained women for massage and there are seven parataxonomists in the village. Professional training is required to prepare some guides to help the tourists as well as to provide income opportunities to young people.

3. Recommendation for Community Forest Management

Though the villagers managing the forest in a very good way still some illegal activities such as livestock grazing, hunting, slash and burn, collecting non-timber products more than requirement are present at a very low level. It needs more motivation of the people. At the same time, a small area of forest may be used as buffer zone for collecting minor forest products for the people of the village keeping restrictions on all type of activities in the rest of the forest. It would ensure better restoration of the forest as well as provide benefits for the local people.

4. Recommendation for BTS Children

The children are the future of the community. The continuation of ethical beliefs and values and future management of the community forest depend on the children who will take charge of the society in future. The community should continue their children development activities especially activities related to indigenous knowledge and traditional culture. The community should give more emphasis on the higher studies of their children so that they can gather up to date knowledge and match their new knowledge with their indigenous knowledge

5. Recommendation for Further Research

As the study was conducted in only one community, the findings could not be generalized to other community forests where many villages are involved. It would be better to conduct further researches in the wider scope in other places of Thailand. There is also a huge scope of study environmental beliefs and values in different religions, especially Muslim, Hindu, Christian, Bahai and Jewish. In the region, in Malaysia, Indonesia and also in Southern Thailand there was a strong base of Hindu culture. Later on many of those people were converted to Muslim. In Southern Thailand many of them also were converted into Buddhist. There is potential scope to study how their environmental beliefs and values changes with the conversion of religion.

In the village, there are several fields that this study did not cover but which need to be explored for better understanding of the Community Forest. Especially, there are scopes of scientific researches on plant and animal diversity, soil and hydrology and different social dimensions.

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APPENDICES

Appendix 1 Interview schedule

Environmental Ethics on Community Forest Management in Ban Thung Soong Community , Krabi.

Md. Mahbubur Rahman,
M.Sc. Student,
Tropical Forestry Course,
Kasetsart University.

I. Background and Socio-cultural Information

Respondent No:

Name:……..

Address:

Status in the household:

Parents	Son/daughter	Other (specify)

1. Age:……Year/
2. Sex:

M	F

3. Marital Status:

Married	Unmarried	Divorced

4. Religion:

Buddhist	Christian	Other (specify)

5. What is your level of education?

Illiterate	Elementary	Secondary Level 1	Secondary Level 2	Vocational	University

6. Level of education of household member (including you)

Level of education	No of member educated	Remarks
Illiterate		
Elementary		
Secondary Level 1		
Secondary Level 2		
Vocational		
University		
Total		

7. Demographic structure of the household

Age class (years)	No. of male	No. of female	Total
0-5			
6-17			
18-44			
45-60			
Over 60 years			

8. Are you or your fore fathers permanent resident of this community?

Y	N

If no, for how long you have been living at your present location:

= years

II. Economic Characteristics**A. Occupation and household income**

9. Present occupation?

Unemployed	Farmer	Business	Service	Forestry related	Student	Other

10. What is your family average yearly income from different sources?

Income source	Amount of money (baht)
Salary	
Forest products	
Home garden	
Agriculture	
Rubber plantation	
Oil palm plantation	
Business	
Other	
Total	

11. Does your family able to meet the family expenditure with this income?

Y	N

B. Possession of resources.

12. How much land does your family possess?

Type of land	Amount (rai)
None	
Private	
Leased	
On rent	
Encroached forest land	
Others	
Total	

13. Have you any home garden?

Yes	No

14. What is the area of your home garden?

= rai.

