WATER IN MAINLAND SOUTHEAST ASIA: FROM SACRED TO SECULAR

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INTRODUCTION

Local governments in China and mainland Southeast Asia currently see the water of the Mekong River as an ideal sustainable resource, and are exploiting it for hydroelectric production through the construction of dams, in order to assist the rapid development and growth taking place in the region.¹ In addition, these governments also view the waterway of the Mekong as a convenient route for transport and trade throughout the mainland Southeast Asian region, and are blasting rapids and other obstructions within the Mekong in order to aid this trade and transport. Water in the Mekong is currently being exploited to such an extent that several groups including environmental groups, non-governmental organizations (NGOs), human rights groups, religious groups, and concerned locals are raising serious concerns over the social, human, and environmental, and spiritual effects that they believe are taking place in and around the Mekong. These groups are all wondering if the Mekong will ultimately be able to survive.

This high-level economic exploitation of the Mekong and its water is a very new phenomenon in the mainland Southeast Asia region, one which has only begun to occur since the colonial period.² Prior to the colonial period, the elite and common peoples of

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¹ It is recognized that the term “mainland Southeast Asia” is problematic in providing an overgeneralization for a culturally diverse area with unclear regional boundaries. However, for the sake of simplicity, the term “mainland Southeast Asia” as well as “mainland Southeast Asians” will be used in this thesis to refer to the modern day nations and peoples of Burma, Thailand, Laos, Cambodia, and Vietnam, and will also at times cross modern political boundaries to include Yunnan province in southwestern China. Likewise, the general term “Southeast Asia” will refer to the region defined by the 10 political nations of ASEAN, plus East Timor.

² The term “colonial period” in this region is also problematic due to the fact that the modern day nation of Thailand was never directly colonized by the Europeans. But again, for the sake of simplicity, “colonial period” will refer to the historical time period between the early 19th century and the mid-20th century when Britain and France arrived and colonized Burma and Indochina, respectively.
mainland Southeast Asia believed that water had a strong spiritual element. Local spiritual beliefs placed great importance on water spirits, gods, and goddesses, etc, as mainland Southeast Asians believed that continued rainfall and availability of water was dependent on the proper respect and appeasement of these deities. Water was also exploited for economic purposes in pre-colonial times. The mainland Southeast Asian peoples viewed water as an extremely important resource for their economy and survival, which they depended on heavily to grow crops, etc. The elite therefore constructed irrigation works, reservoirs, canals, etc, to increase the availability of this water for practical and economic means. However, this exploitation was undertaken in a manner that was conscious and respectful of water’s spiritual element. This was due to the fact that pre-colonial mainland Southeast Asians made no distinctions between the sacred and secular worlds, viewing them rather as one inseparable unit, and therefore approached any economic water projects as both economic and spiritual in nature. In addition, kings in pre-colonial mainland Southeast Asia were considered by their people to be divine, and as a result people considered any manipulation of the natural environment, including water projects, as a display and validation of a king’s divine power. Thus, any disruptive or destructive manipulation of the environment was taboo.

In modern times, developmental pressures and population growth certainly exist to an extent that was not present in the pre-colonial era, and this has put much greater pressure on natural resources. But a fundamental shift in the attitudes of those in power also took place beginning in the colonial period that allowed governments and

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3 For the purposes of this thesis, “elite” refers to both the mainland Southeast Asian rulers who have held the power and made the decisions in the region throughout history and up to present times, and also to the developers who began to push for and carry out plans to develop the region beginning in post-colonial times.
developers to exploit water and other natural resources to the extent that is now being seen on the Mekong. The introduction of the concepts of the ownership of space and the demarcation of territory by strict Western borders and boundaries, as well as the commodification of natural resources, and the secularization of the natural world through the introduction of Western scientific principles, transferred first to the elite and later to the common peoples via means such as education, are what this paper will argue are the main shifts in approach to the natural world that arrived with the colonialists, and which allow the current potentially destructive development of the Mekong to occur. With the post-colonial Southeast Asian elite viewing rivers and the land itself as resources which can be sectioned off and legally owned by nations, viewing natural resources such as water as commodities which can be exploited and exported for profit to aid development, and no longer viewing water or the natural world as sacred, governments and developers have come to look at the Mekong River as just another commodity to be owned and exploited, rather than as a sacred feature of the landscape. The respect for the spiritual elements of water was lost by most Southeast Asian elite beginning in post-colonial times.

The current development on the Mekong is a clear result of this fundamental shift in approach, and a telling example of how mainland Southeast Asian elite have gone from viewing water as a spiritual resource to exploiting a major waterway to the point of potential destruction. The exploitation of water and natural resources has gone from being a display and validation of a king’s spiritual prowess, to being a display and validation of a ruler’s secular power and control over the natural world.
The main fight against dams and other forms of exploitation on the Mekong these days comes from various NGOs and environmental groups that are pointing out the potentially negative environmental impacts that this large-scale economic development is having on the Mekong. The predictions of these groups serve a good indicator of the direction that the environment is heading now that the mainland Southeast Asian elite has made the transition from sacred to secular when dealing with the natural world.

However, despite the secular approach to the natural world that has been adopted by the elite and certain groups of common people in mainland Southeast Asia in recent times, the secular push for development by the mainland Southeast Asian governments, and the secular response put forth by environmental groups, respect for the spiritual nature of water and the natural environment still exists in mainland Southeast Asia. Ancient water festivals still occur each year and have retained at least some degree of their spiritual purpose, local villagers continue to worship water spirits in the Mekong, and Buddhist sects have arisen that are returning the focus to the spiritual aspects of nature in order to try to save mainland Southeast Asia’s natural resources. Yet while environmental groups that fight for the survival of the Mekong on secular ecological grounds, and Buddhist groups that defend water and the natural environment on spiritual grounds do exist, these groups occupy a marginalized space in society and hold little political or decision making power. This is in sharp contrast to the strong spiritual connection to water and the natural world held by both the elite and the common peoples in pre-colonial mainland Southeast Asia. With the secular elite holding the power and putting the development of the region above any proposed environmental or spiritual concerns, the question that is now being posed is, “Will the Mekong survive”? 
Chapter One of this thesis will investigate several examples of how elite and common peoples in mainland Southeast Asia viewed water as a sacred resource in pre-colonial times. Chapter Two will then look at the colonial period to show how Westerners introduced the ideas of secularization, the commodification of natural resources, and the ownership and demarcation of territory. Finally, Chapter Three will provide a case study of how the changes discussed in Chapter Two are currently affecting the Mekong River and attitudes towards water in mainland Southeast Asia. This chapter will trace the history of the development and exploitation of the Mekong River, and discuss the major environmental, social, and human concerns over the hydroelectric dams China is currently constructing on the upper Mekong, as well as the concerns over the blasting of the Mekong’s rapids recently undertaken by both China and the mainland Southeast Asian nations. This chapter will close by looking at the current state of spiritual beliefs involving water and the natural environment as a whole amongst the common peoples of mainland Southeast Asia. 

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4 It is important to note here that none of the issues mentioned in this introduction concerning the colonial influence on mainland Southeast Asia and the shift in approach that it created are discussed beyond the current mainland Southeast Asian borders, despite the fact that a large section of the Mekong runs through China. It is beyond the scope of this thesis to trace this same shift in China. However, based upon its government's current actions and attitudes towards natural resources such as water, which are similar in nature to these same actions and attitudes currently held in mainland Southeast Asia, it will be assumed that a similar shift did occur in China due to some form of non-colonizing Western contact.

5
Map of Mainland Southeast Asia (including Yunnan) and the Mekong River (Asian Development Bank)
CHAPTER 1- SACRED WATER IN MAINLAND SOUTHEAST ASIA

INTRODUCTION

In pre-colonial times in mainland Southeast Asia, water was viewed by its common peoples and elite as a resource with strong spiritual connotations. Local animistic beliefs placed high importance on the worship and respect of water deities in order to ensure continued rainfall and access to water, and these beliefs were eventually combined in many areas of mainland Southeast Asia with spiritual ideas introduced from India which also focused on the worship of the spiritual qualities of water. As no distinction between the spiritual and economic worlds existed in pre-colonial times, economic manipulations of water and the natural world by divine kings were undertaken in ways that were conscious of water’s spiritual essence. At the same time, these actions were seen by Southeast Asian peoples as an extension and validation of a king’s divine powers.

This chapter will investigate the spiritual connections of water in mainland Southeast Asia through examples of water use and symbolism by the elite in Angkor and Upper Burma, as well as through select water festivals and rituals celebrated and practiced by populations across mainland Southeast Asia. These examples will provide clear evidence of the spiritual importance that water held for the elite and common peoples alike in pre-colonial mainland Southeast Asia.
WATER IN ANGKOR

When looking at the spiritual importance of water to the elite in pre-colonial mainland Southeast Asia, there may be no larger, more spectacular example than the role of water at the Angkor temple complexes with their moat and baray systems. Located in Siem Reap in modern day Cambodia, these temple complexes were constructed during the Angkor period of Cambodian history, a period which stretched from the 9th to the 15th centuries, and were built based upon Hindu beliefs that came to Southeast Asia from India. The Angkor period began under King Jayavarman II, the first of 28 Angkor period kings, who reigned from 802 to 835 CE (Roveda 1997: 9). However, it was under King Indravarman I, (r. 877-889 CE) that the Angkor kingdom began to peak, and under whom the construction of major temple complexes was first begun (Groslier 1966: 34). Angkor Wat, the most recognizable and grandiose of all of these temple buildings, was constructed by King Suryavarman II during his reign from 1100 to 1150 (Roveda 1997: 10).

In order to fully understand the symbolism and nature of water in the Angkor temple complexes, it is first necessary to gain a basic understanding of some of the fundamental concepts of Hinduism that relate to water, in addition to knowing when and how the Indian religions such as Hinduism first came into Southeast Asia. This section will first explore some concepts of Hinduism, before discussing the process of Indianization in Southeast Asia, and finally returning to Angkor to show how these concepts connect to the symbolism and spiritual connection of water in Angkor.
Concepts of Hinduism

In order to fully understand the spiritual role of water in Angkor, it is first necessary to understand several concepts of the Hindu religion. These include the Hindu Trinity, Hindu cosmology, the idea of the Cosmic Ocean and Hindu creation myths, the linga, and legends involving water and the gods Shiva, and Ganga.

The Hindu Trinity

The first concept of Hinduism that is important to understand, is the concept of the Hindu Trinity, as the three gods involved are intimately tied up in many of the Hindu water myths that are symbolically represented in Angkor. Vishnu, Shiva, and Brahma are the three Hindu gods who collectively make up this Hindu Trinity. Vishnu is known as the preserver, and represents stability, law, and order. He is a god who from time to time comes down to earth in different incarnations to restore the balance between good and evil. He is seen as the creator of the universe, yet also becomes the destroyer at the end of the cosmic cycle when he re-absorbs the universe and begins another cycle. His vehicle for transportation is a divine eagle called Garuda.

Shiva is known as the great yoga master, as he often renounces the world and retreats into long periods of meditation. His most popular symbol is the linga, a phallic symbol which is worshiped in his temples. Also known as “Lord of the Dance,” Shiva uses dance to express his six supreme powers, namely creator, destroyer, and preserver of the universe, the concealer and revealer of truth, and the bestower of grace. With these powers, he dances the world into being at the beginning of the creative cycle, and later dances it into destruction and ash at its end.
Brahma was originally worshiped as another god of creation, yet lost much of his importance in later Hindu mythology. He came to be seen mainly as the stabilizing force between the creative and destructive powers of Vishnu and Shiva. He is often depicted as having four heads, one for each of the four Vedas, or ancient sacred Hindu texts, which reportedly were produced from each of his mouths. His vehicle is the goose (Dallapiccola 2003: 9-13). The Hindu Trinity frequently appears in Hindu myths of creation, which often begin from water. As discussed below, these myths are depicted and symbolically represented in several ways throughout Angkor.

Hindu Cosmology

Yet another important aspect of Hinduism that relates to water and water symbolism in Angkor is Hindu Cosmology. Hinduism teaches that this cosmology is a diagram for the layout of the makeup and functioning of the universe, and the harmonious livelihood and circumstances of earthly people are directly dependent on the earthly world and people's actions being in harmony with this universal cosmology. According to Robert von Heine-Geldern, these cosmological beliefs were what inspired all Hinduized architecture in Angkor and beyond. This cosmology was based upon the creation of the world, the relationship between microcosms and macrocosms of the greater universe, the four cardinal directions, astrology, etc. Hinduism's basic belief was that all parts of life, from people, to plants, to birth and death, to every common occurrence, all had its allotted place and time in the universe, and was governed and controlled by how these phenomena were either in alignment or misalignment with the planets, stars, and the macrocosm of the universe as a whole. People, kingdoms, daily
occurrences in life, etc. would all prosper only when in proper alignment with these forces, and wherever disharmony was found, some kind of misalignment with these universal forces was believed to be the root cause (Heine-Geldern 1942: 15-30).

According to these Hindu ideas, the universe was created with a continent named Jambudvipa in the center, and a sacred mountain named Mt. Meru in the middle of this continent. This central continent was then surrounded by six concentric rings of land which were separated by seven oceans, the outermost ocean being the largest, which was enclosed by a giant rock wall. Located on the top of Mt. Meru was the city of Brahma, the home of the gods (Coedes 1967: 40-41).

The Cosmic Ocean and Creation Myths

Within this Hindu cosmology, the outermost and largest ocean is believed to be the Cosmic Ocean, from which all life is created. The origins of this Cosmic Ocean are explained within the Hindu myths of the universal cycles of creation and destruction.

Hinduism teaches that there are 4 main stages, or yugas, in the life cycle of the universe. Holy Dharma, or spiritual righteousness, is strongly present in the first stage of this cycle, yet declines further and further as the cycles progress. Finally, the last stage, or the Kali Yuga is reached, where only unrighteousness and chaos prevail, at which time the Supreme Being and creator of the universe, Vishnu, sees the need to withdraw his entire creation back into the divine substance from which it was created (Zimmer 1974: 35-36). The world is then put through great cataclysms, until it is finally destroyed by a great fire that covers the earth, and burns everything down to only a smoldering ash. To quench this fire and ash, Vishnu then takes the form of a great rain cloud, and a heavy
divine rain immerses the world in water, and returns it back to its original divine origin at
the dawn of the universe, in other words, the waters of the Cosmic Ocean.

After this great period of destruction and return to original form, Vishnu rests,
taking the form of a giant sleeping partially submerged in a great sea of divine
nothingness. This is the perfect state of divinity from which everything was originally
formed, and to which it all eventually returns. Vishnu here is represented as being upheld
by the Naga, the mythical serpent that is the Hindu symbol for water and the watery
underworlds, also found often in Southeast Asian Buddhist temples, symbolizing the link
between the sacred and secular worlds (Zimmer 1974: 37; Rabibhadana 1992: 11).

However, ultimately, the Naga itself, the giant, and the ocean are all just manifestations
of the only true being from which all else has sprung, Vishnu, often represented as water.
As an ancient Vedic myth states, “In the beginning, everything was like a sea without
light” (Zimmer 1974: 34, 37-38).

Once this cycle of destruction and rest has taken place, Vishnu again re-creates
the universe. He gathers the energy within the water and stirs the water to create ripples
and waves. These ripples and waves create pockets of space where wind is formed. This
wind becomes stronger and stronger and whips against the water until the friction creates
fire, which burns and devours much of the water. In this waterless void, the upper sphere
of the heavens is born. Vishnu then sets out to create the earth itself. A lotus is formed
from his navel with a thousand petals of pure gold, and the God-creator of the universe
Brahma, who controls the power of the universe, is seated in the center of the golden
lotus. This lotus symbolizes the “highest form or aspect of the earth,” and the earth is
then created by Brahma. Out of the earth arise the Himalayan mountains, which contain
the life sap of the lotus (water), with Mt. Meru being the central peak of the universe, the
universe’s vertical axis, and the favorite abode of Lord Shiva. Once created, the water
which then flows down these mountains is considered to be the elixir of immortal life,
and runs into rivers that are considered sacred (Zimmer 1974: 51-52).

Water and the Linga

The linga is another important aspect of Hinduism that relates to Hindu
cosmology and mythology, and as we will see, has connections to water in Angkor. The
linga is commonly associated with Shiva and is found in Indian and Angkor temples
dedicated to Shiva.

A further version of the Hindu creation myth exists which involves the third
member of the Hindu trinity, Lord Shiva. It is said that in between the cycles of creation
and destruction, Vishnu was again floating contentedly on the waters of the ocean of
creation, when he was approached by Brahma. Brahma then questioned Vishnu as to who
exactly he was, as Brahma himself claimed to be the creator of all the universe. With
Vishnu making the same claim, a long argument broke out between the two, until they
were both silenced by a bright light and a flaming linga emerging from the ocean. This
linga grew longer and longer, until Vishnu and Brahma agreed to each pursue one end of
the linga in order to find out where it ended. Brahma went high into the sky, and Vishnu
dove deep into the ocean, but both eventually returned without being able to find the ends
of this linga. At that moment, the side of the linga opened and Shiva emerged,
announcing that he himself was the original creator of both Vishnu and Brahma. Shiva
stated that Brahma was in fact his right side, and Vishnu was his left side, and that from
then on Shiva himself must be worshiped as the creator, not in his human form, but in the
form of the linga. This myth shows that all creation comes from Shiva himself,
originating from the cosmic ocean and beginning with the form of his linga (Gupta 1979:
13-14).

What exactly is a linga? A linga is a phallic cylindrical form with a rounded top
which represents Shiva, sometimes including an octagonal middle section representing
Vishnu, and a squared bottom section symbolizing Brahma. Often, however, it is only the
cylindrical Shiva top of the linga which is visible in Shiva temples (Freeman and Jacques
1999: 25; Moorthy 1995: 17). The word linga is the combination of two words “Leenam”
and “Gamayati.” Leenam is a word that expresses that which we do not know, and
Gamayati denotes that which explains what is unknown to us. Therefore, the linga is a
form that has the power to enlighten worshipers to the unknown spiritual realities of the
universe. Its form is also symbolic of Hindu gods, who ultimately are formless, yet
assume a form for the sake of their devotees so that they may better personalize and focus
their devotion towards these gods. The linga too is formless, as a smooth cylindrical
shape with no arms and legs, etc. However, it still exists as a solid form for devotees to
worship (Moorthy 1995: 17). The linga is also phallic in shape, often seen as the form of
the erect male sex organ, although the linga is also usually accompanied in its form by a
round base called the “yoni,” representative of the female sex organ, womb, etc.
Therefore, the linga and yoni combined represent Shiva’s main power, that of procreation
(Smith and Chary 1991: 17).

In a Shiva temple, the linga is the main object of worship, often worshiped in a
ceremony that involves the pouring of water over the linga, and is considered to be the
sign or symbol of Shiva. It marks his presence and represents him as the creator of all existence, where all processes of creation and destruction start and end (Dye 1980: 62).

Shiva, Ganga, and Sacred Water

As we are investigating the sacred nature of water, what in fact is the connection between water and Shiva? And what is the symbolism of water being poured over the linga that takes place in Shiva temples? These water pouring rituals are in fact symbolic of the relationship between Shiva, the Hindu goddess Ganga, and the sacred Ganges river of India.

The goddess Ganga is a Hindu divinity said to live on Mt. Kailas, an actual mountain located in the Himalayan mountain range in Tibet, which is seen by many Hindus and Buddhists as the earthly symbol of Mt. Meru. Mt. Kailas/Meru, then, is seen as the axis of the world, and the source of all life giving waters. Furthering this claim, four rivers do in fact flow from Mt. Kailas, in the same way that four rivers flow from Mt. Meru in Hindu cosmology. Shiva’s main home is also said to be on the top of Mt. Kailas, and Ganga is represented as a heavenly river flowing though Shiva’s paradise. Ganga is also said to be the elder daughter of the Himalayan mountains (Singh 1974: 9-10). How the goddess Ganga came down to earth and created seven sacred rivers, including the Ganges in India, is told in the following myth.

The story begins with a king named King Sagara, a just king of India who after years of childlessness, retires to the Himalayas with his two wives in order to pray and meditate for a son to whom he can eventually pass on his kingdom. After some time, he is granted several sons, and King Sagara becomes a world conqueror in both the worldly
and spiritual sense. However his sons are one day burned to ash by an angry rishi named Kapila, who states that the only way for them to be saved and attain heaven would be if they are somehow purified by the waters of the goddess Ganga. Their father the king died without being able to bring Ganga down from heaven, but later a son of the royal family became king. Eventually, he decided to give his rule over to his aides, and traveled to the Himalayas to meditate and try to bring Ganga’s waters down to save the deceased former king’s sons. Over time, the gods became pleased with his persistence and ordered Ganga to fall to earth. Shiva himself even agreed to catch Ganga’s water in his hair from his home atop Mt. Kailas, in order to avoid the force of all this falling water hitting the earth and causing great damage and flooding. Shiva then caught Ganga in his hair and let her water down slowly, where it entered Lake Manasarovar, a true lake just south of Mt. Kailas, where it divided into seven sacred rivers, including the Ganges River in India, and spread to the far corners of the earth. It was one of these sacred rivers that also flowed to the ashes of Sagara’s sons and released them (Darin 1978: 17-19; Snelling 1990: 1).

This legend is why artistic representations of the human embodiment of Shiva often include water spouting from his hair, and also shows us the strong spiritual connection of Shiva to water. This connection of Shiva to water later spread into Southeast Asia and to the Khmers. The ritual in Khmer and Indian Shiva temples that includes pouring water over the linga is thus representative of Shiva releasing holy water from the Himalayas for the benefit of people on earth. This act can likewise be interpreted as the semen flowing from the phallic linga, representing Shiva’s endless powers of creation and regeneration (Darin 1978: 109).
Indianization in Southeast Asia

The question that remains to be answered is how these Indian ideas arrived and took hold in Southeast Asia? The following section will look into Indianization in Southeast Asia, the localization of these ideas, and how these ideas impacted the local rulers.