15. What do you grow in your home garden? (Please put √ mark on the appropriate one).

Timber trees	
Fuelwood trees	
Fruit trees	
Fodder	
Medicinal plants	
Vegetables	
Bamboo	

C. Dependency on resources

16. Can you meet your domestic requirement of the forest products from your home garden?

Y	N

17. What are the forest produces you collect from the community forest now?

Timber	Poles	Wild	Fuelwood	Food	Medicinal plants	Others

18. To satisfy your household needs did you buy any of the products last year?

Timber	Poles	Wild	Fuelwood	Food	Medicinal plants	Others

III. Ethical Beliefs:

19. Do you think we can collect a plant for medicinal use if there is sufficient plant of that species?

Y	N

20. Do you think we can take an animal as food if there is sufficient animal of that species?

Y	N

21. Do you think we should consume a plant which is going to be extinct?

Y	N

22. Do you think we have duties to protect animals that are endangered to be extinct?

Y	N

23. Do you think that a plant species has the right to exist in this world?

Y	N

24. Do you think that an animal species has the right to exist in this world?

Y	N

25. Do you think that we have duties to conserve nature?

Y	N

26. Do you think that we have duties to conserve forest?

Y	N

27. If you get no benefit from forest do you still think that a forest should be conserved?

Y	N

28. Do thank that forest is wonderful and attractive?

Y	N

29. If man does not get any benefit from a plant species will you try to prevent the destruction of that species?

Y	N

30. Do you think that forest has its own value and usefulness independent of its usefulness to human being?

Y	N

31. Do you think there should have sufficient forests for future generation?

Y	N

32. Do you think mountains, rivers, streams and land should be conserved for your future generation?

Y	N

33. Do you think all living things should be dealt with love and respect?

Y	N

34. Do you think animals have the senses of feeling pains and enjoyment?

Y	N

35. Do you support the sufferings of animals for human beings pleasure?

Y	N

36. Do you support the killing of mosquitoes if it is a cause of malaria to your family members?

Y	N

37. Do you support the killing of a snake when it is about to bite you?

Y	N

38. Do you support the killing of a deer for the hide to decorate the house?

Y	N

39. If you have to dig a pond for your family use over a land covered with trees, will you cut trees more than the minimum requirement for the pond?

Y	N

40. In case of land use, if human beings benefit goes against the benefits of other animals and living things, will you compromise human beings benefit with the benefit of the other living things ?

Y	N

41. If we anyway cut some trees that destroy the habitat of a wild animal do you think that we should restore it?

Y	N

42. If somebody capture or trap an animal do you think that it should be returned to its natural environment.

Y	N

43. Do you think all living things, including human beings, animals, plants, insects, organisms, is interdependent to each other for their food and better survival?

Y	N

44. Do you think if anyone of these living things becomes extinct, it will hamper the process of interdependency for food and survival of the other living things?

Y	N

45. Do you think that the living things are dependent on non-living things like water, rivers, mountains, air, etc, for their existence on this earth?

Y	N

46. Do you believe that man is a part of the nature and is not different from the rest of the nature?

Y	N

47. Do you think human beings should live a life with peace and in harmony and with no or minimum destruction of all other living and non-living things of the nature?

Y	N

48. Is there any sacred tree that you respect?

Y	N

If yes, please mention the name?

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49. Is there any tree that you are afraid of ?

Y	N

If yes, please mention the name?

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50. How much do you think the following factors have influenced your ideas on forests

Factors	Very strongly	Strongly	Moderately	Less strongly	Least
1. Folk arts (folk literature, song, poetry opera, etc.)					
2. Rituals					
.3 Local myths					
4. Spiritual beliefs					
5. Forefather's environmental wisdom					
6. Community spirit of the					

village					
7. School education					
8. Learning from wat (temple)					
9. Opportunity to share ideas with other group members of the community					
10. Opportunity to share ideas with researchers and educational institutions.					

V. Behavior toward forest

51. Do you know your obligations under the BTS Community Forestry regulation?

Y	N

52. How do you follow the following obligation of the community forestry regulation regarding the use of the forest?

Obligation	Very Strongly	Strongly	Moderately	Occasionally	Not at all
1. Domestic animals are not allowed to feed in the community forest					
2. Cutting of tree is not allowed in the community forest					
3. Collecting non timber forest produce for sale is punishable					
4. Collecting medicinal plants for sale is punishable					
5. Hunting of wildlife is completely prohibited					
6. BTS villagers will not set fire in the forest and the nearby area					
7. BTS villagers will protect the forest from all					

illegal practices both from outside the village as well as inside the village					

53. Do you attend the community forestry meeting?

Regularly	Occasionally	No

54. How do you participate in the community forestry meetings?

Activities	Very actively	Actively	Moderately	Occasionally	Not at all
1. Do you talk about the problems of the forest in the meeting?					
2. Do you give your opinion on planning forest management in the meeting?					
3. Do you give opinion for making decision					
4. Do you follow the decisions taken in the meeting?					