Indianization

These concepts of Hinduism that evolved in India eventually traveled from India into Southeast Asia. The concept of kingship and large scale temple building by the Khmer people was the product of the merging of these spiritual and political ideas from India with indigenous ideas in Southeast Asia. From 300 BCE to 300 CE, the coastal areas of Southeast Asia became part of what is known as the “Southern Silk Road,” a sea trading route that linked Rome with China (Higham 2002: 231). Southeast Asian coastal areas were the perfect location during this period for long distance cargo ships from India and China to stop before or after rounding the Southeast Asian peninsula and heading up to coastal trading areas in Vietnam and China or across to India, resulting in cultural influences from both areas entering Southeast Asia. Over time, a great deal of influence from the cultural and spiritual traditions of India made its way into Southeast Asia, a process which Western scholars refer to as “Indianization” (Higham 2002: 231, 235, 243).

These Indian merchants used the seasonal winds in the region to facilitate this trade, crossing the Bay of Bengal with the winds in November, and being delayed until the following May before they could return, when the winds shifted in the opposite
direction. Ships during this period had the capability to travel these long distances and carry up to 200 tons of cargo, and along with this cargo, the Indians brought with them more sophisticated traditions of statehood, spiritual ideas that connected rulers to divinity, and members of their society that included both Hindu Brahmans (a caste of priests considered to have attained divine knowledge) and Buddhist monks. With these trading crews waiting for approximately 6 months for the winds to change, and with certain members extending their stays longer or even permanently, certain elements of the Indian culture blended over time with the local Southeast Asian ideas through the professional and personal interactions of the groups (Higham 2002: 233).

Localization

When these Hindu and Buddhist ideas arrived in Southeast Asia, they were in fact not so foreign to the Southeast Asia population, and were able to blend fairly easily with pre-existing Southeast Asian beliefs and ideas. Enough similarities existed in order for the Indian religions to grow and prosper (Chandler and Mabbett 1975: xi). Before the arrival of world religions from India and China, the spiritual beliefs and practices of the people of Southeast Asia were predominantly animistic. Animism is a form of spiritual practice that centers around a belief in spirits and deities within the natural world, as well as a belief in an overall spiritual energy that exists everywhere and encompasses all things. These spirits and deities include deceased ancestors, spirits of the mountains, fields, and water, wandering spirits, gods of earth, fire, sky, thunder, etc. Yet while these deities can bring luck, health, protection, and bountiful harvests, they are also considered responsible for natural calamities such as volcanic eruptions, earthquakes, disease,
drought, and so forth. These spirits must therefore be controlled and appeased with ceremonies, offerings, and even sacrifice in order to attract their positive effects and ward off the negative ones (Casparis and Mabbett 1999: 280, 285; B. Andaya and Ishii 1999: 164-166). Going back in history to a time before the Aryans arrived in India and brought with them the sacred texts and ideas that were to evolve into Hinduism, a network of these animistic spiritual beliefs existed throughout monsoon Asia that were all quite similar in nature and compatible in certain ways with the spiritual ideas brought in by the Aryans. It was the similarities of these belief systems that allowed Hinduism to flourish in India, and Indian ideas to later flourish in Southeast Asia (Chandler and Mabbett 1975: x).

One example of the localization of Indian ideas involves the belief in an earth goddess that was prevalent throughout the entire region. This earth goddess corresponded more to the earth itself than to a personalized deity, although it could also embody a sacred site or object, allowing itself to be worshiped in a more personal form, and respond to prayers. In addition, local priests were able to embody this goddess during rituals (Mus 1975: 37). This belief can be seen more specifically in the earth genie cult of the Cham people, in what is today central Vietnam. The Cham worshiped animistic spirits of the earth and soil, whose sphere of influence helped to demarcate the territory of certain groups or villages. These earth genies embodied either a tree, post, or stone set into the ground, and were worshiped in ceremonies which involved pouring of water over them in order to bring fertility to the soil. With the introduction of Indianization and Shiva worship, the linga became the main object of worship and veneration, and soon came to replace the tree/stone/post embodiment of the earth genie. The linga was housed
in temples which were considered to be the center of a monarch's territory, and were
likewise bathed with water. Paul Mus has speculated that the Yoni, the stone at the base
of the linga to catches the water after it is poured, came to represent the soil that caught
the water in pre-Indian animistic fertility ceremonies (Mus 1975: 31-33).

Another example can be seen in pre-Indianized Burma, where an animistic cult of
fertility existed that worshiped male ancestors along with female goddesses of the
underworld. A tree and an earth mound were worshiped with offerings and ceremonies
for the male ancestor and female goddess respectively. It was the extent of the power
emanating from the female goddess and her mound that justified the boundaries to
demarcate the territory of a particular leader or village area.

When Indian influences arrived, these local animistic spirits, rather than being
lost, were simply assimilated into a new structure. For instance, in the Indian political
structure, a king was surrounded by 33 lords who represented the 33 gods of the
Tavatimsa heaven, in addition to 4 Lokapalas, who represented the 4 quarters of the
universe, totaling 38 in all. This influenced the kings of Burma to divide their territory
into 32 myos, or districts, with 32 corresponding district chiefs, the King, and 4 dukes,
(totaling 37, with one lords/gods from the Indian system lost in the transfer), and create a
corresponding system of 37 spirits, who were a combination of the previous male
ancestors and goddesses in the old animistic belief system and imported Indian deities,
known today as the 37 Nats. In addition, the former trees and mounds used for the
worship of the animistic spirits were later transformed into stupas with the advent of
Buddhism (Shorto 1967: 131, 140).
Craig Reynolds further states that Indian ideas transferred into Southeast Asia as smoothly as they did precisely because of their ability to make room for animistic ideas. For example, the Siamese were able to take the Buddhist cosmography's categorizations of the different creatures of the world, and include their animistic belief in the phi, or ghosts, in the level between the demons and animals. In this way, they were able to add the perceived prestige and power of the Indian religion to their own, thereby “upgrading” their own belief system (Reynolds 1976: 207).

Here we can see three clear examples of the similarity of a local Southeast Asian belief and a Hindu idea, and begin to understand that Indianization did not in fact simply replace or overrun the pre-existing Southeast Asian beliefs, but instead merged with them and added its new concepts to a pre-existing framework. This should be kept in mind as this chapter later investigates the sacred use of water in Southeast Asia, much of which intertwines with Hindu spirituality.

Men of Prowess and Divine Kings

One of the most significant beliefs that made its way to Southeast Asia from India, was the Hindu idea that kings embody the essence of a god. The local population believed that these kings were not ordinary human beings, but rather the human form of a certain god here on earth, thereby giving these kings divine status. This idea merged well with the pre-existing manner in which Southeast Asian rulers came to power, and allowed them to gain an even more legitimate and solid control over their domain. Prior to the arrival of this idea, Southeast Asian rulers were chosen for their status as “men of prowess,” or natural leadership, personal, and spiritual qualities that Wolters refers to as
“soul stuff” which made others respect and follow such people. However these holds on power were constantly in need of validation and were often in flux, with another “man of prowess” always in the wings waiting to take power for himself. What the incoming Hindu ideas did was to allow such rulers to solidify their claim to power by linking themselves to divinity (Wolters 1999: 18-19, 21-22).

These Southeast Asian rulers, as men of prowess who were recognized as having great personal spiritual power to begin with, therefore used this idea of divine kingship to claim for themselves the closest possible relationship with their god of choice, and were considered to actually carry the essence of this god that they had merged with within themselves. Should a king decide to align himself with Shiva, for example, then that king became part of Shiva’s divine authority. Followers now believed that they could gain their own spiritual merit and personal closeness to Shiva by worshiping this god-king who was part of Shiva himself. In this way, rulers were able to combine pre-existing ideas with new Hindu ones to establish a more lasting and legitimate form of power and rule in Southeast Asia (Wolters 1999: 22).

However, this divine kingship still needed to be legitimized. With the pre-Indian “men of prowess” in mainland Southeast Asia, validating their rule was based on continuous achievement, including the expansion and development of territory. However, when the idea of divine kingship arrived, displays of the spiritual achievement of the king became necessary in order to legitimize their spiritual connection to the deity they claimed to be a part of. It was their worldly and spiritual accomplishments that served to legitimize this divinity (Wolters 1999: 21-22). One such way of displaying their divinity was through the construction of large scale practical and spiritually symbolic works. As
pre-colonial mainland Southeast Asians viewed the sacred and secular worlds as one inseparable unit, any form of development under a king was considered to be a symbol and extension of his divinity, showing that the king indeed had the divine powers necessary to rule and improve the society.

Indianization in Angkor

The construction of temples and the development of water projects in Angkor was a key means by which the Angkor kings displayed and legitimized their spiritual prowess. Evidence of several moats, reservoirs, basins, canals, embankments, dikes, etc. still exist in Angkor that suggest the economic function of water in Angkor. Reservoirs were built to store drinking water for people and animals, to create fisheries, to grow a variety of aquatic plants, and to raise waterfowl such as ducks and geese, all of which contributed to the local economic system. The canals were built for the purposes of transport for people and goods, drainage, and some form of irrigation for growing crops such as rice (Garami and Kertai 1993: 23-24, 32).

In addition, the construction of temples and water works in Angkor based on the Hindu concepts that this chapter has previously looked at were also important in legitimizing the spiritual power of the kings and in harmonizing their kingdom with the greater spiritual universe. These Hindu concepts can be seen clearly when looking at symbolism of the temple complexes, their moats, the baray, and the use and placement of lingas.
Cosmology in Angkor

Much of the focus of the construction of the Angkor temples was on achieving harmony with the principles of the Hindu cosmology, in addition to legitimizing their rule and divinity. In order to achieve this harmony and display their divinity, the Khmer rulers of ancient Cambodia built their kingdom, capital, palace, temples, etc. to replicate a microcosm of this universal macrocosm, and tried to harmonize with all the laws of nature and the universe. Therefore, the temples that were built in Southeast Asia were really a way of making contact between the heavens and the earthly world, as their form and architecture were entirely representative of the myths of Hindu Cosmology (Heine-Geldern 1942: 15-30).

A good example of a Khmer city built in harmony with these cosmic principles is Angkor Thom, a city both restored and constructed by Jayavarman VII (r. 1181-1219 CE). Again a microcosm of the macrocosm, the layout of this city was designed specifically to closely resemble the Hindu universe (Coedes 1967: 40-41). The dimensions were not followed in exact detail by the Khmer builders when constructing the temples of Angkor, but included what they considered to be the most important elements in order to achieve harmony. The three main parts that were considered essential to this construction included a central temple representing Mt. Meru, an outer wall of rock representing the outer wall of the universe, and a moat surrounding the city or temple that represented the Cosmic Ocean. Angkor Thom contains all three of these elements in its architecture, with the temple mountain of Baghun as Mt. Meru, built in the 11th century by Udayadityavarman II. An inscription at the foot of the monument reads “because he thought that the centre of the universe was marked by Meru, and he thought
it fitting to have a Meru in the centre of this capital” (Coedes 1967: 41-42). This city was further surrounded by an outer wall representing the outer wall of the universe, which itself was surrounded by a moat representing the Cosmic Ocean, making a square which measured about 3 kilometers on each side (Freeman and Jacques 1999: 74).

The Baray

Another example of the Khmer cosmological water symbolism and display of divinity at Angkor is found outside of the actual temple complexes themselves. This grandiose and striking example is found in what are termed “baray” in the layout of the Angkor cities. These baray are a series of huge reservoirs that were built between the 9th and 12th centuries by the Khmer Empire (Garami and Kertai 1993: 29). The four main baray at Angkor are the North, East, West, and Indratataka Barays (Stubbs 1998: 57). The North Baray was built by Jayavarman VII (r. 1181-1210 CE), was 3500 meters long and 970 meters wide, held 4 meters of water in depth, and had a total storage volume of 10-11 million cubic meters. The East Baray was built under Yasovarman around the year 890, and was 7500 by 1830 meters in size. Its storage volume was approximately 55 million cubic meters, with a depth of 4-5 meters. The West Baray was the largest of the reservoirs, and built under Suryavarman I in about 1050. 7900 by 2200 meters in size, this baray could hold around 80 million cubic meters of water, and was approximately 5 meters in depth. It was built by constructing dike walls 30 feet high by 20 feet wide, which took 4000 men 3 years to assemble. Finally, the Indratataka Baray was constructed under the reign of Indravarman, and was 3800 meters long and 750 meters wide, held a depth of between 3 and 3.5 meters, and could store around 10 million cubic meters of
water. The amount of water held in these barays was so great, that if taken together, the North, West, and East Barays could hold a total of 49 billion gallons of water, or enough water to supply New York City for two and a half months. It has been theorized that the Baray were filled either by catching rainfall, or by the redirection of nearby rivers (Wall and Glassman 2002; Garami and Kertai 1993: 28-31).

Several theories have been set forth to try to explain the construction of these baray, and why so much effort was put into building them. Cambodia’s rainfall changes drastically from the wet to the dry seasons. For 6 months of the year, the country is dry, getting an average of only 8 inches of rainfall. But the yearly monsoon rains bring 4 feet of water to the country during the rainy season. Therefore, it has been theorized that these baray were necessary to hold water during the rainy season so that there would be enough to last through the dry season. In addition, these baray could also store water to prevent flooding, and their water supplies could then be diverted into the rice fields during the dry season. At its peak, Angkor was populated by as many as 1 million people, including the tens of thousands of workers who were needed to build their large temple and city works. To feed and support these numbers of people, it is estimated that 3 to 4 successful harvests of rice would be needed each year, a feat that even modern agriculture methods today would have trouble duplicating. Therefore, these water storage and diversion theories involving the baray make great sense (Wall and Glassman 2002).

To prove this, French archaeologists in the 1930’s mapped out a sophisticated water system, linking the barays, moats, and canals of Angkor to the rice paddies. The baray were built on higher ground than the surrounding fields, which allowed gravity to water the rice paddies. This theory was tested and proved successful twice in the 30’s,
and laid to rest most of the controversy surrounding the uses of the baray (Wall and Glassman 2002).

However, new technology in recent years has challenged and changed such views completely. In 1994, the space shuttle Endeavor carried with it a new instrument called a Space-Born Imaging Radar. This instrument used 1500 microwave pulses per second to travel and read the earth’s surface from an altitude of 160 miles up, giving previously unknown detail (Wall and Glassman 2002; Stubbs 1998: 56). This imaging system provided scientists with earth patterns that are impossible to detect from the ground, even detecting the slightest variations in texture, height, and moisture on an object as small as a tree stump. Ancient roads and canals were discovered, due to the slightly different vegetation now growing in these areas, and new Maya Ruins and sections of the Great Wall of China were also discovered for the first time (Wall and Glassman 2002).

Elizabeth Moore of the University of London used these radar images to further investigate Angkor itself. She had previously theorized that the baray and other water ways of Angkor were used for religions symbolic purposes, not irrigation for rice fields, being that all the stone scriptures in the area talked so much about divinity, yet mentioned nothing about the irrigation. In 1996, she was able to arrange her own flight over Angkor in a DC 8 aircraft from an altitude of 5 miles high, using similar technology that now had five times better resolution that that upon the space shuttle Endeavor (Wall and Glassman 2002; Stubbs 1998: 56). From these images, she was able to make a 3-D map of the site, and was unable to see any evidence that there had ever been any channels connecting the baray with the rice fields. This further backed up the theory that the Angkor baray were in fact constructed only for religious symbolic purposes. These images prove that the
baray were not used for irrigation, and strongly support the belief that the Khmer instead constructed them in order to represent the cosmic ocean described above. Interestingly, it has taken the scientific technology of modern times, to prove to us the spiritual value of water in Angkor’s past (Wall and Glassman 2002).

Lingas in Angkor

The existence and use of the linga is a final example of both the sacredness of water and Indianization in Angkor. Mythically, it is said that the linga arrived in Cambodia when it was given by Shiva to the founder of Angkor, Jayavarman II, through a Brahman intermediary priest, and installed on the first temple mountain in Cambodia, Phnom Kulen (Coedes 1967: 30).

In the Angkor Shiva temples of Cambodia, as part of the Devaraja cult, the linga symbolized the essence of a King’s royal divinity and his spiritual right to rule, as Shiva was at that time considered to be the greatest and most powerful of all the Hindu gods (Srivastava 1987: 47; Maxwell 1997: 17). These linga in Angkor temples were located in the center of the central temple, which itself represented Mt. Meru and the center of the universe (Maxwell 1997: 17). In this way, if Mt. Meru is seen as the center and the axis of the universe, then the linga at the center of the temple is also representative of the central axis and the source of universal energy (Dye 1980: 62; Zimmer 1974: 128; Maxwell 1997: 17).

This linga was often the focus of rituals by priests in the Khmer temples, a common ritual being one that involved water being poured over the linga. This water was then caught by the yoni slab beneath the linga and then drained out of a spout on the
side of the yoni, and collected as holy water by the faithful (Freeman and Jacques 1999: 19, 25). Any water that had been touched by the divine linga was then considered to be sanctified beyond measure (Smith and Chary 1991: 18).

The River of 1000 Lingas

These linga can be found not only in the Angkor temples, but also in the rivers running into the temple complexes. When the Khmers rulers built the great temple cities of Angkor, they also constructed elaborate water systems for transport, moats, reservoirs, etc. As we have seen, and shall see again below, many of the uses for this water were spiritual and symbolic in nature. These water systems were so elaborate, that it is said that by the 11th century, most of the rainfall and water coming down from nearby Mount Kulen could not reach lakes such as the Tonle Sap without first passing through some form of Khmer water works (Patt 1979: 37-38).

But before diverting such water into the cities for these sacred and practical uses, the Khmer rulers first demanded that this water be sanctified and holy. The Rssi River is a river which runs through Mount Kulen, near Siem Reap in Cambodia, and is the name for the upper reaches of the Siem Reap River. This Siem Reap River is the main water supply for the Angkor Plain, also flowing into the Tonle Sap Lake, and eventually into the Mekong River. In order to sanctify these waters, the Khmer constructed a site along the Rssi River approximately 650 ft. long that included carvings, reliefs, and inscriptions along the sides of the river bed, as well as many stone lingas carved directly into the river bed itself, often close enough together to resemble cobble stones. This section of river has therefore become known as the “River of 1000 Lingas.” The reliefs include repeated
depictions of Vishnu floating in the cosmic ocean supported by the Naga serpent, with Brahma sitting on a lotus that is protruding from his navel, telling the story of creation from water as described above (Patt 38). Inscriptions tell us that this area was built by King Suryavarman I around 1059 (Boulbet and Dagens 1973: 11).

These linga are then bathed by the naturally flowing water of the stream. They are often difficult to view in the rainy season, with water levels high and water murky, but become much more visible in the dry season months from January to April, when lower water levels and clearer water prevail. In addition to the cobble stone lingas along this section of river, other significant lingas also exist. In the upper section of the stream, the river at one point disappears under a section of rock, running under ground for a distance of about 60 meters, before reemerging. At its point of reemergence, a square stone container with a protruding entrance facing upstream collects this water as it flows out from under the rock. Inside this container are five linga, one central and four surrounding it, representative of Mt. Meru, which is sometimes shown to have five peaks (Boulbet and Dagens 1973: 10, 14). Further down the river, a linga was built at the base of a waterfall which separates the upper and middle sections of the river. This linga not only has natural water flowing over it, but also has water cascading down on top of it, perhaps symbolizing the legend of the Ganges descent (Boulbet and Dagens 1973: 11). After flowing over these lingas, the water is then considered sanctified enough to be used in temples, etc, below.

From all these examples, from creation myths and cosmology involving the Cosmic Ocean in the form of moats and baray, to myths of Shiva’s connection to water, to water and the linga, we can now clearly see the importance that water played
spiritually in the minds and actions of the Khmer elite. To the ancient Khmers rulers and common peoples, water equaled life. Water was the most precious of all resources, needed in order to grow the important crops such as rice that the survival of the people was dependent on. Being such a basic and important resource, it is easy to see how it could take on a very spiritual nature for the elite and peoples. Water equaled creation, fertility, growth, and survival for their entire world. Therefore, it is not difficult to imagine the relative ease with which the Indian spiritual beliefs, especially those involving water, were adopted into their culture. Could this perhaps be one of the reasons that Shiva was considered the most powerful of the Hindu gods and was the most commonly worshiped, as Shiva was so often connected to water? In the Hindu creation myths, all creation evolves from the basic creative nature of water. The Shiva linga itself emerged from water. Sacred water from the Himalayas from the goddess Ganga, via Lord Shiva, created the holy Ganges River and brought sacred water to all corners of the earth, a legend re-enacted in both India and Cambodia by pouring water over the Shiva linga. It is said that all water that touches the sacred Shiva linga is then sanctified. With the construction of the River of 1000 Lingas, it is clear that this view was held very strongly by the Khmer elite. For the water flowing naturally over these linga in the river bed flows next into the Siem Reap river, which in turn flows through the plain of Angkor, including the temples, moats, canals, etc. constructed by the Khmer. Further down, this water flows into the Tonle Sap Lake, down the Tonle Sap River, and into the mighty Mekong itself. In this way, all of the waters of this entire system become sanctified by the lingas, solidifying the connection between fertility, life, and creation in the Khmer world, and its fundamental link to a spiritual purpose and origin.
WATER IN UPPER BURMA

Select pre-colonial societies in what is today known as Upper Burma provide further examples of the use of water projects in mainland Southeast Asia to display the spiritual prowess of local kings, and harmonize their kingdoms with Indian concepts of the spiritual universe. Efforts to appease local water spirits and deities were also undertaken in order to insure that these water projects would run smoothly and not offend these important spirits and deities.

Irrigation in Upper Burma

The geography of Burma is dominated by three main mountain chains that run north to south. These are the Arakan mountains, the Pegu mountains, and the Shan Hills. The country’s two major rivers, the Irrawaddy and the Salween, run between these mountain chains, creating large north-south river valleys, with the Irrawaddy Valley historically being the most fertile rice growing area in the country. Despite the fact that much of this valley is located within the Dry Zone of Upper Burma with very low rainfall, this area was still able to produce large quantities of rice, due to complex and extensive irrigation systems that were constructed by the area’s early inhabitants to supply this area with the necessary water (Aung-Thwin 1988: 202).

During most of the pre-colonial period, the economy was based mainly on rice growing in the Dry Zone. Most of the Burmese dynasties knew this and therefore built their capitals in this area. They knew that if they controlled this area, then they controlled Burma (Aung-Thwin 1990: 3). However, the Dry Zone receives only between 19 and 47
inches of rain per year, whereas wet rice usually needs no less than 40 inches per year (Luce 1985: 286). This supply of water is even more important than soil when growing rice (Cheng 1968: 18).

To overcome this water shortage problem, the Burmese elite took advantage of four smaller rivers that run through the Dry Zone, the Sarnon, Panlaung, Zawgyi, and Myitngae (Luce 1985: 286). These rivers flow down narrow river valleys that catch large amounts of water, originating from higher elevations with greater rainfall, and then flow down into the Dry Zone, bringing with them continuous year round nutrients. Rice grows best at high temperatures with a great deal of sun and water, and so with irrigation systems in place, the Dry Zone was able to provide all three of these key factors, and became the ideal location for rice growing in Burma. The Dry Zone remained the premier rice growing area in Burma until the second half of the 19th century, when the British cleared and drained Lower Burma, allowing it to surpass Upper Burma in rice production (Aung-Thwin 1990: 2).

The Pyu, Mon, and later the Burmese, various ethnic groups of Burma, developed complex irrigation systems from these rivers that allowed them to have access to the necessary supplies of water for growing rice (Hall 1968: 156; Steinberg 1982: 17; Luce 1985: 286). These irrigation systems were sponsored, constructed, and maintained by the kings and royalty of these groups (Htin Aung 1967: 55-56). Before the arrival of the Burmans, the Pyu already lived in an irrigated society, as evidenced by their remaining rice fields and irrigation systems that can still be viewed today. The Pyu kings built large hydraulic systems throughout Upper Burma which were an important part of their civilization (Stargardt 1990: 53-54). With the lack of resources available in the Dry Zone,
the invention of irrigation, field management, and dykes, etc, was necessary for the survival of the Pyu. This technological development brought with it the ability to grow not only subsistence levels of rice and other crops, but to actually have a surplus, leading to the further expansion of the Pyu, and the development of a greater centralization of power in their society (Stargardt 1986: 30-31). The ability to construct such extensive irrigation systems to expand and centralize their society clearly reflected on the spiritual prowess of the Pyu kings.

The Burmans first arrived on the plains of Burma in the Kyaukse Valley in the Dry Zone, and later spread from there to other regions of the country. As they gained control of these previously inhabited areas, they also gained control of the irrigation systems already in place (Luce 1985: 286-287). The Burmans first learned irrigation technology from both the Pyu and Mons, and their kings later sponsored construction of their own irrigation systems, mostly during the Pagan period (Aung-Thwin 1990: 2). The Burman elite soon discovered that production of rice was much more crucial to the survival of their kingdoms than trade from the coastal areas. Long distance trade had proved to be unpredictable and based upon outside factors that the Burmans themselves could not control, however with the irrigation systems in place in the Dry Zone, a dependable, stable, and predictable economic base was established for current and future Burmese kingdoms (Aung-Thwin 1990: 4, 62; Steinburg 1982: 17). Among other things, the surplus created by this irrigated rice agriculture allowed the construction of the Pagan temple complexes (Htin Aung 1967: 58). Again, the economic stability and temple construction made possible by the irrigation systems reflected positively on the spiritual powers of the Pagan kings.
At their peak, these irrigation systems in Upper Burma are calculated to have been capable of feeding over five million people. In addition to this, a surplus of around 36,553,670 pounds annually was available. This would have been enough to build 7.5 temples per year during the Pagan period, at the size of approximately six million bricks per temple. This surplus would have been enough for the building, repair, and maintenance of thousands monasteries and temples across Burma, and been a key means by which the king was able to display and legitimize his spiritual power, with this surplus and spiritual power also allowing him to retain and exercise his political power (Aung-Thwin 1990: 58, 61, 63).

Insuring the cosmological harmony of certain water ways, and appeasing spirits of the areas where the irrigation projects were constructed were also of great importance in Upper Burma. When the irrigation systems in Pagan were constructed, a pagoda and a nat shrine were built nearby to insure the success of the system and appease the local nature and water spirits of the area. In addition, the pagodas were built in strategic locations to allow them to double as sights for estimating the water levels of the river (Aung-Thwin 1990: 16).

The Pyu urban area of Sri Ksetra shows the cosmological importance of water projects in Upper Burma. The irrigation systems constructed by the Pyu kings extended beyond their fields, and into their cities. Three great moats and a large tank surrounded and fortified the city of Sri Ksetra, with all the water moving in the same auspicious clockwise direction. There was a citadel constructed at the center of the site, acting as a hub for the canals that ran from the center to the surrounding moats, like spokes on a wheel (Stargardt 1990: 105-106).
Such wheels have long had important spiritual symbolism in Vedic, Hindu, and Buddhist literature. In the Vedic tradition, the wheel represents the path of the sun and the god Varuna, and symbolizes righteousness and order. In Hinduism, it is the all-conquering wheel of the god Indra that symbolizes force, majesty, and plunder. And in Buddhism, the wheel symbolizes righteousness, and is known as the wheel of the Dharma (righteousness) Law. In addition, Buddhism also recognizes the concept of the cakravartin, or a righteous world ruler who uses the wheel to authenticate himself. The wheel can also be found in Indian cosmology, where the universe is represented as a mandala (Stargardt 1990: 106-107).

Similar to what we have seen previously at Angkor, Indian cosmology was also strongly represented in the layout of this Pyu city of Sri Ksetra. The citadel was presumed to be representative of Mt. Meru at the center of the world, with the outer walls of the city as the Cakravada Mountains that are said to surround the world, and the moats and tanks as the cosmic ocean. With the water moving in the auspicious clockwise direction, the wheel of the Dharma (righteousness) Law appeared to be moving around the center citadel, turned by the righteous king himself (Stargardt 1990: 108-109, 111-112). Here again we can see the intertwining of the spiritual and economic in the Pyu water projects, as well as efforts to represent the spiritual power and divinity of the local kings.

WATER FESTIVALS AND RITUALS IN MAINLAND SOUTHEAST ASIA

Aside from the Khmer and Burmese examples of the pre-colonial importance and sacredness of water to the elite in mainland Southeast Asia, several water festivals with
roots in the pre-colonial period, including Loy Krathong, Songkran, and the Sky Rocket Festival, currently take place throughout the region which give evidence of the spiritual importance of water to the common peoples of mainland Southeast Asia in modern and earlier times.

**Loy Krathong**

Loy Krathong is a major mainland Southeast Asia festival that is centered around both water and a water goddess. This festival is celebrated in several regions of mainland Southeast Asia, including Thailand, Laos, Burma, and Yunnan province in southern China.

**Loy Krathong in Thailand**

Loy Krathong is an annual festival in Thailand, which is held in the 12th month of the lunar calendar, generally falling within the month of November (Gerson 1996: 44). The word “loy” in Thai means “to float,” and “krathong” is the name given to a small boat that is used to float offerings in water ways during the festival (Plion-Bernier 1973: 81). Loy Krathong literally means, then, to float one’s offerings (Gerson 1996: 44). This festival is said by some to have reached Sukhothai around 700 years ago, while others claim that it began even earlier in the Northern Thai city of Lamphun. Loy Krathong is held during a break in the agricultural cycle, when farmers have finished the heavy work of plowing and planting, and have a gap until harvest time. The rains from the monsoon season have begun to slow at this time as well, leaving a perfect window for a water based festival (D’Silva 1994: 56).
The boats people float historically have often been made from banana leaves that are formed into a cup shape to resemble a lotus flower (Samosorn 1988: 55). Lit candles, incense, coins, flowers, and betel nut are also placed into this lotus cup as offerings (Rajadhon 1955: 4). What offerings are placed into the Krathong often depends on the financial status of the owner of the Krathong, with the poor generally offering fruit, rice, and flowers, while the better off may include coins or even bank notes (Plian-Berneir 1973: 82). This money was originally designed as an offering, yet in later times has become a means of donating money to the poor, as their children often wade out into the water further down stream and take the money attached to these Krathong (Gerson 1996: 45; D’Silva 1994: 59).

In addition, people often pile food and clothing on the larger Krathong, hoping that these items will be found downstream by the needy. In this way, they hope to transfer their own sins via this clothing to others and thereby cleanse themselves (D’Silva 1994: 57). The origins of this floating away of clothes and food is said to originate in Northern Thailand, when there was once a town stricken with a cholera epidemic which caused the deaths of many people. Because of this, the town’s people fled to the Burmese areas of Pagan, Thaton, and Pegu to escape. Six years passed by before it was deemed safe to return, and in order to remember those who died, many of whom were the elderly who had to be left behind, floating houses of money, food, and clothes were placed in the river on the full moon day that occurs around November (Hongvivat 1980: 53).

In this festival, the Krathong is taken down to the edge of a waterway, such as a river, canal, etc, in the evening when the full moon shows itself, and placed into the water with both the incense and candle lit. Prayers are usually made at this time, as the owner
of the Krathong watches it float away, often in procession with thousands of other
Krathongs lighting up the night (Prachasamphan 1968: 76, 79). Owners of the Krathongs
often stay and watch anxiously after the release, as it is considered bad luck if the
Krathong sinks too soon (D’Silva 1994: 59).

The purpose of this festival is to apologize and ask forgiveness from the water
goddess for polluting, misusing, and generally de-sanctifying the water throughout the
year. Water is recognized as the most basic source of life, crucial for agricultural success,
and therefore should be cared for and offerings made to the water goddess, named Mae
Khongkha (D’Silva 1994: 56), or the Mother of Water (Rajadhon 1955: 5).

It is this water goddess whom they are asking forgiveness from, Mae Khongkha,
who traces back to Indian mythology. In the Thai language, “Mae” translates as
“mother,” while Gerson has written that Khongkha is in fact the Thai pronunciation of
the Indian goddess of water and giver of life, Ganga, whom we have already investigated
above (Gerson 1996: 44-45). This becomes even more interesting when looking at the
name of the Mekong River. This river is called “Mae Nam Khong” by both the Thai and
Lao, “Mae” again meaning “mother,” “Nam” meaning “Water,” and “Khong” seeming to
be a shortened version of “Khongkha” or the Thai pronunciation of Ganga (Kasettsiri
2003: 4-5). It does not seem too far of a stretch, then, to link these names to our Ganga
research above, and conclude that the Thai and Lao regard the Mekong River as one of
the seven sacred rivers flowing from Ganga, via Shiva on Mt. Meru/Kailas, and to every
corner of the earth. In any case, however, it is clear that the sacred worship of water and
water goddesses existed in Thailand in a similar fashion to what we have seen in
Cambodia.
Aside from these Hindu associations, Loy Krathong also has its origins in Buddhist legend. It is said that while the Buddha was meditating in order to attain enlightenment next to a river in India, a maiden passed by and recognized him as a great man, due to his powerful aura. She later returned with a meal for him in a golden bowl, which the Buddha then tossed into the river, attempting to make it float upstream in order to gain a sign as to whether or not he would eventually gain enlightenment. The bowl did indeed float upstream and confirm his eventual enlightenment, drifting further up river until it sank and landed on the head of the Naga king, the serpent of the waters. Upon recognizing this bowl as belonging to the future Buddha, the Naga king came up from the depths and begged the Buddha to leave his eternal footprint in the sand for people to see, a footprint that can still be seen today (Gerson 1996: 47). So from the Buddhist perspective, in addition to the water goddess, the Loy Krathong festival also honors the Buddha, the golden bowl, and the footprint (Samosorn 1988: 54).

Older animist rituals are also involved in Loy Krathong, with farmers asking Mother Rice (Mae Phra Pho Sop) to bless their harvests in the upcoming year. However, with the mixing of all of these Hindu, Buddhist, and animist beliefs within Thailand, it has perhaps become impossible to trace the origins of this and other festivals and beliefs, as by now all three have blended in so many complex ways (D’Silva 1994: 56).

Loy Krathong in Other Areas of Mainland Southeast Asia

Thailand is not the only mainland Southeast Asian country that celebrates Loy Krathong. The peoples of Burma and Laos and Yunnan province in southern China also take part. In Burma, this festival also has connections to the Naga, the mythical serpent of
the waters, known there as Phya Nak. Legend has it that when Asoka, India's fabled ruler who converted to Buddhist teachings, was attempting to build 84,000 pagodas throughout his kingdom, he was continually foiled by the efforts of a god by the name of Mara, The Destroyer. Asoka therefore asked for help from a monk named Upagut, who then relayed this request to the Naga to help defeat Mara. Eventually, because of the Naga's help, Asoka was able to complete these temples. Therefore, on the 12th lunar month, the Burmese remember the help and kindness of the Naga in helping the spread of Buddhism, and perform the Loy Krathong festival in his honor (Premchit and Dore 1991: 31).

A similar festival takes place in both Northeastern Thailand and Laos. Here it is referred to as Lau Hua Fai where people in the region bring items such as flowers, incense sticks, bananas, candles, sweets, etc. down to a boat on a river, which is constructed of banana trunks and bamboo, to a length of around 3-4 meters. Around 7 or 8 pm, the candles and incense sticks are lit, and then the boat is set adrift in honor and worship of the Buddha, the goddess Ganga, and the Naga of the river (Premchit and Dore 1991: 19-20).

In Sipsongpanna in the Yunnan province of China, a festival related to Loy Krathong is also celebrated. In modern times, this festival is celebrated in April, along with their Songkhran festivities. However, instead of floating lanterns, the local people float hot air balloons over the land and water (Goodman 200: 329).

**Songkhran Festival**

The Songkhran festival in mainland Southeast Asia is perhaps the most popular water festival within mainland Southeast Asia and the most well-known around the
world. Popular for its water-splashing fun, this festival also has strong spiritual connections that reveal the sacred nature of water in the region. This festival is most famous to us today from its form in Thailand, although similar festivals also take place in Burma, Laos, and Cambodia, and Yunnan.

Songkhran in Thailand

The Songkhran festival in Thailand is a water-based celebration of the New Year, and takes place annually from the 13th to the 15th of April. The name Songkhran is actually the Thai pronunciation of the Sanskrit word “Sankranti,” which is a word that describes the sun’s movement within the zodiac in the ancient Indian solar calendar. The full name of this movement from the month of March to April is called Maha Songkhran, or Great Songkhran, but has been shortened to Songkhran (Pramchit and Dore 1991: 113; Setudeh-Nejad 1997: 56; Manilerd 1988: 14). As this name suggests, this festival originally came to Thailand from India. This assumption is also supported by the fact that a similar festival called Holi is held in India around the same time, which has much in common with the Thai Songkhran festival (Lookeast 1991: 40-41). Some have further argued that Songkhran may have originally come from another similar festival in Persia, know as “Abrizan” (Setudeh-Nejad 1997: 57). But wherever its origins, Songkhran is said to have been brought to the Lan Na kingdom in what is today Northern Thailand by the Burmese king Anuruddha in the 11th century AD, and from there it eventually spread to the rest of Thailand (Premchit and Dore 1991: 114).

The Songkhran festival comes annually at a perfect time for a water-based festival. Mid-April is one of the few breaks in the agricultural year for the Thai farmers,
as they await the time to plough their fields and have a chance to rest and enjoy life.

Work is stopped entirely, as it is believed that what one does during the New Year period is what one will experience for the rest of the year. Therefore, not wanting the coming year to be filled with hard work, the farmers rest and celebrate (Prachasamphan 1968: 56; Wongthes 1987: 18). Many smiles will be seen throughout this celebration, as it is said that any display of anger, irritation, or ill-will will also stay with a person for the whole year (Hongvivat 1980: 50).

Various celebrations take place during this festival that involve the use of water for sacred symbolic purposes. One such ritual involves the gentle pouring of water on respected people and the urns of the ancestors in order to pay tribute to them, as well as to ask for their blessing (Seesalab 1989: 11, 14). Young people go to visit older relatives and parents to pour water over their hands and bathe them, while people also visit the local temple and pour water over the hands of the monks (Kishenko 2004: 141; Seesalab 1989: 11, 14). This water pouring signifies a spiritual cleansing and blessing, as well as a purification of the soul and a fresh start for the New Year (Lookeast 1991: 40; Prachasamphan 1968: 56). This fresh start and cleansing is also achieved symbolically by Thai people cleaning their houses thoroughly just before the New Year (Hongvivat 1980: 50). But it is not only the monks and respected elders who get bathed with this water during Songkhran. All sacred images such as Buddha statues get bathed as well, also to symbolize purification for the New Year (Rajdhon 1990: 19-20).

However, this festival is not only about the gentle pouring of water on respected members of society and family. The most famous and visible custom of the Songkhran festival is the all out water fight that takes place across the country, where no one
walking the streets for these three days is exempt from a good soaking. But while this
nation-wide water party is seen by some to be a break from the more respectful and
spiritual practices of sprinkling water on elders, monks, and religious statues, others see it
as falling right in line with all of these (Kislenko 2004: 142). For in the belief systems of
both Buddhism and Hinduism, people themselves are also a house for divinity, with
every person containing a spark of the divine essence. So this practice of splashing
people with water is in fact a way to purify and cleanse their souls as well. In this light,
this Songkhran water fight then becomes comparable to a mass baptism (Lookeast 1991:
40, 42).

A Hindu legend describes the mythological roots of this celebration. It is said that
the god Brahma one day got into a debate with a wise youth named Dhammapala. Unable
to settle this debate between themselves, it was eventually taken to a arbitrator, with the
agreement that the loser would lose his head. Therefore, when Dhammapala finally won
the debate, Brahma's head was cut off. However, there was then the question of what to
do with the head, for if it touched the earth, all would burn up. And if it touched the
ocean, all the waters on earth would dry up. Therefore, his head was given to Brahma's
seven goddess daughters, with each of them taking turns holding it for one year. At the
end of this year, the goddess holding the head would bathe it in order to cleanse and cool
it, and then pass it on to the next, starting the New Year (Premchit and Dore 1991: 113-
114).

However, the meaning of the Songkhran festival also has its agricultural roots and
symbolisms. The farmers of Thailand who comprise most of the rural populations believe
that this water is symbolic of rain falling throughout the coming year. They believe that if
no water is thrown, then likewise, little rain will fall, adversely affecting their crops. This is the belief of like equals like, so that the more water that is thrown, the more rain that will fall, bringing better harvests (Lookeast 1991: 44). It is the traditional belief of the rural people that the rain comes from the Naga playfully spouting water from a heavenly lake in the Himalayas, and that the sight of the people on land enjoying themselves by playing with and splashing water during this festival will encourage the Naga to spout and play more themselves, thereby bringing more rain (Rajadhon 1955: 22-23). It is appropriate that this water-based festival is held in April, towards the end of the dry season when the land is subject to drought, and farmers are hoping for the rains to return soon (Setudeh-Nejad 1997: 57).

The influence of Indian and Hindu ideas can frequently be seen in all of the previous examples of the sacred aspects of water in Southeast Asia. However, it should not be assumed that all such beliefs in the sanctity of water are imported from the outside. As mentioned earlier, much of what was imported from India was not simply blindly adopted, completely replacing any indigenous belief systems. Instead, most of it was mixed and added on to local ideas, creating a new and unique Southeast Asian belief system (Higham 2002: 233). The previous look at the agricultural beliefs about the symbolism of Songkhran is a good example. Clearly, the importance of water for agriculture did not suddenly strike these farmers upon the arrival of Indian ideas, prompting them to celebrate with water festivals in order to bring more rain. This seems sure to have already have been in place in some form or another. However, we can see in the end the ways in which the Indian ideas were then mixed in, with the addition of the belief in the Naga spouting water in order to make it rain. This seems to be a clear case of
the localization of an Indian belief. The pre-Indian local belief system is shown in the
following further example of rural populations calling for the rains.

A couple of weeks after the Songkhran festival, if the weather is still hot and dry, the
farmers of rural northeastern and central Thailand begin to worry that they will not be
able to plough their fields in time. Therefore, they resort to magic in order to try to obtain
the desired results. One form of this magic is to tie a female cat on to a stretcher that is on
poles, and have young boys and men carry the cat around the village, accompanied by
loud instruments and a great deal of drinking. Along the way, the procession stops in
front of each house to sing and dance. “Hail! Female Cat, give us rain, give us
consecrated water to pour on the female cat’s head. Give us cowry shells (symbolic of
money), give us rice, give us a wage for carrying the cat.” This is then followed by “The
rain falls in four copious showers. A thunder bolt strikes a nun. Strip off her clothes and
see the vagina. The rain pours down heavily, pours down heavily.” The owners of the
house then come out and pour water on the cat and give small amounts of money to the
procession. This symbolism is interesting, as cats are notorious haters of water, much
preferring dryness. So pouring water on the dryness-loving cat is akin to rain finally
falling on the dry earth, the cat’s squirming and shaking off of the water symbolizes and
induces rainfall, and the use of a female cat can then be linked to fertility and abundance

In such rural areas, there exists the animistic belief in a Mother Earth, who is seen
as a goddess of fertility, and a Sky God, who is the god of rain. The use of obscene words
in the songs are used to remind the Sky God to do his duty and send his rain (semen)
down to the earth in order to grow the crops.
Another rain evoking ritual done in these rural central areas, involves using the clay figures of a man and women in sexual union, called “pan mek” or “shaping a cloud.” While shaping these clay figures, a magical spell is placed on them, called a “mon,” most of which contain obscene or sexual words. These clay figures are then placed near agricultural fields or along pathways. A common spell that is recited goes, “Shape a cloud and recite mystically the spell. Take a cloth to screen human beings. Shape the vagina then the rain will pour down heavily, pour down heavily” (Rajadhon 1990: 40-41).

Going back to the Songkhran festival, we can now see its origins in both religious and agricultural contexts. Within the agricultural contexts, the water festival is geared solely towards fertility and reproduction of crops. Interestingly though, in the urban celebrations of this festival, fertility and reproduction also seem to play a role. Much of the water splashing and game playing traditionally occurs between young single males and females, with Songkhran being a rare time when social restrictions between the sexes was loosened and great flirting and interaction between them could take place, perhaps later leading to marriage. So here in the urban setting too, we also find hints of fertility and reproduction in the Songkhran water festival (Lookeast 1991: 45; Rajadhon 1990: 23; Gerson 1996: 37).

Songkhran in Other Areas of Mainland Southeast Asia

Like the Loy Krathong festival discussed earlier, Songkhran is also celebrated across much of mainland Southeast Asia. Songkhran in Laos is called “Auk Pansaa,” and is held every year in April at the end of the hot and dry season. This festival is similar to
the celebrations in Thailand, in that the Buddha statues are sprinkled with water, houses are swept out to cleanse them from any evil from the previous year, and clothes are washed (LeBar and Suddard 1960: 56-47). Likewise, agriculturally this festival occurs during the growing season, with the water throwing calling the rains and representing fertility and other such rites of spring (Archaibault 1971: 3-4; LeBar and Suddard 1960: 56-57). The more water is thrown, the more rains will come and the more fertile the lands will be. In the southern areas of Laos, in addition to the water throwing, a tug-of-war is held between the sexes, with the girls always being allowed to win. This reverse in the natural order of things, as men are usually physically stronger than women, is said to also bring abundant rains for the following year (Archaibault 1971: 5).