55. When necessary or arranged how do you participate in the following activities?

Activities	Very actively	Actively	Moderately	Less actively	Not at all
1 Patrol duty					
2. Fire protection					
3. Weeding cleaning and other tending programs on community forest					
4. Follow up activities					

VI. Community Forest Management:

56. How often the community forest committee arranges meeting?

Regularly	
Not regularly	

57. Does the community forest management committee take opinion of community people on forestry issues?

Y	N

58. Do you think the community leaders are capable of performing their duties efficiently?

Y	N

59. Do you think the BTS Community Forest Regulation is suitable for the management of the community forest?

Y	N

60. Did you receive any community forestry training?

Y	N

61. Please comment on the presence of the following activities in community forest.

Activities	Highly common	Common	Moderately	Slightly	Not at all
Livestock grazing					
Illegal cutting					
Commercial extraction of non- timber forest product					
Commercial extraction of medicinal plants					
Hunting, poaching and trapping of wild animals					

Slash and burn practices					
Land encroachment					

62. What is the regeneration system you use in the community forest? (Please put √ mark on the appropriate one).

1. Felling and successive planting	
2. Restoration	
3. Other (specify)	

63. Compare the followings before and after the initiation of community forestry program.

Name of item	Highly increased	Increased	Moderately	Slightly increased	Not at all
1. Stability of soil against erosion in riverside					
2. Water availability inside the forest					
3. Naturally growing seedlings in the forest floor (regeneration)					
4. Growth of trees in the forest					
5. Regeneration of indigenous bamboo					
6. Availability of forest fruits					
7. Availability of medicinal plants					
8. Availability of other non timber products					
9. Number of birds in the forest					
10. Number of wild animals in the forest					

64. Is their any conflict on community forest among the villagers?

Y	N

If yes what are the major issues of conflict among the villager?

Non timber forest product collection.	
Collecting medicinal plants	
Duty and responsibility	
Distribution of benefits and opportunity	
Formation of the committee	
Other (specify)	

65. Do you know there is a program for developing ecotourism in your community forest?

Y	N

66. What type of tourism in your community do you support?

Large number of visitor generating huge economic benefit for the community	
Limited to eco-friendly tourists without any harm to the environment	

67. Do you think replacement of community forest by rubber plantation, oil palm plantation or any other suitable use will be more profitable for the community?

Y	N

Thank for your kind cooperation

Appendix 2 The Regulation of Utilization from Community Forestry for Ecotourism in Ban Thung Soong Community

BTS Community Forest for Ecotourism is community forest that BTS villagers have protected, conserved and rehabilitated for BTS people directly and indirectly. The villagers developed the regulation concerning BTS Community Forest for Ecotourism.

Declaration

1. BTS Community Forest is common properties belong to all BTS villagers. They have protected and conserved forest resources and wildlife remaining in BTS Community Forest.
2. BTS villagers have set up BTS Community Forest Committee to manage the forest. They will make use of community forest to cope well with the community needs. They will protect the forest from all illegal practices both from outside the village as well as inside the village. They also help in rehabilitating the forest.
3. Logging is not allowed in the forest except for the communal activities. In the case it must be agreed upon with BTS community Forest Committee.
4. BTS villagers can gather minor forest products and herbs for their own uses and for the communal activities through sustainable management practices.
5. BTS villagers will help in transfer and exchange knowledge about forest resource conservation.
6.BTS villagers will cooperate with the authorities in forest and wildlife conservation for ecotourism.
7. BTS villagers will not set fire in the community forest and nearby area so as to prevent fire spreading into the forest.
8. Domestic animals is not allowed to feed in the BTS Community Forest.
9. People from outside can enjoy the BTS Community Forest only for ecotourism and recreation. They have to follow the regulation of BTS Community Forest.
10. BTS Community Forest should be developed based on the Master Plan. The establishment of trails and pavilions in BTS Community Forest should be simple and harmonize with surrounding nature.
11. BTS villagers should cooperate with research agencies and educational institution so that the application will benefit the society.
12. BTS villagers should cooperate with school in transferring the ecological knowledge of BTS Community Forest to the youth. This will help in giving information to new generation.
13. Establishing foundation to conserve BTS Community Forest to sustainable benefits for forest management and BTS villagers.
14. BTS villagers are all involved in forest and wildlife, particularly on exploration, surveying and controlling.