As mentioned earlier, it is thought that Songkhran first came into Southeast Asia through Burma, and in Burma it is also celebrated with much water play (Lookeast 1991: 45). While some aspects of the festival may have changed, the celebrations today are likely more or less the same as they were over a century ago in 1882 when Sir James George Scott (Shway Yoe) observed and recorded information about them in detail.

This New Year’s festival is one of few festivals in Burma that has traditionally been celebrated across the whole country by all of its many different ethnic groups. The Burmese New Year takes place in the month of Tagoo, the first month of the year, in the spring around the first half of April. This is not a fixed date as it is elsewhere, but changes due to the calculations of astrologers who chose when the time is right. Mythically, this is said to occur when the king Tha-gya comes down from the heavens, and the predictions for the coming year are based on what he is carrying and what
When this day does finally arrive, a wise man gives the signal and cannons are fired off to let the people know that the day has come. People then come out of their houses with pots full of water and leaves and twigs from the sacred tha-by tree, say a formal prayer, and then pour the water onto the ground to signify the start of the New Year. After this, the Burmese people take a pot of clean water to the local monastery and presented it to the monks before washing the temple's sacred images. This washing represented "cleanliness, beauty, stateliness, proper position, majesty, and repose," and is usually done by the women (Scott 1963: 349-350).

Leaving the temple and walking along the streets, one will come across many children splashing passersby with water, as well as members of the opposite sex splashing one another. The origin of this custom in Burma again lies in rain making, with the same legend of the debate with the loser losing his head as we saw in Thailand. The only difference in Burma is that the character of Brahma in the story is replaced by the Burmese god Thi-gya (Scott 1963: 350, 354-355).

In Cambodia, this New Year's water festival is called "Chaul Chhnam Tmei" (Te 1988: 80). Similar to Burma, the date is set by astrologers each year, although the most common date is the 13th of April. Buddha statues are washed at the temples, parents and grand parents are bathed in order to show gratitude, houses are swept out to rid people of the bad luck from the old year, and the people engage in water throwing throughout the holiday (Sharma 1994: 135; Te 1988: 80).
Finally, Songkhran is also celebrated in April in Yunnan province, what is today southwestern China, by the mainly Buddhist Dai minority group. Other surrounding minority groups also join in the celebration, although to a lesser extent than the Dai. The most well known Songkran celebration occurs in the prefecture of Sipsongpanna, in the prefecture capital of Jinghong. In recent history, other Dai festivals that traditionally occurred at various times of the year have been moved by the Chinese government to be celebrated all at once in April with the Songkhran festival, making this a festival period to celebrate the Dai culture as a whole. In recent years, this festival period has become increasingly important to the Dai, as further Chinese and Western influence impacts their culture. The Songkhran festival has now become a time for the Dai to celebrate what they hold to be traditional Dai culture (Komlosy 2004: 351-353, 358, 365-366; Goodman 2000: 372).

As in other areas of mainland Southeast Asia, water is splashed amongst the participants in order to wash away their sins for the coming year. The Dai people believe that the gods visit during this period to assess their sins, and use this opportunity to ask the gods to end the water scarcity of the dry season by splashing water to bring the rains. The Songkhran festival first starts with a parade through the city led by the Dai monks. This parade begins at the local government offices and ends at the largest Buddhist temple in the city, symbolically recognizing both the sacred and secular authorities in the prefecture. The parade is led by a white truck carrying a large Buddha statue, and followed closely by beautifully dressed women, men in demon costumes, and a group of 40-50 monks which provide a spiritual barrier between the demons and the lay peoples following behind them (Komlosy 2004: 357-361).
When the parade arrives at the temple, the people make offerings to the Buddha, and a decorated bamboo scaffolding is set up with a bamboo tube called a “Dragon Trough” protruding from it in order to pour water over the Buddha statue. Silver tea pots and plastic containers are used to bathe the Buddha as well, and the crowd attempts to catch the holy water running off the Buddha. Next, people dip leaves into water and begin to sprinkle it on monks and other people in order to bless them for the coming year. However, the leaves are soon abandoned and full-fledged water splashing begins. This water splashing mainly takes place in Jinghong city however, and is less common in the outer areas where aside from the children, the more traditional practice of gently pouring water over people as a blessing is practiced (Komlosy 2004: 368; Goodman 2000: 327-328).

The practice of bathing the Buddha is said to reenact the Dai myth that at the Buddha’s birth, dragons came to bathe him by spraying perfumed water over him. It also recalls that when the Buddha finished all of his ascetic practices, it was not until he bathed in a river that he felt refreshed and spiritually cleansed enough to be ready for enlightenment. In addition, the myth of the king’s burning head that has been shown in other parts of mainland Southeast Asia also is used amongst the Dai in local variations to further explain the water pouring ritual (Goodman 2000: 328-329).

Dai groups in the Dehong prefecture of Yunnan which borders Burma also celebrate Songkhran. There it is celebrated all across the prefecture by various groups, including the Buddhist minority groups of the Achang and De’ang (Goodman 2000: 469-470).
Another example of the sacred nature of water to the people of mainland Southeast Asia is the Bun Bang-Fai festival, or Skyrocket Festival, which takes place annually in the northeast of Thailand, and also in Laos (Peck 1999; Klausner 1987: 28). This is a rain-making festival held at the beginning of the rainy season each year in May or June, the beginning of the planting season for rice (Peck 1999). The most famous aspect of this festival is the competition between local villages in shooting off skyrockets, with the rocket flying the highest winning the contest (Tambiah 1970: 286).

This festival is originally non-Buddhist in origin, and is associated with Phi Pu Ta, the village guardian spirit and spirit of the swamp, Chao Phau Tong Khyang (Rabibhadana 1992: 3, 11). Should the festival not take place, it is believed that this spirit will become angry, causing the rain not to fall and the buffalos used for plowing the rice fields and other animals to fall ill (Tambiah 1970: 286, 292). The skyrockets themselves are said to pay tribute to Thaen, the god of the sky, asking him for rain, and also to Wassakan, the rainmaker god (Rabibhadana 1992: 7-8; Kesten 1988: 30). On the day before the festival, the men in the village go to their individual spirit shrines and set off their own mini skyrockets. If these fly well, then it is considered a good omen, with plenty of rain and abundance in the coming year (Klausner 1987: 26). In addition, a colorful main festival dance takes place that is also designed to bring rain and ensure fertility (Burns 1997).

This rain-making festival, as seen in previous examples, is also intertwined with fertility rites. In the past, the Bun Bang-Fai festival consisted of a parade of only men, each wearing or holding some sort of phallic symbol, with even the skyrockets
themselves shaped like penises. These men would then visit, court, and flirt with young women from the surrounding villages, creating an opportunity for men and women to meet. Today sexually suggestive dancing and playing with phallic symbols, along with some of the men dressing in women's clothing still are major parts of the festival, combining the spiritual request for rain and fertility of the land with the fertility and reproduction of the participants as well (Rabibhadana 1992: 5, 8; Peck 1999; Klausner 1987: 29).

However despite the original non-Buddhist origins of this festival, the influences of Buddhism and Hinduism can also be seen today. The Hindu Naga serpent is another important symbol of the Bun Bang-Fai Festival. The skyrockets themselves are either decorated with the Naga, or entirely made to look like the Naga (Rabibhadana 1992: 10; Burns 1997). In addition, these skyrockets are believed by some to be a signal between the Naga and the god Brahman in the heavens (Rabibhadana 1992: 8). In fact, the rockets themselves are considered to be the Naga, linking heaven and earth, and are also connected to the symbol of the phallus. Here we can see the combination again of local and Hindu ideas, with the locals ideas sending the phallus into the sky to bring the fertile rains from their rain and sky gods, and the Hindu ideas using the symbology of the Naga, the water serpent and the link between the worlds of secular and sacred, to communicate with the gods.

A similar skyrocket festival is also celebrated in Sipsongpanna in Yunnan province in China. In recent times, this festival has been moved to be celebrated along with the Songkhran festival, however rockets are still shot skyward in order to remind the heavens not to forget to send the rains (Goodman 2000: 329).
From all of these examples of the sacredness of water in mainland Southeast Asia, from Hindu cosmology and myths of origin ideas being represented in the Khmer temple complexes, to the River of 1000 Lingas, the Khmer Baray, Loy Krathong, Songkhran, and the Skyrocket Festival, it is now obvious that water clearly played a spiritual role in the beliefs and actions of the mainland Southeast Asian peoples and elite before the arrival of Westerners.

SACRED WATER IN VIETNAM

While the previous examples of sacred water in mainland Southeast Asia have entirely focused on the Indianized regions, water was also considered spiritually important in the Sinicized areas of what is today known as northern Vietnam.5 The importance of water in northern Vietnam is clear when looking at its geography. Home to the Red River Delta, bordered by the South China Sea on one side, and subsisting mainly off of wet-rice agriculture, water is constantly present in the lives of the peoples of northern Vietnam.

Local legends and myths provide the first evidence of water's spiritual importance in northern Vietnam. One famous northern Vietnamese myth involves the historic figure Le Loi, a national hero who is credited with driving the Chinese out of northern Vietnam between 1418 and 1427. This myth claims that Le Loi was triumphant against the Chinese because of a magic sword given to him by a turtle. After the victory, Le Loi is

5 The Vietnamese did not begin to expand their kingdom southward from northern Vietnam until the 15th century, after the defeat of the Chinese by the Le dynasty. The Indianized Cham capital of Vijaya in central Vietnam was conquered in 1471, and the Vietnamese began to incorporate sections of the Indianized Khmer territory to the south, including the Mekong Delta, beginning in the 17th century (Cross and FitzGerald 2001: 17-18).
said to have returned the sword to the turtle in a lake in the center of Hanoi named Ho Hoan Kiem, or “Lake of the Returned Sword.” Today this lake is revered as a sacred symbol of national pride, and a magical home to Le Loi’s turtle and sword (Foley 2001: 131).

The creation myth of the Vietnamese tells that all its people are descendants of a hero from the sea, Lac Long Quan. This hero is said to have subdued evil demons, civilized the people, and taught them how to grow rice. Lac Long Quan later married a mountain princess of fairy blood named Au Co, and had 100 children, one of whom is said to have been the first of the 18 historical Hung kings (Cross and FitzGerald 2001: 15).

Myth states that the last of these 18 Hung kings had a beautiful daughter who upon reaching marriage age, was courted by two suitors, Son Tinh, the genie of the mountains, and Thuy Tinh, the genie of the waters. The king promised his daughter to the genie who arrived first with the wedding gifts. The genie of the mountains arrived first and took his new wife into his mountains. Upon finding out this news, the genie of the waters became so angry that he began to attack the mountains with his water, however the genie of the mountains soon mastered these waters and forced them to recede. This battle is said to take place every year, with the genie of the mountains victorious each time (Gross and FitzGerald 2001: 23).

This final legend shows the constant struggle of the peoples of the Red River Delta surrounding Hanoi to keep the annual river flood waters at bay. Shrines to the genies of the mountain and the water still exist today in this area. Because of the constant threat of such floods, the northern Vietnamese constructed a whole system of dikes and
irrigation canals in the Red River Delta in order to control and utilize the excess water. It was often the monarchy that was responsible for the construction and maintenance of these dikes and irrigation canals, in order to keep their land from flooding and to keep a surplus of rice available in the event of future shortage. These pre-colonial rulers were considered to be in power based on the “Mandate of Heaven,” or heaven’s consent and blessing of their ability to rule successfully. Although a Chinese concept, the “Mandate of Heaven” to some extent resembles the Indian idea of divine kingship seen in other parts of mainland Southeast Asia. Rulers in both the Indianized and Sinicized regions were believed to be connected to divine powers, and used economic and practical projects such as dykes and reservoir systems to legitimize this divine connection. Should important responsibilities such as the maintenance of these water systems not be properly carried out, however, and the peoples suffer as a result, the northern Vietnamese rulers were considered to have lost the Mandate of Heaven and would be overthrown. Similar to the water systems in Angkor and Upper Burma, control of the water by the northern Vietnamese elite displayed and legitimized both their practical and spiritual power (Cross and FitzGerald 2001: 25-26).

Indigenous animistic belief systems throughout the modern-day region of Vietnam also worshiped water spirits. A strong belief in the spirit world existed, and the peoples often prayed to water gods and spirits, including the Mother Saint of the Waters, genies of the waters, genies of water palaces, genies of the rivers, lakes, and seas, spirits of the clouds and rain, Lady Great Drought, and Lord Count of the Rivers (Cross and FitzGerald 2001: 26; Werner 1976: 25, 29-30). These spirits were believed to live down in the depths of the waters, in the calmest pools, in the rivers, and on boats. Amongst the
agricultural population, spiritual ceremonies were held that included the “ceremony of the establishment of the channel,” for the channel that takes water to the rice fields, the “ceremony of joyous welcome to the water” once all the rice fields had been irrigated, and the “ceremony of the beginning of the monsoon” to celebrate the coming of the rains (Cadiere 1989: 7, 22, 25). As in the other areas of mainland Southeast Asia, water was considered to have an important spiritual aspect that was respected and worshiped in pre-colonial Vietnam by both the elite and common peoples.

CONCLUSION

From the examples in this chapter, it is obvious that prior to the arrival of Westerners, water played an important spiritual role in mainland Southeast Asia, and was considered to be a sacred element in many respects. The elite as well as the common peoples of mainland Southeast Asia viewed water in this way, making no separation between the economic and spiritual aspects of water and the natural world, and thereby ensuring that any economic development undertaken involving water was bound to be respected and viewed spiritually. With the arrival of Westerners, however, this view of water as a simultaneously spiritual and economic resource began to shift more towards viewing water as a strictly secular resource, and efforts by the elite to commodify and legally possess water for strictly secular economic development soon began. How and why this happened will be explored further in Chapter Two.
CHAPTER TWO- COLONIAL INFLUENCE

INTRODUCTION

As discussed in Chapter One, in the pre-colonial era, water in mainland Southeast Asia had a strong spiritual connection. It is the contention of this thesis that the elite ceased to believe in or honor the spiritual aspect of water in the years during and after the colonization of this region, leading to the economic focus on water and waterways that we see today. As a result of this fundamental shift, a mainland Southeast Asian ruler’s manipulation of the natural world and water no longer represented and legitimized the ruler’s spiritual power and connection as was shown in Chapter One, but instead began to represent and legitimize the ruler’s secular control over the natural world, as well as the ruler’s ability to bring strictly secular forms of development and progress to their territory. This secularization of water and the natural world was eventually transferred to some extent to the common peoples of mainland Southeast Asia as well via Western scientific education. But how and when did this shift take place? This chapter will examine the arrival of Westerners in the region, their colonization of much of mainland Southeast Asia, and the changes that their arrival created in how the Southeast Asian elite and common peoples approach the natural world. The arrival of Westerners changed mainland Southeast Asia in three very basic ways in relation to its elite’s and common people’s approach to natural resources and the vital resource of water. First, political boundaries were created and drawn out on maps, creating new concepts of ownership and clearly demarcating which sections of waterways belonged to which country. Second, an
emphasis on development via the commodification, exploitation, and export of natural resources, including water, was introduced on a larger scale than ever before. And third, secular and scientific approaches to the natural world arrived that began to change the indigenous Southeast Asian’s view of the place of the sacred and the place of the secular within their world. All three of these changes were to have direct effects on the way in which both the elite and common population viewed water and the natural world in mainland Southeast Asia, and later on the fate and development of the Mekong River.

WESTERN ARRIVAL

The Western presence in Southeast Asia started with the arrival of Europeans in island Southeast Asia between the years 1500 and 1800. One of the first recorded reports of Southeast Asia by a Westerner was by Marco Polo towards the end of the 13th century, but it was the Portuguese who first discovered a continuous sea route between Europe and Asia and established the first significant presence (Hall 1981: 253). The profitable spice trade of the islands, including cinnamon, pepper, nutmeg, cloves, and mace was the major draw to the Europeans, with the Portuguese conquering the key trading port of Malacca in 1511, the Dutch arriving in 1596, and the British venturing into the region in around 1600, all vying for control of trade in the region. The Spanish arrived as early as 1521, but focused mostly on the Philippines, establishing the Galleon Trade for silk and cotton between Macao and Acapulco in the Americas. The European presence along the coastal areas was to permanently alter the trading patterns, economies, and politics of these islands. Additionally, transactions between the coastal areas and the more remote
interior allowed this European impact to eventually spread beyond the coast as well (L. Andaya 1999: 9-17).

From their bases in the islands, European activity also spread to the Southeast Asian mainland. However, the mainland was initially not a major priority for these European powers, as it was off the main line of commercial activity (Harrison 1966: 121). The European contact that did take place on the mainland during the early years of Western arrival was mostly the work of adventurers, missionaries, and private traders (Tarling 1999: 68).

**COLONIALISM**

In the 19th century, European interest in mainland Southeast Asia increased. Europeans were beginning to regard colonial expansion as an indicator of the power and prestige of their nations. The British moved in to bring Burma under their colonial control, and the French followed suit in the Indochina region, which today are the nations of Vietnam, Laos, and Cambodia. The modern nation of Thailand was never colonized, partially due to the need for a buffer zone between the two European powers. One further area that is worthy of discussion in terms of colonialism is the region of what is today southwestern China, including Yunnan. Starting much earlier, this area was also colonized by China.
British Burma

The British began expanding their colony from India into Burma. This move was noticed by the French, who were interested in the possibilities of colonial expansion of their own, and were worried that the British might overrun most of the area. The key interest in these mainland colonial excursions into Southeast Asia was access to China, a country then seen as a huge potential market for trade as well as natural resources (Osborne 1975: 20-21, 28-29). This race for Southeast Asia soon became a competition between European nations to see who might get close enough to China in order to find a “back door” into the country, and thereby gain a potential monopoly on the market and opportunities there (Kasetsiri 2003: 7).

In the early 19th century, deteriorating Burmese relations with the people in their Arkanese territory began to create tensions with their British neighbor in India. With the harsh treatment of the Arkanese by the Burmese, refugees began to pour across the border into British India. The Burmese forces followed these refugees across the border, also fighting with groups in Burmese Assam and Manipur, and forcing even more refugees across into British territory. The British soon retaliated by sending troops into Lower Burma to occupy Rangoon in order to pressure Burma into resolving the issue. This became known as the First Anglo-Burmese War, lasting from 1824-1826. At its conclusion, the British took control of the disputed Arakan, Tenasserin, Assam, and Manipur territories.

Later, British commercial concerns and missionary issues, along with general instability and violence in Burma, gave the British reason to step in again and fight the Second Anglo-Burmese war in 1852. This time they took Lower Burma as British
territory, thereby insuring that all major economic activity in Burma had to run through British controlled ports.

Deteriorating relations with the British led the Burmese government to attempt to form an alliance with the French. The British saw the possibility of a French presence in both Indochina and Upper Burma as a threat to their colony in India, and so initiated the third and final Anglo-Burmese war of 1885-1886. After only a few days of fighting, all of Burma was officially made a province of British India in February of 1886 (Fredholm 1993: 23-24).

French Indochina

In the 19th century, France was still bitter about losing its American territories in the previous century, and so looked to Asia with renewed hopes of gaining new colonial possessions. A special commission was formed by Napoleon III in 1857 to investigate intervention into Vietnam. Major backers for this plan were the Catholic missionaries already in Vietnam, who at this time were being persecuted by the anti-Western/anti-Catholic emperor Tu-Duc (McLeod 1988: 101-102). This, along with additional arguments of economic gain, imperial ambition, and “colonial prestige” were enough to convince Napoleon III to commit, and keep France in line with other prosperous European states of the time.

As a result, a combined French and Spanish force attacked Vietnam at Danang harbor on August 31, 1858 with 2,950 troops and 14 warships. Later, they moved the European fleet southwards to attack the “Six Provinces” around Saigon and set up a blockade at the mouth of the Mekong River (McLeod 1988: 103-105, 111). Finally, the
Vietnamese government gave in and on June 5, 1862, an “unequal treaty” or the “Treaty of Saigon,” was signed that gave France (Spain was negotiated out of the deal) territorial rights to three of the provinces in the south, and missionary, commercial, and diplomatic concessions to the whole country (McLeod 1988: 124). The other 3 provinces in the south were annexed later, and the colonial authorities then moved north to take over Tonkin, with the hope that the Red River would provide access into China (Tarling 1999: 41-42).

In August of 1863 Cambodia was placed under the influence of France as well when King Norodom signed a treaty of protection with the French designed to keep him safe from Thailand’s possible expansion (Lamb 1968: 181). Under French pressure in 1893, Thailand (whose territory then included Laos) signed a Franco-Siamese treaty which passed all Lao territories over to the French, using the Mekong River as a large section of the boundary, and completing the French colonial territory of Indochina (Hirshfield 1968: 41).

**Thailand**

Thailand was the only mainland Southeast Asian nation not to be colonized by a European power. The British and French were both interested in keeping a buffer zone between them in order to avoid conflict or war between the two great powers, and Thailand filled this role perfectly. In addition, Thailand also undertook a series of reforms under King’s Rama IV and V, Mongkut (r. 1851-1868 CE) and Chulalongkorn (r. 1868-1910 CE), designed to satisfy the Western powers and take away any developmental or civilizing agenda they may have used as an excuse to colonize Thailand. However, most
historians agree that because of these reforms based upon Western demands and culture, that Thailand was still indirectly colonized by the West and their demands (Anderson 1978: 198-199; Wyatt 1968: 1969; Hirshfield 1968: 30).

**Yunnan**

One further area that deserves mention when discussing colonization in mainland Southeast Asia is Yunnan province in modern day China. Although not colonized by foreign Western powers like the other areas of mainland Southeast Asia, Yunnan was still very much colonized by China, and eventually incorporated permanently into its nation. The southwestern Chinese province of Yunnan, although within the political boundaries of China, is in many ways much more connected to mainland Southeast Asia. Several factors, including geography, religion, and trade, show Yunnan to have much more in common with mainland Southeast Asia than with the current Chinese nation (Giersch 2001: 73). According to Charles Higham, Southeast Asia is a region that actually extends beyond its current political boundaries and into other areas. He states that it could instead be defined by the monsoon affected areas of Asia, minus India, and including southern China, where customs, languages, and habitat are all related closely to those of Southeast Asia (Higham 1996: 1-3).

Geographically, Yunnan and northern mainland Southeast Asian are very similar, with the whole region being extremely mountainous, and containing deep river valleys, major rivers, and dense forests. These geographic features have historically made the region very difficult to access for the Chinese, and for thousands of years made the region impervious to the spread of Chinese culture (B. Andaya 2006: 11-12; Dowdle 1980: 4).
Culturally, Tai groups occupy the lowlands and valleys in the regions of northeastern Burma, northwestern Laos, and southwestern China, living in settled villages, relying on irrigated wet rice agriculture for subsistence, and sharing similarities in terms of language and lifestyle (Dowdle 1980: 10; Higham 1996: 1-3; B. Andaya 2006: 3). Religiously, the many groups across the region are further unified by the practice of Theravada Buddhism, and it is common for monks from each country to cross political boundaries and participate in exchanges with monks in other countries in the region (Quenemoen 2004: 225, 232; Lewis and Wigen 1997: 174).

In the highlands of this region, live nomadic tribal groups who subsist mainly on herding and slash and bum agriculture (Dowdle 1980: 7). These same ethnic minorities live all across this region, separated only by national boundaries (Emmerson 1984: 11). For example, the Akha people, who today number around 500,000, are found in the border areas of China, Thailand, and Burma, as are the Lisu, who fairly recently migrated into Thailand from Yunnan province (B. Andaya 2006: 19-20). Languages spoken by these various tribal groups all fall into the Austro-Asiatic category, including Tai, Miao-Yao, Mon-Khmer, and Sino-Tibetan (Giersch 1998: 32-33).

In terms of trade, much exchange has historically taken place across the modern political boundaries of southwestern China, Siam, Burma, and other small Tai polities. Goods that were exchanged included ivory, gems, gold and silver, jade, cotton, tea, etc. Many of these same products were then imported into China from Yunnan province (Giersch 2001: 81-82).

Interestingly, Barbara Watson Andaya has also suggested that parts of Yunnan can be linked to Southeast Asia via the practice of headhunting. The Wa tribal people of
southern China and northeastern Burma were reportedly a headhunting group, as evidenced by their carved bronze containers which show the images of warriors carrying human heads. Also the Palaung group in the Burma/China border region, and the Khamu people in the Lao/China border region are said to have taken heads, a practice which Andaya shows to have been a cultural practice throughout much of early Southeast Asia (B. Andaya 2004: 2, 5-6).

Politically, for most of its history, Yunnan was an independent region. It was occasionally loosely controlled by China, which generally saw it as a frontier or buffer zone and not part of their main territory. It was during the Han dynasty (206BCE-9CE) that the Chinese first became interested in gaining a firmer control over Yunnan and began to slowly move into the region, although this could be seen more as a colonizing act than a conquering one (Dowdle 1980: 13). The local chiefs were given ranks and titles by the Han emperor as one means of spreading Han culture and incorporating Yunnan peacefully into the Chinese sphere (Chang 1956: 28). But because Yunnan was so far from the capital, it was difficult for the center to control and maintain. Therefore the policy of "ji mi," or loose reign, was adopted. Yunnan was required to pay tribute, and accept some forms of cultural influence, but direct Chinese political control during this time was little to non-existant (Dowdle 1980: 13).

During the Tang dynasty (618-907CE) a partially Tai kingdom called Nanchao formed that eventually grew to cover most of southwestern China. This kingdom remained powerful and was a menace to China for six centuries, from 649-1253 CE, and was successful in keeping Chinese expansion at bay in this southern area (Chang 1956: 29). However it did agree to become a protectorate of China, which allowed the Chinese
to implement their government functions at local levels, and create prefectures. But any real control was again only very loose (B. Andaya, Unpublished Draft: 6; Dowdle 1980: 14).

It was in the mid-13th century that Yunnan was finally officially incorporated into China, when Kublai Khan and the Mongols (Yuan dynasty, 1280-1368CE) defeated Nanchao and took Yunnan as part of the Chinese territory during the Yuan dynasty (B. Andaya Unpublished Draft: 6; Dowdle 1980: 3). The Mongols used a policy of mixing local officials from the region with those sent from the center in order to better control Yunnan, and introduced both Muslim soldiers and the Muslim religion to the region. With the kingdom of Nanchao now defeated, many of the Tai people who inhabited it were pushed southward and began migrating into what are today Thailand and Laos (Dowdle 1980: 14; Chang 1956: 29-30).

The Ming dynasty re-conquered Yunnan in 1382, and moved military garrisons in to better control the region. However, the Ming soon realized that military pressure alone would not work, and so followed the Yuan model of creating alliances with native leaders. Again, the region was given much local autonomy while still being part of the Chinese empire. Some administrative connection was established, and tribute and taxes were collected, however the biggest change the Ming brought to Yunnan was the influx of Han Chinese populations. The Ming settled over 1 million Han Chinese in Yunnan between the 13th and 16th centuries due to population pressures in the interior of China, supplying them with “tools, seed, and draft animals” in order to help them better establish themselves (Giersch 1998: 54-58; Chang 1956: 30; Lee 1982: 714).
These population pressures continued during the Qing dynasty, and from 1700 to 1850, around 3 million more Han Chinese arrived in Yunnan and Guizhou provinces (Giersch 2001: 74). This created a problem of land pressure in these areas, and once the lowlands had been filled, minority populations in the highlands began to be displaced as well. Many Han also flooded into the urban areas to find non-agricultural work, such as mining (Chang 1956: 40, 55). The Qing also put in full time garrisons of soldiers, and began to implement more central control over native officials. Mandatory Confucian schooling began to be required, and the Qing increased their revenue by directly controlling taxes and taxation (Giersch 1998: 61-64; Quenemoen 2004: 208).

After 1949, when the communist government came to power, the People’s Republic of China, while continuing to retain Yunnan, attempted to create regional autonomous zones under central control in order to give the southern minority groups more independence. This proved difficult, however, as the ethnic groups were scattered and intermixed throughout the region, and not settled in easily definable pockets. During the Cultural Revolution, much of interior China’s youth population was sent into the remote regions, including some in the southwest, in order to work on established farms and plantations and learn from the hard labor. This move, along with earlier Han migrations, resulted in many of these “minority” autonomous zones actually incorporating areas that were by then populated by a Han majority.

Despite this outward effort to give some autonomy to parts of southwestern China, many efforts at centralization still took place. Southern populations were forced to join centralized agricultural cooperatives and buy state grain. Written languages were newly created and used to transmit communist propaganda to the region. Many Chinese
military posts were located in these minority regions, and all minority people were required to join the military and serve their specified time after the age of 18 (Quenemoen 2004: 208; Chang 1956: 126-131, 141-146).

Although Yunnan has had a long history of independence, and strong regional connections to Southeast Asia, it has steadily been politically and culturally colonized and incorporated into the Chinese state over time. Today it is an official Chinese province, which has allowed China to control a large portion of the upper Mekong River that runs through this province. This is a significant fact that will be discussed in greater detail in Chapter Three.

LOCAL CONCEPTS OF SPACE, TERRITORY, AND MAPS

When Europeans arrived in mainland Southeast Asia and eventually created colonies, they brought with them very different Western ideas of national boundaries, borders, and maps, which were later to play an important role in the transformation of water to a more secular commodity. These boundaries, borders, and maps introduced to the local elite the idea of a strictly defined fixed territory, and created the concept of political ownership and rights over this demarcated territory, including all the natural resources that existed within it.

Concepts of Space and Territory

In mainland Southeast Asia at the time of the arrival of Western powers, although concepts of maps and local space did exist, they were vastly different from what had
developed in Europe. Rather than having strictly mapped political boundaries to divide different kingdoms, the elite of mainland Southeast Asia followed more of a “mandala” system of overlapping kingdoms and spheres of influence. As discussed in Chapter One, through the influence of Indianization, local kings, came to seen as divine god kings, and incarnations of gods whose rule was legitimized through these spiritual connections. Each of these kings had a sphere of influence that diminished as it spread outwards, with its outer edges overlapping with the outer edges of other major or minor kingdoms. Within this sphere of influence existed other lesser kingdoms and rulers who were allies with and paid tribute to one or more larger kingdoms. This political situation was very fluid, constantly changing, expanding, and shrinking, as certain kingdoms declined and grew with changing political circumstances and as new “men of prowess” emerged. Keeping power in such a mandala setting required kings to constantly keep themselves informed about the outlying areas of their kingdom in order to prevent uprisings, and to be skilled at diplomacy in order to maintain current influence, keep distant areas loyal, and gain new regions (Wolters 1999: 27-29).

In Mabbett’s study on Cambodian kings, he demonstrated how keeping power depended heavily on the maintenance of loyal ties between the kings and the outer areas. Once these kings gained power, it was important for them to distribute rewards, honors, and high level positions to other rulers within their realm in order to continue to foster this loyalty. However, this loyalty often did not last longer than one generation, as future generations did not have the same obligations of loyalty to the center, and instead gained their own connections and sources of power. It was often these outer lying provinces that
eventually gained enough power and influence to become major kingdoms themselves and supplant their predecessors (Mabbett 1978: 9).

In addition, local conceptions of ownership of land and resources within this mandala system were very different from European definitions of this concept. The absolute and exclusive rights to an item or area that is implied in European ownership did not apply to the indigenous mainland Southeast Asian approach. In the mandala system, an area or resource within one lord’s territory was often owned and used to some degree by other polities as well. The lords never considered themselves in ownership of the actual soil of the piece of shared land within their realm, but only in possession of the revenues that could be earned off of it via taxes or tribute (Mabbett 1978: 14-15).

Amongst the indigenous populations, land was important for subsistence, as well as religious, social, and cultural purposes, and was divided with these purposes in mind. The land available for members of a certain village to access was, by Western standards, vaguely defined, with any boundaries following natural features of the landscape. Families attained new land by clearing it themselves. This land would then be theirs to use as long as necessary, and it was often passed down through the generations, although it was ultimately still the property of the village as a whole. Once this land went unused, it immediately returned to the village, as concepts such as strict legal ownership or absentee rights did not exist (Slaats 1999: 89-90, 102).

Indigenous concepts of territory and space went beyond just the physical realm, and included the spiritual dimensions as well. These kingdoms were considered to be microcosms of larger universal and spiritual macrocosms. The alignments of the stars and planets could either bring harmony or havoc to a kingdom, and so it was important to
bring all of their lives and activities into harmony with the universe. The capitals were the most important to lay out architecturally in harmony with the universe. As mentioned in Chapter One, Brahmanic beliefs introduced the idea of the world consisting of a central continent, and seven surrounding oceans and mountain ranges, with Mount Meru as the center of the world. Therefore, many of the capital cities in mainland Southeast Asia were built to replicate this model, including the Angkor temples, the Pyu capital of Sri Ksetra in Burma, and the royal palaces in Burma, Siam, and Cambodia (Heine-Geldern 1956: 1-3, 7).

Indigenous Maps

Indigenous maps were also very different from the geographic maps that the Europeans were accustomed to using. In particular, the maps that did exist in times before European contact mapped the local spiritual concepts of the larger cosmos and how they related to the physical world.

Throughout mainland Southeast Asia, several holy Buddhist sites exist in places where local people claim that the Buddha visited, or in shrines where relics from his body such as a tooth or lock of hair are stored. While doing research in Northern Thailand, Charles Keyes discovered that 12 of these shrines had been arranged to correspond to the 12 years of the local animal cycle or calendar. To this day, local Buddhists commonly attempt at some point in their lives to make a pilgrimage to the shrine of their birth year in order to receive spiritual merit. The layout of these 12 shrines creates a sacred or ritual topography of the landscape that acts in place of the physical or political maps of the West (Keyes 1975: 71-74, 83).
The layout of these shrines creates larger moral and spiritual communities that cross any political boundaries. In the traditional Northern Thai viewpoint, six spiritual communities exist that make up their world view, which on a map would look like larger and larger circles spreading out from a center in Northern Thailand. These begin with the smallest central circle and radiate out from there. They include 1) the area around a cluster of four of the twelve Buddhist shrines in the Ping Valley near the city of Chiang Mai, 2) four outer lying shrines in Lan Na, 3) an area including everyone in the Yuan and Lao Buddhist community, and incorporating the 9th shrine in the northeast of Thailand, 4) the Burmese community, including the 10th shrine in Rangoon, 5) the Bodhi tree in India where the Buddha gained enlightenment, linking all Buddhists in the world, and 6) the final 12th shrine, believed to be located in heaven, and including all Buddhists both in heaven and on earth. This concept continued to exist in Northern Thailand until modern nation state borders and boundaries replaced this concept (Keyes 1975: 85-87, 89).

Another pre-colonial concept of space that revolved around spiritual sites was an orally recited map of the Cambodian territory. These maps consisted of lists of holy sites, places, and landscape features that physically and spiritually demarcated the country. These holy sites were often temple or archeological locations on hilltops that each had a specific spirit attached to them which could be called upon to assist the kingdom. The list was read out by the king during spiritual occasions in order to cleanse the kingdom of its negative merit. Starting from the city of Udong and forming a mandala-like spiral around the kingdom, the list described the physical jurisdiction of the king, and also listed which spirits the king had influence over and could call upon for assistance in times of need (Chandler 1976: 170-173, 175-180).
A further example of spiritual divisions of space can be seen in Burma. In the Mon kingdom in Lower Burma, the territory was divided into 32 townships, or myo (Shorto 1963: 572-573). This number was spiritually significant in Burma and other parts of mainland Southeast Asia, with various spiritual myths explaining its importance. The full number is in fact 33, including the king in the center of the world. Some believe that this number represented the 33 gods who are said to live on the summit of Mt. Meru (Heine-Geldern 1956: 4). Others say that the Buddha once brought his tooth to the Mon, which divided itself into 33 teeth, with each tooth being enshrined in stone temples across the kingdom, thereby signifying the territory of the Mon peoples. Either way, the prosperity of the king, the state, and the people were said to be dependent upon the division of the space into 32 units (Shorto 1963: 574, 577).

In Thailand, the seven spires of the temple Wat Jet Yod were designed to represent seven sacred sites in India that related to the Buddha’s life and doctrines. Several temples in Pagan and Pegu, as well as in Chiang Mai, Chiang Rai, and throughout the Lan Na territory were all designed to replicate the area where the Buddha gained enlightenment, and even the Buddha’s footprints, said to have been left when he stepped back onto earth after having gained enlightenment, have been used in cosmological maps. Maps that led to higher levels of spiritual existence were considered just as important to the people of mainland Southeast Asia as maps of the physical environment (Suarez 1999: 26-27, 34, 36-37).

Probably the most famous “map” in pre-modern mainland Southeast Asia is the Traiphum Cosmography from Thailand. This map reconstructs the life of the Buddha, some of the Jataka Tales, and how Buddhism came to mainland Southeast Asia. It shows
cities and countries that were important to Buddhism and the life of the Buddha, such as the city of his father, the tree under which he was born, and the tree where he gained enlightenment. Significant recognizable locations in Laos, Northern Thailand, Vietnam, Champa, Burmese and Mon regions of Burma, and Sri Lanka are also included. However, parts of this map are not geographically accurate. Lan Na occurs next to important Buddha sites in India, with the area of Burma not included between them. This is because this map was designed not to be a geographical reference, but instead to show how the transfer of Buddhism to mainland Southeast Asia occurred. Burma was not considered by the Siamese authors of this map to have played a significant role in the transfer of Buddhism to Thailand, and therefore was left off of the map (Winichakul 1994: 25-26).

However, examples of geographic maps do occur to some extent in pre-modern mainland Southeast Asia, which show that such knowledge did exist. Among others, the Vietnamese had produced an atlas of their kingdom in 1490 that recorded topography, landmarks, travel routes, etc. This concept of a geographical map arrived in Vietnam from China, where ideas of social infrastructure had been developed in order to create a stronger centralized government, protect boundaries with neighbors, collect taxes, and carry out population censuses (Suarez 1999: 38). Also a strategic map of the Laos region was produced by King Rama I in 1827 for military purposes. This was a travel map, with concepts of space relating more to time of travel rather than distance, and was lacking in the scale, boundary lines, and territory markers which had become common on Western maps by that time (Winichakul 1994: 31).
WESTERN MAPS, BOUNDARIES, AND BORDERS

With colonialism came new Western ideas of maps and boundaries. These ideas contained implicit rules on how national maps and boundaries were to function. First, every state had to have clear borders which could be drawn on a map. Second, these borders had to be marked along the actual physical landscape as much as possible, and guarded to ensure their authority. And third, these borders had to be formed as a result of treaties and laws with other nations. Europeans brought the idea of linear boundaries into mainland Southeast Asia, and proceeded to replace former vague frontier areas with them, showing little concern for pre-existing areas of population and culture as they were drawn (Solomon 1969: 1, 10).

British Mapping of Burma

In Burma, the eventual maps that were drawn by the British added new pieces to the region that had little connection to the pre-colonial state. This included hill tribe areas outside of the Irrawaddy valley, including Shan, Karen, Kachin, and Chin populations that had paid tribute to the Burmese state but never been firmly under their control. These groups were now formally incorporated.

Starting from the Arakan region, the British first drew a line to the Assam Himalayas in order to divide Burma from India. Next, in 1914, they formed a line along the southeast corner of Chinese Tibet known as the McMahon Line, which extended to the east across the Taron River. However, this line was contested by the Chinese who felt that it incorporated areas into Burma that historically had ties to China. This line ended at
the Isurazi pass on the Salween-Irrawaddy watershed, and a further border was drawn from this pass to the Mekong River border with Laos. Again, the Chinese were very suspicious about this line, as they felt that the British would eventually use this as a way to expand into Yunnan (Lamb 1968: 147-151).

The next question was Burma’s eastern border with Siam. When approached about demarcating such a line, the Siamese were generally unconcerned about exactly where the specific line was to be drawn. This attitude was for two reasons. First, as discussed above, the concept of strict borderlines was new and unfamiliar to the Siamese and mainland Southeast Asians as a whole, who were used to mandala-style boundaries. And second, the Siamese were more interested in keeping friendly relations with the British, in hopes that this would bring in trade via Bangkok. Historically, a buffer zone was kept between friendly polities in mainland Southeast Asia that was neutral and belonged to both groups. This was to ensure that neither country imposed upon the other one, with a strict border only necessary if relations were unfriendly. Therefore, it was suggested by the Thai royalty that if the British really wanted to know where Siam’s influence ended, that they should go into the frontier lands and speak to the local leaders themselves (Winichakul 1994: 63-64, 78, 100).

However this became a greater issue in 1840, when minor skirmishes in the border areas were blamed by the British on the lack of a clear boundary. In 1847, the British approached Lan Na and asked to form a border between that kingdom and British Burma. Those in power at the Lan Na capital of Chiang Mai told the British to make their own line. As a result, the British surveyed the Salween River which was used as a point of reference in order to make that section of the boundary. More of the boundary between
Siam and Burma was decided in the Siam-British India treaty of 1874 in Calcutta, but the Siamese and the British were unable to finalize the border further south down to the Kra Isthmus. Siam claimed that control of this area was in the hands of the local rulers, with local territory marked by rivers, streams, mountains, forests, pagodas, piles of stones, etc. Any strict European borders, they claimed, would limit many of the hunting and gathering areas of the local residents (Winichakul 1994: 68-70, 73). The border was finally decided in 1909 when Siam transferred the states of Kedah, Perlis, Kelantan, and Trengganu to British Malaya (Lamb 1968: 170).

French Mapping of Indochina

The French began to stake out the future borders of Indochina by first establishing an overlord-dependent relationship with Cambodia. While Cambodia had been paying tribute to both Siam and Vietnam prior to French intervention, the French took advantage of the Vietnamese claims on this territory and had Cambodia pay them tribute as well starting in 1863 (Winichakul 1994: 93; Lamb 1968: 181; Fell 1988: 85). Siam resisted the French intrusion, but was unwilling to go to war, and therefore in 1867 was forced to cede Cambodia to the French. Siam was given the areas of Siem Reap (site of the Angkor temples) and Battambang in the agreement, although the French later took back these provinces between 1904 and 1907 (Lamb 1968: 181; Christian 1941: 275).

At this point, the French decided to explore in detail the regions that would later become Indochina. They began this process by sending out expeditions into the unexplored regions of future Indochina in order to map out and learn the geography of these areas. The first such expedition left in 1866 in order to follow and survey the
Mekong River and its surrounding territory. France was hopeful of gaining a backdoor entrance to trade opportunities with China via this route, but was also interested in filling in some of the blank spaces on the map in this area. Led by Doudart de Lagree and Francis Garnier, this expedition lasted two years, and reached as far as the Yunnan province of China before being ended by illness and conflict. Along the way, it managed to survey over 4000 miles of territory to help improve French knowledge of their future colony (Osborne 1975, Fell 1988: 83-85).

As the French began to gain more knowledge and take firmer control of certain areas of their Indochina territory, debates with neighboring powers over territory and borders began to arise. The Indochina border with China became an issue of contention when the French took control of Tonkin in northern Vietnam. The Mekong had not proved navigable in its upper reaches, and the Chinese were concerned that Tonkin and the Red River, which extends from Tonkin into the Yunnan province of China, would give the French their backdoor into China, and lead to possible colonial expansion. Both sides built up their military presence on both sides of France’s proposed line, with some fighting in 1883 that was won by the French. Eventually, China agreed to give up Vietnam as a vassal state, and in 1885 consented to form a new border with the French, even creating a border demarcation committee. In June of 1887, the border was finalized in the Convention of Delimitation of the Frontier between China and Annam. This set the border from the Gulf of Tonkin to the Black River, and in June of 1895, the line was continued on across the Laos territories, from the Black River to the Mekong (Lamb 1968: 172-175).
The other area of contention for the French was the Laos-Thai border. A major French explorer of the Indochina region, Auguste Pavie, undertook a mission to explore and map unknown areas of Indochina between 1879 and 1895. This expedition covered previously unknown areas in Cambodia, Laos, Yunnan, and parts of southern, central, and northern Vietnam (Pavie 1999: 30, 52-54). France at this time was afraid of Siamese expansion into Lao territory, which would cut off France from both access into southern China and the Mekong River. Paive and his mission were able to cover over 600,000 square kilometers of territory, which allowed the French to gain a better grasp of Lao region, and draw the first complete map of Indochina, which helped to make it a reality (Masson 1999: 5-7, 15).