Punishment

1. A person who cut the tree in community forest illegally must be fined at least 1,000 bath. The felled trees should be used for community activities.
2. The gathering of minor forest products in BTS Community Forest for sell must be fined two times the market price of each item.

3. Any person who gather the medicinal plants from BTS Community Forest for sell, must be fined 500 bath per species.

4. Any person who hunts the wild animals inside BTS Community Forest must be fined. Weapons will predisposed and case will taken legal action.

Translated by Ms. Wirongrong Doungjai, Ms. Kanjana Popromsree and Mr. Chakrit Na Takuathung.

Apendix 3 Drawing by School Children of BTS Primary School

I am a little girl. It is fortunate that I was born on this big globe. My old settlement was northeastern Thailand which is highland and has drought more than any regions in Thailand. Later on, my family resettled in the south for better job. I have new livelihood here.

Yupapak Yenchai
Class 5, BTS School
2005

Translated by Dr. Suree Bhumibhamon

Apendix 4 Drawing by School Children of BTS Primary School

This village is named BTS village. It has a large piece of forest covering more than 7,000 rai. People here are joining hands comprising for conservation. So in any directions I look, I find only the green area of various plant species. It is the main watershed area. There are rich wild animals living in this forest.

Yupapak Yenchai
Class 5, BTS School
2005

Translated by Dr. Suree Bhumibhamon

Apendix 5 Drawing by School Children of BTS Primary School

People in this village gathering wild vegetables for household consumption. When we first stay here, my father used to take me along in searching of bamboo shoots. I have opportunity to touch the dense forest and I feel very fresh. I never have this kind of feeling in my life before. My most impression is the people attitude. They do not kill animals and destroy forest.

Yupapak Yenchai
Class 5, BTS School
2005

Translated by Dr. Suree Bhumibhamon

Apendix 6 Drawing by School Children of BTS Primary School

Based on the participatory approach in forest conservation, the people and the village leaders have prepare the proposal and submit to the RFD asking for right to manage community forest in 1998. Their proposal was admitted and named as BTS Community Forest. In the year 2001, Her Majesty has visited the forest. BTS people are happy with the event.

Yupapak Yenchai
Class 5, BTS School
2005

Translated by Dr. Suree Bhumibhamon

Apendix 7 Drawing by School Children of BTS Primary School

Up to now, people of BTS and nearby villages including students from many universities in Thailand and from other countries, including my school which is situated in this village made uses this forest for education in various ways. I think the youth in the next generation should have public awareness and participation so as to develop this forest sustainablly.

Yupapak Yenchai
Class 5, BTS School
2005

Translated by Dr. Suree Bhumibhamon

Appendix 8 Andaman Youth Declaration 1988

We, the Andaman Youth, live along the Andaman Sea Coast with clear thinking and with good reason. We love our plentiful land, our blue sea, our clear sky which has no pollution. We would like to declare that:

1. We, the Andaman youth, would like to pay respect to our ancestors who preserves our land and water. Our land gives food to live our live, give water to refresh us with love. Andaman is the center of love and understanding of mankind.

Andaman is a region which we can rely on. It gives us job and natural resources which is valuable and of various kind of uses and maintain our thinking. All the people, whatever may be their origin, Thai, Malayan, Indonesian, Burmese, Indian we can live together. We have one goal to develop our region.