The Lao territory, however, was heavily contested between the Siamese and the French (Christian 1941: 272). The strictly demarcated borders that the Westerners introduced were not only used by the Western colonial powers, but eventually began to be adopted by the Southeast Asian elite as well. King Mongkut’s reign began the practice of the Siamese adopting Western-style maps and geography. It was during the earlier Siam-Burma border dispute that Mongkut first showed a willingness to adopt Western-style borders. He agreed to work with the British to form a strict border, appointing a chief of boundary negotiation, placing guards along Siamese borders, and having hill tribe people patrol the area (Winichakul 1994: 72-73, 80, 101-102, 118).

Laos had historically been a disputed region between Siam, Vietnam, and Burma, but had most recently been taken under Siamese control in 1828 (Hirshfield 1968: 28). However, with the French interest in adding Laos to their colonial territory, Siam’s official authority and control over this area was challenged, causing Siam to move to
clarify their position. In a clear expression of just how much Siam had come to adopt Western conceptions of space and territory, King Chulalongkorn declared that the only way to settle the disputed territory was for both sides to prove their ownership of each part of the contested territory by showing it in the form of a map (Winichakul 1994: 108).

France would not simply conquer significant areas of Siam, as the British and French were both eager to keep a significant Siam territory between them to act as a buffer zone to keep the two powerful colonial nations apart from each other and to avoid war. The question was where to place the eastern boundary between Siam and France (Hirshfield 1968: 30). Late in 1866, Siam had begun to mark out its boundaries, a task mostly done by foreigners who had greater knowledge and skills than the local population. Mongkut first sent out a survey team to the Mekong region led by a Dutch surveyor, and Chulalongkorn later sent out Bangkok troops in 1884 led by the British surveyor McCarthy. These trips were always sent out under the guise of suppressing the Yunnan Ho minority rebel groups, however they conveniently always included both surveyors and mapping technicians as well (Winichakul 1994: 109, 116-117, 121).

Two years later, the French began to survey the region themselves. Pavie established a French consulate in Luang Phrabang at the beginning of his Laos expedition in 1886 in order to better carry out his mapping agenda, and the French planned to use this consulate in order to aid colonial expansion. Conflict soon became heated, with skirmishes occurring daily, as both sides marched into areas on the left side of the Mekong and put up flags and markers to show their territory. In 1893, a major clash on a Mekong sandbar led the French to send gunboats to blockade the Chao Phraya River and force a settlement, and eventually the Mekong River itself came to be used as the
dividing line. Siam had successfully used European geography to map and demarcate what it felt to be its own territory, however they had not realized that it was actually military might that backed up what was drawn on a map. The French at this time were simply militarily superior to the Siamese (Winichakul 1994: 109-111, 116, 121-123, 126; Hirshfield 1968: 33). The eventual final outline of the nation of Siam was formed by several treaties with the British and French in 1893, 1899, 1902, 1904, and 1907 (Winichakul 1994: 128; Hirshfield 1968: 52).

This introduction of strictly demarcated borders and boundaries on maps by Westerners significantly changed the Southeast Asian elite’s approach to space and territory. Political units and land could now be legally demarcated and owned, along with the natural resources such as water and rivers that fell inside these borders.

**COLONIALISTS AND COMMODIFICATION OF RESOURCES IN MAINLAND SOUTHEAST ASIA**

Once the territories had been mapped out and the European colonies officially defined, a great many changes began to take place in what had previously been a generally independent and self-sufficient region under the new colonial leadership. Chief among these was the introduction of an economic system that was based upon the commodification of natural resources for development and export.

**Introduction of the Commodification of Resources**

Regional trade had certainly existed before the arrival of the West, with the existence of important trading ports such as Malacca and empires like Srivijaya and
Ayuthaya that gained wealth by controlling the ocean trade routes. However the Western powers completely transformed the former trade-based economy into one based on capitalism and commercialization. Crops that had previously been grown in smaller quantities for local use were suddenly expanded to large scale plantations which produced goods for export. (Osborne 2000: 83). This idea first developed in Europe during the Industrial Revolution, a time during which advances in science and technology industrialized Europe, and changed previously self-sufficient societies into specialist communities which exported specific commodities and imported what they no longer produced. New developments brought on by the Industrial Revolution caused this transformation to take place quite rapidly in Southeast Asia in the 19th century (Tate 1979: 1).

The invention of the steamship during the industrial revolution, and the opening of the Suez canal were the initial major factors in the commercialization and commodification of the economics of mainland Southeast Asia. The first steamships arrived in the region in the 1820s, but it wasn’t until the mid-1860s that technological advances allowed them to surpass local ships and gain supremacy in the waters. In 1869, the Suez Canal opened, which shortened the travel distance from Europe to Southeast Asia by one-third, and the travel time by 10 weeks. These changes now made it possible to export perishable Southeast Asian goods to Europe, as well as bring Western machinery into the region to more efficiently produce and harvest the valuable natural resources there (Tate 1979: 2-3).

In Europe and America in the late 19th century, new technological developments created a growing need for certain natural resources that Southeast Asia could provide.
Rubber, tin, rice, coconut copra, etc., were some of the new profitable Western necessities (Osborne 2000: 86; Tate 1979: 8). Rubber soon became one of the main plantation commodities exploited in Southeast Asia. Sources earlier exploited in South America proved to be expensive and unreliable, and Southeast Asian plantations in Malaysia, Java, Sumatra, Vietnam, and Cambodia soon began to be developed as Europe's main source. New developments such as the automobile and airplane needed this rubber for their construction and tires, leading to a boom in the industry. These plantations were established by large foreign investors who relied upon cheap local or imported indentured labor for their production. Later, however, small local shareholders were able to corner a small piece of this market that kept at least some of the profit at home (Osborne 2000: 86-88).

Commodified Resources in Mainland Southeast Asia

Rice was exported in Southeast Asia before the arrival of the colonialists, however never at the volume that began to occur in the late 19th century. Previously, rice had mainly been a crop grown for subsistence in the local area, and was exported only when a good year produced a large surplus. However, a boom in the world market during this time provided the opportunity for rice export on a much larger scale. Again, Western technology and machinery made this possible, by the creation of extensive irrigation works and canals to drain the basins of the Irrawaddy, Chaophraya, and Mekong rivers, and create large new fertile growing areas. Western capital and technology made this expansion possible, and although most of the profit went to the colonialists, local labor and trade networks were relied upon heavily (Osborne 2000: 89-91).
The needs of the electrical, automotive, and tin canning industries during the Industrial Revolution made Southeast Asian tin a mineral in high demand. By the mid-1800s, the tin-canning industry was purchasing up to half of the world’s tin supply, as large urban centers in Europe needed ways to store the food surplus that was being produced. The extraction and sale of Southeast Asian tin soon became a major lucrative business in order to meet this demand. Europeans began to mine the rich deposits of tin along the Malay Peninsula with advanced equipment. New drilling methods, better furnaces for smelting, steam pumps, gravel pumps, and the chain-bucket dredge all far exceeded and outclassed anything that Chinese miners had been attaining prior to European arrival (Tate 1979: 9-10).

Several other local products also began to be mass produced for export during this time period. Coconut copra was suddenly in demand for its cooking oils, as well as for making soap and candles. Sugar was grown in Java, Thailand, Malaysia, and the Philippines, and tobacco and coffee were also grown for export (Tate 1979: 7-8). This export was further made possible by the development of communication networks throughout the region. Both Thailand and the colonial governments put great effort into building roadways and railroads, and improving river transport across their territories. This allowed remote outlying areas to be more easily brought under central control and contact, and allowed the export market to expand further into previously inaccessible areas. These transportation systems were linked up to the main sea ports, such as Penang, Jakarta, Manila, Singapore, and Bangkok, in order to facilitate the export of local products (Rigg 1991: 25).
Land Tenure

In order to grow or mine all of these products, the land itself also had to be transformed into a commodity that could be owned, bought, and sold. Traditional land tenure in mainland Southeast Asian village communities was based upon vaguely defined community-owned tracts of land that could be claimed by village members or families by clearing and cultivating a select portion of that land. Although land could in this way be controlled by certain individuals, the community ownership of the land never entirely disappeared, and when land fell into disuse or was abandoned, it again returned to the community. Any major decisions regarding the use of the land generally involved family members and village officials (Slaats 1999: 90-91).

However, colonial desire to control large areas of land for the production of exportable commodities led to the implementation of Western forms of land tenure. In Lower Burma, the British introduced the concept of land ownership, and transformed land itself into a commodity that could be bought or sold. Peasants were used to clear and drain rice growing lands in Lower Burma, and by 1941 10 million acres of land were under rice cultivation in this area. But with the new concept of land ownership, a majority of this land was soon owned by wealthy Indian moneylenders and absentee landlords, rather than by the peasants themselves. This practice soon became a major cause of rural poverty and debt, with greater and greater areas of land being transferred to these moneylenders and landlords when poor peasants could not afford the high rents (Tait 1979: 133).

The French began a country-wide land survey in Vietnam in order to clarify land rights in 1925. This survey was only partially completed by the time their rule came to an
end, although the land which was seen as valuable for rubber, tea, or coffee plantations, or for mining operations was given priority and surveyed first. In this way, colonial planters and miners were able to introduce and obtain legal ownership of the profitable areas of land in order to cultivate exportable crops (Tate 1979: 353).

The colonial economy based on the commodification and export of natural resources had tremendous effects on the local economy of Southeast Asia. Economically, survival based solely upon domestic production was no longer possible, and a new economy was formed based upon import and export, technological know-how, fluctuations in international trade and the world market, and a cash economy (Rigg 1991: 26). Subsistence farmers now entered into wage labor jobs in order to live and operate in the new cash economy that had replaced the traditional barter economy. This cash economy also led to opening of various retail stores to cater to the growing demand for consumer goods that the people could now buy with their earned wages (Osborne 2000: 93).

**Impacts of Commodification**

Such economic change introduced a widening gap between the haves and the have-nots in Southeast Asia. While the educated elite, or those with enough capital to own land or join in the production of export commodities were able to benefit and gain financially from the new system, many others were not so fortunate. As was the case in Lower Burma, with the increased use of land for development, cash crops, mining, etc. many peasants became landless, forcing them to rent from high priced landlords with more concern for income than human welfare. It was in the cities with large populations
where commercialization had advanced the furthest where one could find the largest gap between the working class citizens and the higher class populations. Many peasants who would formerly have been able to survive growing subsistence crops on their own land or clearing forests for expansion of farmlands, were now often forced into an economy where it was necessary to earn cash wages. They now often found themselves working as wage laborers on the farms of larger landowners, or on commercial plantations. This transformation from a subsistence economy to more of a capitalist economy therefore had some negative social impacts for the people of Southeast Asia.

These changes were not only introduced and implemented by Westerners however, but were further passed on to the local population via education. Although most of the rural population was not considered worth educating by the colonial governments, the privileged populations were either sent to schools in the urban centers and given a Western education, or sent abroad to study in the West and experience the culture, ideas, and ways of doing things there first hand. These privileged were needed by the colonial governments in order to help run the colonies. But ironically, it was also these educated groups who first began to conceive of the ideas of an independent future, free from the control of foreign powers. These students were to be the future leaders after Southeast Asian lands gained their independence following World War II. However, it was also these future leaders who were the most indoctrinated with Western ideals and education, leading to the continuation of Western economic approaches even after the colonial era had passed (Rigg 1991: 28).
CONTINUED COMMODIFICATION OF RESOURCES IN INDEPENDENT MAINLAND SOUTHEAST ASIA

The colonial powers left the region after World War II, creating an initial period of instability for the region as a whole. Regional organization was first provided by organizations such as the United Nations Economic Commission for Asia and the Far East (ECAFE), until such time as local organizations could be formed to oversee the future directions of the region (Turnbull 1999: 594-595). With the departure of the colonial powers, independent local governments were given the opportunity to exploit and commodify their resources for their own financial and economic gain, rather than for that of the colonial powers. Each new country began the process of following the general map for development and growth that the colonial governments had left. Economic growth was seen as the most basic step in their advancement, and the expansion of the economy via export-oriented industrialization and industrial growth were generally considered to be the best ways of achieving this goal (Owen 1999: 470-471). Much of this Western-style development was made possible by the Western educated elite who had gone overseas to either the democratic West or to the more advanced of the communist states (Owen 1999: 475-476).

Foreign Involvement

Although the Western powers had left and the colonial era was over, the newly independent nations of Southeast Asia were soon faced with the external influence of competing Western superpowers. These new Southeast Asian nations searched for ways
to achieve national cohesion and development, and were faced with the conflicting ideologies of capitalism and communism, as the United States and the Soviet Union competed for influence in the region (Turnbull 1999: 597). China became another major power in this struggle for influence when it adopted communism in 1949 (Stuart-Fox 2003: 150). Communism was an attractive option to many people in Southeast Asia at this time. Its ideologies promised freedom from foreign rule, a more equal society, higher standards of living for the poor, and more land for the peasants. For many, this was a much more attractive option than the capitalist model of the United States that meant further economic inequalities and continued economic dependence on the West (Turnbull 1999: 599).

This economic/ideological divide was solidified by the creation of ASEAN (Association of Southeast Asian Nations) in 1967 (Turnbull 1999: 599). Backed by the US, ASEAN was created by the governments of Indonesia, the Philippines, Thailand, Singapore, and Malaysia, with each country adopting capitalist development as its aim. Its declared purpose was to “accelerate the economic growth, social progress, and cultural development in the region,” although these were also what were felt to be the main areas of concentration needed to prevent the spread of communism into each country (Turnbull 1999: 615-616). Later, Japan came to replace the US as the leading economic partner, with one-fifth of its total overseas investments directed at ASEAN members by 1982 (Steinberg, et. al. 1987: 446).

On the other side of the divide, were the countries of Indochina who had all adopted communist governments by 1975 (Turnbull 1999: 624). After the Vietnam War, these countries formed their own economic bloc to counter their exclusion from trading
opportunities with ASEAN and the US, and still be able to develop economically (Steinberg, et. al. 1987: 449). They were led by Vietnam, who looked for other means of aid in order to help develop itself and its neighbors. The Soviet Union provided a majority of its aid, although the World Bank, Asian Development Bank, and International Monetary Fund all lent funds, and trading partnerships were developed with Singapore, Sweden, Australia, Japan, and other western European countries (Steinberg, et. al. 1987: 449; Turnbull 1999: 625). Laos and Cambodia received their development aid from Vietnam, China, the Soviet Union, and others.

Regardless of which ideology they sided with, by following this Western economic model and receiving foreign aid, the nations of mainland Southeast Asia began to slowly make partial entrance into the industrial world. Many of the same resources that were exported by the colonial governments such as rubber, tin, and rice continued to be exported for profit by the independent national governments, keeping them at the mercy of the economic fluctuations of the outside world much as they had been during colonial times. In addition, a new export-oriented industrialization market was developed. Textiles, electronics, shoes, and other such products began to be produced in Southeast Asia and shipped to overseas markets (Steinberg, et. al. 1987: 445-447).

By the 1980’s, the strict communist policies of earlier years were beginning to fall out of favor. The failure of the communist economies, despite huge amounts of aid from both the Soviet Union and China for many years, plus the overall poverty and lack of development led these countries to begin to shift to more open, capitalistic economies (Turnbull 1999: 637). As a result, in July 1995 Vietnam agreed to join ASEAN, followed by Burma and Laos in 1997, and Cambodia and 1998 (Stuart-Fox 2003: 214).
Local Land Tenure

In addition to the adoption of the Western model of an export-based, commodity producing economy, the commodification of land and the land tenure practices of the colonists have also been continued by the independent Southeast Asian governments. Much pressure has been put on the land from population growth, non-agrarian economic activities, urban growth and housing projects, and the shift from a subsistence to a market economy. Little empty land now remains, and governments in Southeast Asia have implemented systems that mandate titles and registration to prove the ownership of land. Legal, Western-style systems of land ownership are preferred over the person-to-person traditional systems of land tenure that the governments feel are less secure and unsuitable for development.

In Thailand, large scale registration programs were initiated in 1954, when it was announced that land owners could legally claim lands that they possessed prior to that year. Unregistered lands from then on were to be considered the possession of the state. The NS4 Title Deed was created that gave people full ownership of their land, and allowed them the new ability to be able to sell, rent, or mortgage their land (Slaats 1999: 91-103).

Such Western-based land reform systems have transformed community land tenure in mainland Southeast Asia into individual land ownership that is now under the legal, economic, and political systems of the state. Land acquisition is now susceptible to local and global market forces, allows outsiders to purchase land in local areas, and excludes the disadvantaged and poor who cannot afford to buy and sell land. In addition, the boundaries that formerly followed the natural contours and patterns of the land have
been replaced with administratively functional straight lines that are more easily drawn and mapped (Slaats 1999: 91-103).

Clearly, the ideas concerning borders, boundaries, and land ownership, as well as development based on the commodification of natural resources that were introduced by the colonial powers did not recede or change with their departure. Rather, the mainland Southeast Asian governments themselves adopted these approaches and continued forward with them. With these changes, local governments were able to view natural resources inside of their demarcated territory as resources that could be legally owned and controlled in any ways that they viewed as beneficial for their own development. One further change that occurred that is important to discuss, is the transformation that these natural resources have undergone from having a sacred element to being viewed as primarily secular economic resources. This change took place amongst the elite as well as certain sections of the common populations. All of these transformations in approach will be shown to have great relevance to the development of the Mekong River in Chapter Three.

SECULARIZATION IN MAINLAND SOUTHEAST ASIA

While all these changes were taking place, one particularly important change has also transpired which largely affects current attitudes towards water in mainland Southeast Asia. This is the process of secularization. In colonial and post-colonial mainland Southeast Asia, a trend separating the secular and the spiritual began to occur alongside the modernization and development that was taking place. The focus on
economic development and the modernization of society led many leaders in the region, be they colonial overlords or post-colonial bureaucrats, to make a distinction between religious beliefs on the one hand, and superstitious beliefs on the other. As the new scientific knowledge that was based on concrete provable facts, and which brought in so much in the way of new technology, began to revolutionize the society, the less scientific "superstitious" beliefs that had once been a large part of religion came to be seen first by the royalty and privileged upper classes, and later by certain segments of the common peoples, as something connected to an unenlightened past. Religion in a reformed, less "backward," and more scientifically rational sense was still accepted as an important practice and part of traditional culture, yet this now began to be seen as something separate and generally disconnected from the activities and functions of daily secular life. As the post-colonial era progressed, a growing urban middle class that was immersed in this new scientific and capitalistic world began to adopt similar approaches in their spiritual and daily lives, leading to the existence of more secular segments of society, in combination with the beliefs and attitudes of those in power generally continuing in a secular direction (Steinberg, et. al. 1987: 463-465). It is important to note, however, that despite this shift towards a secular approach to every day life and the natural environment, certain elements of the "superstitious" spiritual beliefs regarding the natural world did remain intact amongst the common peoples of the region (to be discussed further in Chapter Three). But this was only the case only amongst the common peoples, and not the elite. Environmentally, this was very significant, as the beliefs and attitudes of those in power are what most directly affect the fate of a nation's natural resources.
Burma and Indochina

Much of this new mentality concerning the separation of the spiritual and the secular was transmitted to the upper classes via education beginning in the colonial period. In Burma under the British, two very different education systems were developed for the upper class citizens and the common peoples. For the first group, private, government, and missionary run schools were set up that taught a Western, secular education based upon scientific truths, with most of this instruction taking place in English. For the rest of the population, education continued to be taught in the local wats, or temples, where a traditional and religious-based curriculum was used.

The French attempted to create a similar divided education system in all of Indochina, although a disproportionate amount of their education program was implemented in Vietnam. By the end of World War II, only about one percent of the population of Laos was receiving an elementary education, and only 200 students were receiving a secondary education in French. Cambodia fared only slightly better, with 192 primary schools that were taught in French, and 845 primary Buddhist temple schools, in 1941 (Keyes 1995: 101).

Vietnam

In Vietnam, this introduction of Western education led educated Vietnamese in the early 19th century to begin to separate their previously held Confucian beliefs and the new scientific Western beliefs. Confucianism concentrated on harmonious social and family relationships, and emphasized the qualities of filial piety, loyalty, and humanness. The five personal relationships that Confucianism considered as the most important for
social harmony were father-son, ruler-subject, husband-wife, elder brother-younger brother, and friend-friend.

A strong emphasis had historically been placed on virtue in Confucian teachings and education, but intellectuals of the early 20th century Vietnam began to argue that intelligence should be placed before virtue on a scale of educational goals. A divide began to be created in the minds of the educated population between the world of morality and religion, and the world of science. Confucianism had taught that a universal order existed, and that within this universal order, the worlds of human relationships, social order, and the heavens all were interrelated. In the early 20th century, however, many were beginning to believe that science was replacing these Confucian views, and making religion unnecessary, thereby necessitating a focus on intelligence over virtue (Marr 1981: 114-115, 330).

Science was beginning to be seen as the way for Vietnamese society to progress and advance. Many scholarly writers were calling for methods such as scientific inquiry, measurement, and presentation to be used in order to obtain this goal, and uncover new truths that would challenge and change old customs and behaviors. All aspects of the physical and social world, including the biological, physical, social, and psychological, were beginning to be considered as governed by scientific laws and explanations (Marr 1981: 342-343, 359-360).

As a result, social problems such as poverty, inequality, disease, prostitution, crime, and drug addiction began to be seen as problems that could be studied and overcome scientifically, rather than traditional explanations that had simply blamed all
social problems on the moral breakdown of Confucianism's five relationships (Marr 1981: 114-115).

Thailand

The clearest example of a state's conscious decision to separate the spiritual and secular comes from Thailand. Prince Mongkut, before becoming king, spent 27 years in the Buddhist monkhood, and during this experience became increasingly disillusioned with the current Thai Buddhist practices. The future king saw these practices as increasingly straying from the true teachings of the Buddha and overly superstitious, and eventually became enamored with the practices of the Mon monks, which he felt were closer to what the Buddha preached. This critical outlook led him to create the Thammayuttika sect of Buddhism in Thailand, in order to reform the Buddhist practice and demythologize the religion (Reynolds 1972: 63-66, 79-80; Keyes 1995: 104; Reynolds 1976: 212).