2. We, the Andaman youth, love our beautiful Andaman. We also are proud to be the Thai. Thailand is rich in natural resources. The country has valuable cultural heritages. Thailand has the king who takes good care of people and suggests people to conserve natural resources. Being a Thai, we would like to see Thailand with good environmental condition. People who live in the city are aware of urban environment. People who live in the villages protect their environment of up countries. So, we will live with good harmony.

3. Andaman sea coast has many natural resources but there was unwise use of these resources. The left over resources are relatively small. We have to take opportunity to solve the problem before we loss all natural resources and before we loss all.

4. We, the Andaman youth, would like to see the government offices would strictly manage natural resources, work according to the goal, have social justice in activities, work hard with honesty and respect people. Andaman Sea is ours. It can have good environment, be a good tourist area, good hatching side for fishery depending on the ability and interest of the government officer.

5. Resources have no power to prevent disturbance by human beings. Whatever they want they destruct. We have to protect resources to provide people its usefulness. We have to protect resources rather than destruct them so as to use for mankind. Andaman youths want people who is owner of natural resources, will apply wise management practices by cooperating with government offices. We want no destruction of these natural resources for short term benefit and not for individual benefit. We want to avoid destruction, to help restoration processes and to maintain benefit for people.

6. We, the Andaman youth, would like to encourage teachers to take a close look to the pupil; to give them good lessons about resource conservation and environmental protection. Teachers can help pupils to stimulate the idea from the childhood to respect and obey and to be kind hearted. Teachers should be friendly with pupil, share love to all and give good advice to people when the problems come.

7. We, the Andaman youth, should help in protection of environment in all occasions. We have to cooperate in our groups. Lessons for friends be able to transfer the knowledge and understanding on environmental protection to other people, be able to a good leader, have encourage to show the good ways, not to be narrow minded, adaptable to the changing environment and to be healthy.

(Translated by Dr. Suree Bhumibhamon).

Appendix 9 Andaman Youth BTS Regulation on Education 2000

We, the children of Andaman people, are gathering here at Ban Thung Soong, the land of love and cooperation. People of Ban Thung Soong love each other like relatives. We saw people here who love their community, children, forest, trees, wildlife, soil, water and culture. We have gained certain amount of knowledge about struggle for life. We learn new things to improve our capacities and development. We got very good relationships with people, teacher and children. These experiences have enriched our thinking on education, social life and community. From this gathering of Ban Thung Soong we want to declare that:

1. We, the Andaman children, are aware of the need of education of Thai youths, particularly the decentralization of education so as to open the opportunity for rural people to study with equal quality with the children of big city. Those children, who have no opportunity to continue study should get opportunity so that all children will be learner, awaken and pleasured in all aspects.

2. We, the Andaman children, love our school. We want our school, whatever may be the size big or small, being a place to give love, kindness, warmness safeness and understanding. We want schools along the Andaman sea coast have good environment. The schools will have more trees for shade, for creating atmosphere of learning and for being like Andaman. We, the children, want to see good schools without narcotics. The children from far remote areas with good enthusiasm should get the opportunity to continue their learning.

3. We, the Andaman children, recognize teachers as bright candles who lead us in our way. The teachers of Andaman schools should have good quality having good basic knowledge, be able to teach as good teachers. Teachers should devote their time to take a good look to their pupil and not worried about heavy workload. Teachers should have enthusiasm, well learned and be able to effectively transfer up to date knowledge to their pupil. Teachers should become a good model for people. We want teachers who are very kind, understand and love people. They will teach kids how to solve problems, help them to construct bright future and can contribute for their nation.

4. We, the Andaman children, want to see school library as a center of learning. The library should have many books and references useful for kids as well as for community learning. Schools should develop IT sectors to open opportunities for children to get sufficient information and to enhance their communication skills. We have to develop networks like Andaman Youth Leadership Network, the network of thinking of Andaman Youths. Other networks should be developed to flourish knowledge and spiritual thinking of youth.

5. We, the Andaman children, want to see that all Thai children get equal opportunities to study so that there will no imbalance. People have to love their school and their studies. They should have good understanding on how to work in groups regardless of religious background and way of life.