In addition, while still a prince, Mongkut had much exposure to Western ideas and education through the tutoring and influence of Christian missionaries. Mongkut received instruction in English and Western science, especially focusing on astronomy and physics, and engaged his missionary instructors in long discussions on comparisons in religion between Christianity and Buddhism. Mongkut's rational and critical approach towards Thai Buddhism allowed him to be more receptive to Western critical approaches, and led him to adopt many of its secular scientific principles (Wyatt 1969: 27-28; Reynolds 1976: 211-212).
The Thammayuttika was one example of great change in religious thought that was beginning to emerge in Thailand. Mongkut and other Western educated members of the elite had begun to see the functioning of nature as separate from religion, and this led them to see many of the religions explanations of the natural world as superstition and myth. This included the Traiphum cosmography, whose explanations of planets, weather, and biology were no longer considered to be valid, and the Jataka tales, which were now considered to be only moral fables. This change in attitude was clearly illustrated by a member of the elite, Chaphyraya Thiphakorawong, who wrote a book entitled *Kitchanukit*. This book reviewed the ideas and concepts of the Traiphum cosmography, and then corrected these “superstitious” ideas with scientific explanations from meteorology, geology, astronomy, etc. This book replaced previous mythological explanations about the cause of rain, illness, earthquakes, comets, eclipses, etc, with modern scientific ones. In the end, it divided the Thaiphum into two different realms, an acceptable one that focused on purely religious principles, and a superstitious and incorrect realm that dealt with the natural world (Reynolds 1972:125-132; Reynolds 1976: 215).

The next step was to spread this secular knowledge of the natural world out into the general population via education. This was accomplished by the educational reforms of King Chulalongkorn and his half brother Prince Damrong, who served as his director of the education department. Together they designed an education program, launched in 1892, to be promoted in the traditional monastery schools that would teach a more Western scientific-based knowledge of the natural world as their curriculum. Secular textbooks written by members of the elite covering topics of math, history, science, and
geography were distributed to schools across the state free of charge, and an annual examination system was set up that was designed around the new government textbooks. In this way, schools that did not use the new texts would produce students who would be unable to pass the examinations (Wyatt 1969: 75, 129-130). By 1898, modern geography was included in the curriculum of nearly every grade level, and knowledge of a round earth, use of maps, and existence of nations and territories on a map, were all becoming common knowledge for the youth (Winichakul 1994: 48).

Communist Secularism in Laos

Another example of a government of mainland Southeast Asia adopting more secular elements into their political ideologies can be seen in the communist nation of Laos. Being a secular ideology, communism further emphasized the trend to see the natural world in scientific terms, separate from the superstitious spiritual realm. In Laos after 1975, the new communist government ceased to promote Buddhism as the state religion. Lao citizens were told by the government that they were free to practice any religion they chose, or even to practice no religion at all. Religious festivals and ceremonies were canceled in order to save money that would be put towards development of the nation instead. Efforts were even made to politicize the Sangha, or Buddhist monkhood, with the monks made to promote the state’s developmental programs through their preaching. This practice was supported by modernist Buddhist monks in Thailand, who were also aiming to replace what they considered to be superstitious practices with scientific viewpoints.
On a popular level, however, these restrictions, and social changes brought on by the post-colonial and communist eras, led to a resurgence of religious interest and practice as society’s way of coping. As time has gone by, the Lao government has also relaxed many of its restrictions on religious practice, and has even begun to use it as a unifying tool for national cohesion. However, they still place emphasis on non-superstitious forms of Buddhism that do not attempt to spiritually explain the functioning’s of the natural world. This, combined with the increasing influences of urban lifestyles, a consumer driven economy, modern education, and other modern influences coming in from Thailand and the West, has led the leaders and citizens of Laos to further separate the worlds of religion and everyday life (Evans 1998: 182-199).

CONCLUSION

Returning to the indigenous approach to natural resources such as water discussed in Chapter One, one can conclude that the colonial focus on the commodification of natural resources had a lasting effect on the region. The elite began to view the control and manipulation of the natural world and its resources as a way of representing their secular rather than spiritual power. Resources which the elite and common peoples once considered to have a strong sacred and spiritual connection within the animist-influenced belief system of the region were transformed into commodities that those in power saw as mainly useful for sale and export in order to make money and develop in the new capitalist economy, with no more thought or fear of offending any of the water deities they had previously believed in and worshiped. Ideas that had developed during the
Industrial Revolution in Europe that focused upon a purely secular use of natural resources for development purposes were transferred to mainland Southeast Asia via economic policies and education of the privileged classes during the colonial era. An overall trend to separate spiritual beliefs from the daily real-world secular life further encouraged the elite of mainland Southeast Asia to be able to view these resources, including water, in a purely economic and developmental sense. These beliefs soon began to be passed to certain segments of the common population of the region via educations programs designed to introduce Western scientific ways of viewing the natural world. Even after the colonialists had left, local governments and developers continued to view natural resources as secular commodities that were useful for purely secular development purposes. In addition, the colonial division of the region into strictly demarcated territories that were to eventually become nation-states introduced the idea of the possession of areas of land and all of the natural resources found within them. Possession of the valuable natural resources within these fixed territorial boundaries could suddenly be politically and militarily defended. National borders allow for resources to be directly owned by each nation, and to be used and exploited in any way that a nation sees fit. This has set the stage for serious conflicts over the shared international resource of water running through rivers, as each nation fights for the use of this water for its own development. A perfect example of this is the Mekong River which runs through China and the mainland Southeast Asian nations. The water of this river is a shared resource that greatly impacts the region as a whole, yet is also subject to the individual wishes of each country as it flows within their borders.
CHAPTER 3- DEVELOPMENT OF THE MEKONG AND ITS IMPACTS

INTRODUCTION

The history of the development of the Mekong River provides an excellent example of the commodification of natural resources that has been discussed above, and how rulers now view the manipulation and exploitation of these resources as a display of their secular political and developmental power. This manipulation and exploitation of the natural world and water is no longer seen as an extension or validation of a ruler’s spiritual power, as was the case in pre-colonial times. China and the nations of mainland Southeast Asia currently view the water of the Mekong as an ideal sustainable resource to help facilitate their development, through the creation of hydroelectric producing dams and as a transport route to aid trade, commerce, and tourism in the region. China is currently constructing a series of hydroelectric dams along the upper Mekong, and a project to blast out the major obstacles within the Mekong in order to facilitate the passage of larger ships has partially been completed by both China and some of the mainland Southeast Asian nations.

These development projects on the Mekong have been made possible by the fundamental shift that occurred in mainland Southeast Asia during the colonial period. The formerly sacred resource of water has undergone a process of secularization and commodification that has allowed rulers and developers of the nations on the Mekong to view this water strictly as a secular resource, no longer believing in or feeling the need to respect or fear any water deities that the peoples of mainland Southeast Asia formerly
worshiped. And while the leaders of the nations on the lower Mekong express concerns about the possible negative impacts the development projects on the Mekong may have on their own nation’s livelihood and development, the creation of strictly demarcated borders has allowed the nations undertaking these projects to ignore any concerns and move forward with their own development plans.

Secular environmental groups and NGO’s have provided the main form of protest against the construction of dams, development, and exploitation on the Mekong River. These groups also serve to point out the potential negative environmental effects that may be occurring in part due to the shift in approach towards the natural environment, from sacred to secular, by the local elite.

Many of these new ways of approaching the natural world that the elite adopted have also been passed on to the common population of mainland Southeast Asia through education systems, etc. However despite the general trend to separate the spiritual from the secular, the spiritual connection of the mainland Southeast Asian peoples to water and the natural world has not disappeared. The current celebrations of the water festivals discussed in Chapter One clearly represent both the existing spiritual attitudes towards water and the natural world, as well as the secularization that has occurred in the common peoples of mainland Southeast Asia in post-colonial times. Although the spiritual elements of these water festivals have been diluted, current practices show that these elements still exist in present times.

In addition, local villagers in mainland Southeast Asia continue to worship water spirits in the Mekong, and certain Buddhist groups have emerged and made efforts to re-emphasize the spiritual component of the natural world, showing that belief in the
spiritual aspect of water and the natural world, although perhaps not as prevalent as in the
past, is still alive in the common peoples of mainland Southeast Asia today. However,
these environmental groups that are protesting the development on the Mekong on
secular ecological grounds, as well as the Buddhist groups that are attempting to re-emphasize the spiritual importance of the natural world, are marginalized groups in
today’s society, with little political or decision making power that can directly affect the
decisions of the elite. This is in stark contrast to pre-colonial times when both the elite
and the common peoples held the natural world to be spiritually important. Due to this
current state of affairs, many are now wondering, “Will the Mekong survive”? 

GEOGRAPHY OF THE MEKONG

The Mekong River begins its journey high on the Tibetan Plateau in the Jifu
mountain range, 5, 200 meters above sea level in the Yushu Autonomous Region, where
it is fed by three separate sources. Three great rivers, the Mekong, the Yangzi, and the
Salween all originate in this area (Kasetsiri 2003: 3; Werry: 1999). The Mekong is the
longest river in Southeast Asia, which current Chinese estimates put at 4,909 kilometers,
and the 12th longest river in the world (Kasetsiri 2003: 3). However if measured by
annual flow, it moves up to the 10th greatest river in the world, spilling 475 billion cubic
meters into the South China Sea every year on average (Hoskin1991: 10). It either
borders or flows through the six nation-states of China, Burma, Thailand, Laos,
Cambodia, and Vietnam, and has a basin of around 810,000 sq. km (Kasetsiri 2003: 3).
Its natural resources include the forests along its banks, gold found in Laos, aquatic and non-aquatic animals, the largest catfish in the world, and a species of fresh water dolphin, making it second only to the Amazon River in South America in terms of its diversity. In addition, it is home to 100 million people living along its banks. This river is known by many different names in its various regions, including Dzachu or “River of Rocks” in Tibet, Lancang or “The Rushing Blue” in China, Mae Nam Khong, or “Mother Water” in Thailand and Laos, Tonle Tom or “Great River” in Cambodia, and finally Song Cuu Long or “Nine Dragons River” in Vietnam, based upon the 9 channels that flow into the sea when the Mekong breaks up and fans out in its delta in Vietnam (Kasetsiri 2003: 4-5; Werry 1999).

The Mekong can be divided into 3 main parts, the upper section from Tibet to the Golden Triangle, once an infamous opium growing area and now a tourist attraction where the borders of Burma, Laos, and Thailand meet, the middle section that winds through Thailand and Laos, and the lower section from the Cambodia/Laos border into the Vietnamese delta (Kasetsiri 2003: 7). The physical geography of these different areas changes greatly as one moves down the Mekong. From the Tibetan Plateau upon which it starts, the Mekong drops 2000 meters by the time it reaches the former Tibetan town of Qamdo. Through this area, and into the province of Yunnan, it travels through some of the most inaccessible terrain in the world, cutting through extreme gorges and valleys which are the result of the collision of the Indian Sub-Continent and Asia between 40 and 50 million years ago (Hoskin 1991: 12). Within Yunnan, the Mekong runs through the town of Dali, where it is fed by nearby Lake Erhai, 120 kilometers away, via one of the Mekong’s largest tributaries (Werry 1999).
By the time it leaves China through the southern border of Yunnan, it has descended 4,500 meters, leaving it only 500 meters above sea level, and has already traveled 2,198 of its 4,909 kilometers, becoming navigable for the first time in this area (Hoskin 1991: 12; Kasetsiri 2003: 3; Werry 1999). It now forms the Laos/Burma border for just over 200 kilometers until it reaches the aforementioned Golden Triangle. Here it turns east, and briefly forms the Laos/Thai border, then leaves the border area and moves entirely into Laos, until it reaches the old kingdom of Luang Phrabang in what is today northern Laos (Hoskins 1991: 14). Within northern Laos, the Mekong encounters more than 20 large rapids where the water is often only one meter deep or less, making navigation difficult or impossible (Werry 1999). From here, it flows another 250 kilometers through Laos until it rejoins the Thai/Laos border (Hoskins 1991: 14).

At this point, the river slowly curves along the border, following the northern rim of the Khorat Plateau in northeastern Thailand, and it is here that it leaves behind most of the mountains and flows flat and wide, sometimes up to 1.2 kilometers in width. As it leaves Laos at its southern border and crosses into Cambodia, it encounters one of its greatest natural obstacles, Khone Falls. Just before these falls, the river breaks up into several branches, creating what is known in Laos as the 4000 islands (Hoskin 1991: 14). Khone falls occurs about 180 km. above Phnom Penh in Cambodia, and drops a height of 20 meters over the length of around 6 miles, making the Mekong river un-navigable (Encyclopedia Americana 1999: 420).

Within Cambodia, the Mekong is joined by the Tonle Sap tributary at Phnom Penh, the Cambodian capital (Hoskin 1991: 14-15). This tributary flows in from the Tonle Sap Lake in Cambodia, the largest lake in Southeast Asia (Werry 1999). Here the
river splits into two arms, the Mekong and the Bassac distributary, which rejoin a few kilometers downstream, and then flow into Vietnam, where the Mekong splits many times again in the fertile 50,000 square kilometer rice growing delta area of southern Vietnam (Hoskin 1991: 15). The silt carried by the Mekong is deposited here in the delta, adding 200 feet of land to Vietnam each year (Osborne 1975: 16). This delta is made up of waterways, both natural and manmade, that equal a length longer than that of the entire Mekong itself, totaling around 5000km (Werry 1999). These waterways flow through the second largest mangrove swamp in the world, which naturally protects the delta from the force of the South China Sea, where the Mekong finally ends its long journey (Werry 1999).

In recent times, the nations along the course of the Mekong have begun seeking ways to use the river to aid their development into the modern world. Starting in the 1940’s, plans for the development and exploitation of the Mekong began to be formed, first in the lower Mekong basin where the Mekong flows through the countries of Burma, Thailand, Laos, Cambodia, and Vietnam, and later by China in Yunnan province.

DEVELOPMENT OF THE MEKONG

Ecafe

It was in 1947 that the United Nations General Assembly approved the establishment of the Economic Commission for Asia and the Far East (ECAFE). This commission was formed to promote economic development in Asia after WWII, and after rejecting several Asian rivers upon which to focus their development plans due to politics
and tensions in certain areas, decided to focus its efforts on the Mekong. Within two years of its creation it had formed the Bureau of Flood Control and Water Resource Development, and in 1952 started a study on the possibilities of irrigation, hydropower, and navigation on the Mekong (Browder 1998: 31).

In 1957, ECAFE put out a report on the findings of this study, called The Development of Water Resources in the Lower Mekong Basin, which was to become the foundation for research and projects on the Mekong for the next 40 years. This report suggested several primary projects on the Mekong River that were to promote the economic development that they were striving for. On the lower portion of the river, dams were proposed at Pa Mong, Khemarat, and Khone Falls in Laos, and at Sambor and on the Tonle Sap tributary in Cambodia. In the mid sections of the river, three further dams were proposed at Luang Phrabang and Thakhek, and one on the Nam Theun tributary, all in Laos. This report claimed that these dams would provide flood reduction, irrigation, and hydroelectric power for the Mekong Basin (the Lower Mekong, consisting of the nations of Vietnam, Cambodia, Laos, Thailand, and Burma), and was written following the dominant approach of the time, with a strong emphasis on the economic advantages of the plan but little mention of the social, cultural, spiritual or ecological impacts (Friesen 1999: 80-81, 83, 85).

However the ECAFE committee also realized at this time, that one of the biggest challenges they were to face with such issues was the fact that the Mekong River runs through four separate countries in its lower basin, all with a history of distrust and warfare between them. Cooperation between all four was to be necessary if any of the proposed advantages were to benefit the region (Hori 2000: 83). With this in mind, what
came to be known as the Mekong Committee was formed in 1957, consisting of Vietnam, Laos, Cambodia, and Thailand, with heavy emphasis on the creation of “Mekong Spirit,” by which they meant a spirit of cooperative unity amongst all the countries involved for the good of the region as a whole (Dieu 1999: 55; Hori 2000: 83). In addition, in order to maintain this spirit and make sure each country’s needs were equally and fairly met, it was stated that any developments made were to be unanimously agreed upon by all four members before being passed into action (Dieu 1999: 66-67). With Burma showing no interest, and for political reasons in the case of China, neither of these two upper Mekong countries were included (Browder 1998: 39).

Although created by the UN, the funding and technical expertise for the committee and project came from the US. By this time period, the US had recently replaced France as the main anti-communist foreign power in the mainland Southeast Asian region, and had developed a geopolitical strategy to prevent the spread of communism through social and political means, in addition to military assistance. The US felt that if social problems such as poverty, land reforms, and irrigation could be reformed by means such as increased agricultural services and aid packages, then rural discontent, and hence the appeal of communism, could be limited as well. Therefore, in 1965, US President Lyndon Johnson pledged a $1 billion aid package to the development of the Mekong region (Acker 2001: 151-152).

The Wheeler Report

Two reports were made in this early period of the formation of the Mekong Committee that set the tone for how things were to proceed. The first of these was known
as the “Wheeler Report.” A team responsible for preparing this report was sent out led by a retired lieutenant General R.A. Wheeler. Approaching the issue from a technical and engineering standpoint, this team made light of the need to develop topographical maps, to observe water levels along the river, to record climate patterns, and to look into the feasibility of fisheries, irrigation, available mineral resources, hydroelectric power, flood damage, etc. (Hori 2000: 84). The focus of this report again emphasized the potential economic uses for water, rather than any negative social, cultural, spiritual, or ecological aspects that development could bring (Friesen 1999: 93). Based upon this report, the Mekong Committee was then able to secure funding by foreign countries such as the US, New Zealand, France, and Japan for their project to further develop the Mekong, which was a necessary measure, as the countries of the committee itself were not able to fund such a project themselves (Hori 2000: 84).

The White Report

A second report in 1962 was funded by the Ford Foundation and was known as the “White Report.” This report stressed to the Mekong Committee the need to investigate the social and economic impacts of large scale dam projects before investing huge sums of money into them. For example, it called for a study of the market for electric power before generating hydroelectric power, for strengthening the agriculture sector before starting on large irrigation projects, and executing some flood forecasts in the region. Of key importance, this report encouraged the committee to start with smaller projects of this kind on the tributaries of the Mekong to see how they worked, before launching into large-scale projects on the main river itself. By the mid-1960’s, due to this
report, several tributary damming projects had been started, along with further plans for the Mekong itself (Browder 1998: 46).

One of the main projects planned for the Mekong River itself was the Pa Mong dam, to be built 15 kilometers north of Vientiane, Laos, a project that the United States invested heavily in, contributing $13 million. Planned to be 2.5 times larger than the Aswan Dam in Egypt, produce 2.8-4.0 kilowatts of power, irrigate 5 million acres of land in Laos and Northern Thailand, and create a reservoir of 61 million acre-feet, this project was seen as the jewel of the Mekong development plan (Friesen 1999: 104).

The Indicative Basin Plan

In the late 1960’s, the Mekong Committee decided that a new overall framework plan should be put in place in order to update all the previous studies and move the project forward. This plan was completed in 1970, and was known as the Indicative Basin Plan. It was divided into two separate plans, a short term plan focusing on 1971-1980, and a long term plan that stretched from 1980-2000. This plan listed a possible 180 projects that would start, as the White Report had proposed, on the tributaries, and eventually move on to the Mekong itself. On the main river, the Pa Mong dam was planned for 1983, dams at Stung Treng and Sambor in Cambodia by 1985, and the Tonle Sap in Cambodia by 1987, with additional dams planned at Luang Phrabang and Ban Koum. The stated goal of this project was to improve the poor economic conditions in the Mekong Basin, raise the GNP, and overall better the lives of the people in the region (Friesen 1999: 109-111, 123).
In building these dams, the main purposes were irrigation, power, and flood control, while the secondary purposes were river navigation, fishing, and recreation. With irrigation, the goal was to open up enough new farming lands and improve the water supply of the existing ones to provide enough food not only to eliminate hunger and need in the region, but also to create an export surplus to provide income to the region. The hydropower created by the dams was to be used to power a planned industrial revolution in the region. These dams were also to be designed such that they would control the flood damage in the area and increase dry season flow levels of the Mekong. Transportation up and down the river was to be facilitated by a series of locks over rapids at such places as Sambor and Khone Falls. 87 tributary dams were planned for short term power and irrigation needs, with the larger Mekong dams being built for longer term needs, including flood control and navigation. The largest storage capacity of all of these proposed dams would be at the Pa Mong and Stung Treng dams, with reservoirs of over 100 million cubic meters (as compared with the Hoover dam in the US which creates a reservoir of 36,703 million cubic meters) (Friesen 1999: 113-121).

The Intern Mekong Committee

However in 1975, all such plans for the Mekong generally came to a standstill. With the end of the Vietnam War, which itself had already delayed plans, Cambodia, Vietnam, and Laos all came under the control of communist governments, prompting the US and others to withdraw funding and assistance. The northeast of Thailand was the only region in which some development continued. With plans thus stalling and the original Mekong Committee basically unable to function, yet not wanting to completely
abandon a plan into which so much money and efforts had been placed, in 1978 an organization known as the Interim Mekong Committee was founded to see the projects through until such a time when previous plans for construction could be resumed. With the new Khmer Rouge communist government in power, Cambodia now refused to participate. This was a major problem which blocked all research and construction for the near future, as the previous agreement of unanimous decision amongst all four countries of the Mekong Committee was now impossible. The Interim Committee was then forced to re-form as a new committee that did not include the 4 member agreement policy, and therefore could forge ahead without Cambodia (Dieu 1999: 201). With the loss of US funding, groups concerned more with local welfare interests than geopolitics stepped in, including the Scandinavian countries, Japan, and the United Nations Development Program (UNDP). So while aid and funding did continue for the new Interim Committee, this aid was significantly less than before. It never surpassed 40 million per year in the 80’s, nor 75 million a year in the 90’s (Acker 2001: 165).

By the end of the 1970’s none of the proposed mainstream projects had been started, and of the 180 total proposed projects in the Indicative Basin Plan of 1970, only 16 had been completed, all in northeast Thailand. Because of this, it was decided to again revise the plan, with a new mid-term 10-15 year version to be completed in 1987. However, without the previous restriction on unanimous decision making, this plan took on a more national rather that regional nature, and concerns about the water rights of all the countries in the region were much less prevalent (Dieu 1999: 203). 26 minor dams were planned in Thailand, Laos, and Vietnam, for domestic use. Probably the most significant change in this new plan was the lowering of the height of the water level of
the Pa Mong dam from a proposed 250 meters to 210 meters, and the plan to build a second dam upstream from it in order to make up for the resulting water loss. This was in direct response to concerns raised by local people about resettlement issues, and lowered the number of resettled people from 250,000 to 40,000. This showed a much more socially conscious approach to development in the area (Hori 2000: 88-89).