6. We, the Andaman children, would like to see good relationships among the community, school, teachers, students and parents. We want to see the potential roles of community in establishing, developing and managing good schools in their community which would conform with the community's wishes. The school will improve and manage community interest.

7. We, the Andaman Youth, want to see schools along Andaman sea coast join hands in conserving traditional culture and other national culture including the culture of neighbouring countries located in the Andaman sea coast.

8. We, the Andaman Youth, would like to see government and NGOs along the Andaman sea coast are aware of the importance of youth education. They may help in developing schools as well as other development systems. They have to show interest in sports, narcotics problem and increase other activities.

9. Under globalization and several pattern of competition Andaman youth leaders should be aware of the great responsibilities to conduct afterwards in protection the land and to use natural resources wisely and protect environment. Youths should prepare themselves in all directions so that they can work to meet the goal.

(Translated by Dr. Suree Bhumibhamon).

Appendix 10 In-depth interview with Mr. Chatchai Khaosa-ard, the former village head and one of the most respectable persons of Thung Soong Village

Date of interview:

1. How long are you living in Ban Thung Soong?

2. Do your fore father was permanent resident of this village?

3. When you were a child how was the social condition of the village?

4. How many migrated families are in the village at present?

5. From where did the migrated families come?

5. Do you think migration created social problems in the village?

6. In old days what was the condition of the forest of the village?

7. Why were the villagers interested to conserve the forest?

8. How did the conservation of forest started?

9. Would you please tell something details about the progress of conservation activities in the village?

10. How do you think the environmental consciousness developed in the village?

11. What have you learnt from your ancestors about forest and environment?

12. Do you think that the villagers still practice indigenous knowledge?

13. Do you think that long existing socio-cultural beliefs and values have any influence on the development of nature and environmental thinking in the community?

14. Will you please tell something more details about the folk songs, folk dances, and folk tales that related to nature and environment?

15. Will you please tell something details about the rituals related to environmental thinking?

16. Will you please tell something about the myths and spiritual beliefs related to forest and environment?

17. How do the social institutions in the village contribute to the development of ethical beliefs and values in the village?

18. Do you think external organizations, institutions or personnel have any influence in the development of environmental thinking of the village?

19. Do you observe any significant change in the lifestyle of the young generation and their beliefs and values?

20. What are your expectations from future generation?

21. Is there any program in the village to build environmental awareness to the children of the village?

22. What do you think about the future of the community forest of the village?

Appendix 11 In-depth interview with Mr. Montri Khaosa-ard, the present village head and Chairman of the BTS Community Forestry committee

Date of interview:

1. What are the activities of the village committee to develop the socio- economic condition of the village?

2. Do you think adequate facilities have been developed in the village for education, public health and sanitation, housing and other living amenities?

3. What are the main economic activities of the villagers?

4. Is the village getting any external economic, organizational and institutional support for development of the village?

5. How many committees are there in the village?

6. How did these committees form?

7. What are the activities of these committees?

8. How is the participation of people of the activities of different committees?

9. How does the Community Forestry Committee involve people in community forest management activities?

10. What are the past and ongoing programs for community forest management?

11. How Royal Forest Department and the community are co-operating each other in the management of the community forest?

12. What is the progress of development of community based ecotourism in the village?

13. What are the future plans for the development of ecotourism facilities in the village?

14. What are your expectations from your future generation?

15. Is there any program in the village for raising awareness to children on natural resources and environment?

Appendix 12 In-depth interview with respected Monk Phra Kru Suwimol Thammanukun, Wat Na Nua.

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Date of interview:

1. What are the Lord Buddha's Teachings on nature and human-nature relationship?

2. What type of life should people live in this world?

3. What are the roles of this temple to disseminate Buddhist Philosophy on nature and environment among people?

4. Do you think that the temple has any role in education of people?

5. Do you think that religious beliefs and values of young generation of this area are changing?

6. Do you think the religious beliefs and values should be a part of education of children?

7. Does the temple have any program to develop children's thinking on religion, nature and the way of leading life?

8. You were the Chairman of inauguration ceremony of Ban Thung Soong Community Forest. Do you think that the people of Ban Thung Soong are managing their forest properly?