The Mekong River Commission (MRC)

Finally, in June 1991, with a more stable political situation, Cambodia requested re-entrance into the committee. As a result, in 1995 an agreement was finally signed in Chiang Rai, Thailand that established the Mekong River Commission (MRC) to replace both the former Mekong Committee as well as the Interim Committee. With this, another Basin Development Plan was drafted (Dieu 1999: 204-205). This time, attempting to gain cooperation between all of the countries on the Mekong, the MRC extended an invitation to both China and Burma (Pinyorat 2004). The four lower Basin countries were all in favor of the inclusion of these remaining two countries. However both instead decided to take a more cautious approach and join as observers only (Mears 1995).

One of the major changes in the direction of the new Mekong River Commission was the 1994 Run-of-the-River Plan. Taking into account the problems with forced resettlement of so many people with the large scale dams and their reservoirs, the plan for Mekong dams was changed instead to smaller dams and reservoirs that displaced less people and relied more on natural river flow to generate hydroelectric power. However these dams no longer provided flow regulation and flood control. 10 sites were selected for these dams, the 4 main ones being Pak Bang in Laos, Sayaburi in Laos, Ban Koum on
the Thai/Laos Border, and Don Sahong in Laos. But with opposition from Thai and international environmental groups, along with a lack of Laos government enthusiasm for working in cooperation with Thai water agencies, and Lao interest in maintaining the original reservoir-style dams for its tributaries, the actual implementation of such dams was uncertain from the beginning (Browder 1998: 72-73). But this plan did again show a conscious approach to take into account some of the social and environmental concerns of development.

However, the power to implement this and any other proposed changes would prove difficult for this committee. During the Interim years, the government of Thailand had become very comfortable with the more national focus that had not required unanimous agreement amongst all committee members. They had taken advantage of this change to implement plans to divert water into the Chao Phraya River, which eventually flows through Bangkok, and wanted to divert additional water to irrigate their dry and poor northeast region. As they had grown into the largest economic power in the Mekong Basin, Thailand was now taking full advantage of its favorable position to try to continue this arrangement in the new plan. The MRC pointed to Thailand’s choice of two Mekong tributaries, rather than the Mekong itself, for their proposed water diversion schemes as a deliberate attempt to sidestep the approval from other MRC countries. While opposition to these ideas came from all the other countries involved, Vietnam was the most vocally opposed. Having developed themselves economically due in large part to their “rice basket” in the Mekong Delta, they were strongly in opposition to any reduction of the downstream flow of water. A stalemate of around 2 years followed in negotiations for the signing of the new plan. With donor pressure, however, talks eventually moved forward
and Thailand was able to achieve its goal. It was written into the agreement that large-scale water diversions were allowable, and that countries undertaking national plans that involved the use or development of the Mekong River were required only to inform the other nations, but not receive their permission, although they should attempt to ensure the projects do no harm to the neighboring countries (Friesen 1999: 274-278; Wain 2004b: 50).

So while this new commission brought all four states back together to jointly negotiate the fate of the Mekong River and region, many of the conflicts amongst them were not fully addressed in the new Basin Development Plan. Thailand was still allowed to take water as it pleased, and any agreement on dry season minimum water flow levels was put off until a Water Utilization Plan (WUP) could be developed at some later date. In addition, no definite language was included in the agreement to require states to give any type of detailed descriptions of their plans to the MRC before implementation, nor was there any language on whether or not they would have to adjust these plans if not compatible with the MRC’s guidelines. Similarly, no firm agreement was made on the course of action to be taken to ensure that upper Mekong counties would properly compensate downriver countries that were damaged by their river plans. In addition, it was decided that the MRC could only involve itself in issues that were agreed upon by all four states. In other words, much of the controversial issues were sidestepped or postponed, leaving the MRC quite weak, and leaving some doubt about its future ability to effectively manage and implement a comprehensive plan for the region versus the interests of individual states. With a weakened MRC, the individual countries no longer seem to respect its authority or guidelines. For example, since this agreement was signed,
the MRC states that Vietnam failed to notify Cambodia that it was building a dam on the Se San River, and also ignored the requirement to ensure that this project does no harm to neighboring countries (Acker 2001: 180-186; Wain 2004b: 50).

What seemed to be the most direct way for the MRC to get on track after 1995 was to complete the Basin Development Plan and the Water Utilization Plan. However funding for hydroelectric power at this point had shifted mainly to private investors rather than from national governments, and was becoming increasingly difficult to secure (Acker 2001: 205). For this reason, the Basin Development Plan was not finished until October of 2000, and as of July 2001, funding had only been collected for about half of the projected $6.2 million needed for completion of its plans and projects. The WUP was not started until 1999 for similar reasons. So while the MRC was certainly more centrally organized than it had been during its Interim Committee days, its effects and influence remained similar to the days of the Interim Committee. It seems that without a single political authority and major funder such as America had been for the original Mekong Committee, little could be accomplished regionally amongst the various national agendas. By 2001, of the seven dams on the Mekong originally proposed by the first Mekong Committee, only the Sambor dam was still being studied for possible completion, although not until 2020. The Mekong River Commission has now been reduced to a relatively minor influence on plans for the Mekong, involving itself more with projects like the regulation fish populations in the Tonle Sap Lake (Acker 2001: 187-191).

However, in 2002, the MRC did negotiate a deal with China in which the Chinese government signed an agreement to provide information to them concerning river flow and water levels in its upper reaches. Despite the 1995 offer to join, China has never
become a member of the MRC. However, China has been a regular dialogue partner with them at meetings three times a year since 1996, and from 2002 began to provide more detailed information on the conditions of the river every 24 hours by computer. In addition, the MRC agreed to assist the Chinese government in upgrading their water measuring stations so that more accurate data can be gathered (Mekong River Commission 2004).

Despite the twists and turns of regional cooperation, water resource development has remained a national issue. Since 1975, much damming has taken place on the Chao Phraya for irrigation and hydropower in Thailand, and many of the Mekong tributaries in Thailand and Laos have hydropower projects either in operation or under construction. Laos has built two dams on a tributary of the Mekong in order to sell electricity to Thailand, and has four other hydropower projects under construction and about 12 others being assessed for environmental effects (Acker 2001: 191-192; Wain 2004a: 51). As of 2002, Cambodia has plans for 4 dams on the Se San River, a tributary of the Mekong that also runs through Vietnam. Vietnam completed the Yali Falls Dam on the Se San in December of 2001, is going ahead with three more dams on the same river, and has plans for two others (Australian Mekong Resource Center 2002; Wain 2004a: 51).

The Greater Mekong Sub Regional Economic Corporation (GMS)

In the past 10 years, another major player has emerged in the development of the Mekong. Known as the GMS, or “Greater Mekong Sub Regional Economic Corporation,” this group was established in 1992 by the Asian Development Bank (ADB) (which is funded largely by Japan), with the goal of promoting the development of the
Mekong region through energy, telecommunications, environment, human resources, agriculture, tourism, and health. Their plan is to promote the region as a hub of investment, and create an infrastructure to link the Mekong Basin. Three economic corridors are planned, starting with the East-West Economic Corridor that will link Moulemien, Burma to Danang, Vietnam, thereby connecting the Andaman Sea with the Pacific, a trading route that some believe could become as important as the Silk Road in earlier times. Next is the North-South Economic Corridor that will link Bangkok, Thailand with Kunming, China, thereby giving China access to Southeast Asia. And finally, the South-South Economic Corridor, linking Bangkok, Phnom Penh, and Saigon.

The GMS is also currently promoting the development of a regional power grid and electrical trading system in mainland Southeast Asia that will be based largely upon hydroelectric power. This plan envisions using existing dams in China and mainland Southeast Asia in order to supply power to the rest of the region (Jingjai Hanchanlash, Director, Thai Chamber of Commerce. Personal Communication).

Officially known as the “Power Interconnection and Trade in the Greater Mekong Subregion”, this Mekong power grid is a flagship of the ADB’s Greater Mekong Subregion program. In addition to the ADB which is leading this project, the World Bank, the Japan Bank for International Cooperation, and the Association of Southeast Asian Nations (ASEAN) are also involved. This project was started in 1994, when the ADB sponsored a study of the energy resources and possibilities in the region, which was undertaken by the Norconsult hydropower consulting firm in Norway (Wong 2004: 2).

Since 1994, the ADB has continued to organize discussions amongst governmental officials and commissioned further studies on the project. In 2002, they
oversaw the signing of the Inter-Governmental Agreement (IGA) on Regional Power Trade at a GMS summit, which committed all 6 Mekong governments to establishing a regional power market and created a leadership body to coordinate this trade (Butiong 2002). In July of 2003, they released their Master Plan on Power Interconnection and Trade in Greater Mekong Subregion Countries, which examined technological and economic aspects of the power grid. (Wong 2004: 2).

The Asian Development Bank has also released what it feels will be the benefits of their inter-regional power grid. It states that this grid will provide economic and environmental benefits for individual counties and the entire region alike. It claims that this system will lower national investments in power reserves that are necessary to meet peak demands, be a more reliable source of electricity, will lower costs of operation, and will reduce greenhouse gas emissions. Basically, the ADB feels that this system will provide the lowest priced, yet most environmentally friendly source of electricity available (Butiong 2002).

Interestingly, although it has still not been possible to get all Mekong River countries involved in the MRC, both China and Myanmar have been full participants in this power grid plan. The most recent meeting was in fact held in Guangzhou, China in November 3, 2003, where discussions were held on how to accelerate the implementation of the IGA (Asian Development Bank 2003).

Mekong Rapid Blasting

An additional plan for the development of the Mekong River is to use it for navigation between China and Laos in order to further help interconnect mainland
Southeast Asia with China. The original plan included the blasting of rapids and islands within the river to deepen and widen it in order to allow for navigation, and involved the cooperation of China, Thailand, Laos, and Burma to each blast away obstacles in their own sections of the Mekong River in order to allow larger ships to navigate through. Under the Upper Mekong Navigation Improvement Project, the Mekong Commercial Navigation Agreement was signed in the year 2000, and work was begun on the project in 2001. This project was initiated and financed by the Chinese government, and upon completion was planned to be able to allow ships to travel between Yunnan, China and Luang Phrabang in Laos (Wongruang 2004; Bangkok Post 2004; Kyodo News Service 2004; Sakboon 2005; Pinyorat 2004; The Nation 2002; Sukin 2002; Tangwisutijit 1996).

This project planned to remove 100 rocky hazards, including rapids, reefs, and shoals along the river's course in 3 separate phases. Phase One, completed in 2004, has made the river passable for 100-150 ton vessels, by removing 21 reefs, 11 rapids, and 10 scattered reefs. Phase Two planned to remove 51 more rapids and shoals so that vessels up to 300 tons can navigate the river, and Phase Three planned to put a canal into the river in order to make it deep enough to allow 500 ton vessels to pass through (Chaitrong 2002; Sukin 2002; Kyodo News Service 2002; The Nation 2002; Pinyorat 2004; Sakboon 2005; Kyodo News Service 2004; Bangkok Post 2004; Wongruang 2004).

The benefits proposed by the four nations involved in this project include safer transportation, increased tourism, regional trade development, increased commerce and commercial navigation, and year round shipping in the region. However, recent events have stalled the project after the completion of Phase One, to be discussed further below
With the current state of Mekong development, it appears that aside from the Sambor dam possibly planned for 2020, no major dams are being planned for the main stream of the Mekong in the lower basin area in the near future. However, as mentioned above, many projects for its tributaries are underway or being planned.

DAMS IN CHINA

China, in its Yunnan province, on the other hand, has been moving full speed ahead on plans to dam the Mekong and produce hydroelectric power for both domestic use and export. 8 cascade dams were originally planned for the Mekong’s mainstream, although this number was later reduced to 7, including the Manwan dam completed in 1996, the Dachaoshan dam completed in 2001, and the Jinghong, the Xiaowan, the Nuozhadu, the Mengsong, and Gongguoqiao dams (Acker 2001: 227; Chapman and Daming 1996: 1, 3). Construction was begun on the Xiaowan dam in January 2002, and is scheduled for completion in 2012 (Liang 2003). It is planned to be the highest dam in the world at 292 meters, while the Nuozhadu dam is projected to have the largest reservoir in the world at 22.7 billion cubic meters. In terms of power these are also huge projects, especially when one compares them with the ADB plan for Laos in 1995 in which all 15 dams would have produced 4000 megawatts. The Chinese dams in total are projected to produce 15,000 megawatts. Energy-wise, these dams can be separated into 2 groups of 4, with the upstream group to produce power for the growing Kunming region.
of China, and the downstream group to produce power for the Simao and Pu’er regions, with the Jinghong dam (the dam lowest on the river, closest to the Burma and Laos borders) designed to export power to Thailand. And with the advantages of a huge domestic market, one clear single leadership structure, and the entire section of river running through one country with no regional cooperation agreements such as those of the MRC to deal with, it is easy to see why China’s plan has moved forward so quickly compared to those of the Mekong Basin (Gagliardi 2004; Acker 2001: 227-230).

Support and Opposition for the Damming of the Mekong

Along with all of these plans for dams and other development along the Mekong River, has come plenty of controversy. Between the developers who have taken the more optimistic stance as to how such dams and development projects will help to improve the lives and economies of the people and countries of the Mekong, and the social and environmentalist groups who have pointed out potential negative effects of the development and dams on the people and ecology in and around the river, the Mekong situation has in recent years turned into an intense battle. Having taken us through the history of the Mekong and its development, the next section of this chapter will focus on the damming issue, taking a look at both sides of this argument. This section will first examine the Chinese developer’s viewpoints and how they feel the Mekong dams will be beneficial, followed by the perspective of the environmental groups that will point out some of the potential negative environmental effects on the Mekong. These

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6 It must also be noted that many of the sources (including internet sources) from which this information is drawn, whether they be from the pro or con voice, are those from groups who may be somewhat biased, emotional, and less reliable in terms of detached academic fact. These viewpoints therefore are not presented as hard fact, but only as the viewpoints of each side as to where current development on the Mekong may be leading.
environmentalist viewpoints fight for the ecological health of the Mekong, while providing an example of the direction that water and the natural world may be headed as a result of the current mainland Southeast Asian elite’s secular development policies.

In order to give a fair assessment to both sides of this argument, it is first necessary to start with the viewpoints and arguments of those who are building and promoting these dams. Since China is the only country to currently have built and put any Mekong mainstream dams into operation, the viewpoint of its developers is the logical place from which to start. Unfortunately, from my own research results and discussions with other researchers studying this topic, in comparison with the amount information available from the environmentalist perspective it appears that very little information has been released or published which argues China’s viewpoint. Some does exist however, and although sparse in detail and research, the available sources on this topic do outline the basic proposed advantages for such projects.

Support for China’s Dams

Recently, as in other parts of the world, the Chinese government has been focusing its efforts on sustainable development, attempting to reduce its dependence on limited power resources such as coal, gas, and oil. With the rapid growth in population in the country, especially in urban areas, energy consumption has skyrocketed. Therefore, resources such as hydropower have been receiving increased attention, research, and development from the Chinese government in recent years. They have targeted Yunnan province as a vast, yet largely untapped region of many natural resources that could greatly benefit southern China’s growing energy needs, with special
emphasis being placed on the hydroelectric potential of the Mekong River. The
topography and geography of this river are seen as favorable for development, its annual
discharge is seen as reliable, and many of its proposed dams are planned for locations in
the steep-walled sections of the upper river with low population density, therefore
limiting the amount of relocation needing to be done by the Chinese government (Wang

The main priority for building and planning such dams on the Mekong by the
Chinese government is to supply needed power through hydroelectricity. Yunnan
province, through which the Mekong flows, is one of the poorest provinces in China, and
this development is proposed to greatly alleviate poverty for the people of this region
(Kajander 2001: 53; Wang 1996: 241). In addition to helping those in Yunnan province,
this power will also be transmitted to areas in the east of the country where power
shortages exist, such as Shanghai, Guangdong, Jiangsu, and other provinces (People’s
Daily 2002). However, this dam building for hydropower is not only designed to benefit
China, but also its neighboring countries. Thailand is also scheduled to receive exported
power from these projects to meet its own growing needs, beginning in around 2013
(Kajander 2001: 53; People’s Daily 2002). And finally, should the proposed “run-of-the-
river” dams in the most recent Basin Development Plan of the Mekong River
Commission be built, China sees the power to be generated by these smaller dams
increasing exponentially by their larger upstream dams. This, they claim, will be due to
an increased dry season flow in the Mekong from water released from the reservoirs of
the larger dams in order to generate hydropower year round, thereby increasing both the
amount of water running through the “run-of-the-river” dams during the dry season, as
well as their power output and supply to the Mekong Basin power markets during dry season periods of peak demand (Kajander 2001: 54; Chapman and Daming 1996: 22; Wang 1996: 241).

Any water blocked off by the Chinese dams is expected to have very little effect downstream, according to the Chinese government, as studies have shown that in its lower reaches, only 16% of the Mekong's water is from the upper Chinese areas (Kajander 2001: 53). However, the Chinese government does not expect any projected water shortage to be an issue in the long term, as one of the key benefits argued by China is that these dams will actually add to the dry season discharge to balance out any water loss during other times of the year (Chapman and Daming 1996: 22; Wang 1996: 241). The government expects the proposed Xiaowan Power Station on the Xiaowan Dam alone, with its reservoir of 15 billion cubic meters, to increase the dry season flow by 40% (People's Daily 2002).

Conversely, in the wet season, with the region prone to flooding, the Chinese government projects these dams to hold back water and prevent such disasters (People's Daily 2002; Wang: 1996: 241). The Chinese English language newspaper, People's Daily has stated that the Xiaowan Dam alone will reduce the rainy season flow by 17%, while Chapman and Daming have predicted that the total wet season discharge can possibly be reduced by as much as 25%.

One of the plans that has been proposed by different forms of the Mekong River Commission over the years has been the use of the Mekong River water for irrigation of drier and less fertile areas along its banks, for example the northeast of Thailand. So with the addition of this aforementioned increase of dry season water released into the
Mekong by the Chinese dams, the government further argues that this could again open the possibilities for such large-scale irrigation in Thailand, Cambodia, Laos, and Vietnam, as well as for Thailand’s plan to divert water to Bangkok, and use water for residential and industrial purposes in its northeast (Chapman and Daming 1996: 22; Kajander 2001: 54; People’s Daily 2002; Wang 1996: 241).

The final proposed advantages of these dams include silt blocking, river navigation, and prevention of salt water intrusion. The Chinese government expects the Xiaowan to block 35% of the silt in the river, which it claims will allow the river to run cleaner and consequently allow for better agriculture and fishery development (People’s Daily 2002). According to the government, river navigation, including transportation, trade, and tourism, which is often limited and sometimes blocked by shallow water and sand bars during the dry season, will also open up due to increased dry season flow (People’s Daily 2002; Wang 1996: 241). And in the very lowest reaches of the Mekong, in the delta portion of Vietnam where salt water intrusion from the sea has lately become an environmental factor for fresh water fisheries, rice agriculture, etc., this increased flow is also purported by the Chinese government to push out the sea water and lower the salt levels (Chapman and Daming 1996: 22).

But of course not everyone agrees with the sentiments and arguments of the Chinese. Researchers, NGOs, and environmental and human rights groups have all spoken out against what they feel are an imbalance of costs, both environmental and human, over the proposed benefits of these dams.
Opposition to China’s Dams

The first of these costs is due to the fact that the high wall dams the Chinese have built and are continuing to build create very large reservoirs, often stretching several kilometers back and covering vast areas of previously inhabited land in the process. It is the disruption and uprooting of the lives of these affected people that has lent itself to so much controversy. To assess the situation up close, the NGO “Mekong Watch”, part of the International Rivers Network, organized a research trip in August of 2003 to the resettled areas along the Mekong in China near to the completed Manwan and Dachaoshan Dams. Going to the villages themselves, this group was able to record many first hand accounts of the problems the villagers themselves associate with the forced relocation.

In the area of the Manwan Dam, Mekong Watch found that in the Dali, Simao, and Lincang prefectures, 144 villages had been resettled by the dam. This has translated into more than 7,000 people being displaced, most of them reportedly without being consulted beforehand or compensated fairly afterwards for lost land and housing. According to a 51 year old man from one of the resettled villages, “...I didn’t hear anything about being resettled until 1984 when a government official came and held a meeting in our village....we heard only that our resettlement would be temporary....But in the end, it became permanent temporary resettlement.” According to another woman from the same village, “Before we were resettled, in one year we could harvest enough for my family to eat for three years. We got income from selling our surplus crops. After resettlement, we did not get any land, so I cleared my own field and am growing corn and
soybeans. But I can only harvest three month’s worth…..most of the villagers have not been able to find supplementary sources of income.”

Another problem in the area was lack of access to water for agriculture and livelihood. One of the villages visited had been relocated up to higher land two kilometers away and was suffering from water shortage. As one village man stated “….we cannot secure enough water for our daily needs. We knew there was not enough water here even before we moved. If this land did not have such problems, don’t you think other people would have been living here already?”

The Dachaoshan Dam has a reservoir that has flooded 12, 385mu (1mu=0.0667 hectares), and has affected over 6,000 people. And while the Chinese government allocated ten times the money set aside for the Manwan relocation program in order to achieve more satisfactory results, villagers in the area still feel under compensated. Issues over land quality and size, as well as housing and water quality persist. “After resettlement, my field is smaller; I cannot grow enough to feed my family, and life is hard. There are also defects in the house that the government provided us,” complained a 34 year old man of Yi ethnicity. This man further stated that although the government promised land compensation in the new village, the amount of land provided was only a third overall of what they had been told, and his personal plot was one fourth the size of his previous land. In addition, villagers also claimed that the quality of the housing material was poor, with weak foundations, and that due to the low quality of the roofing tile, rain often leaks through. Poor health has also been a problem since the move, attributed by some to water quality. “Our drinking water smells of agricultural chemicals. Our water source is near the fields, so chemicals probably flow right in. In April and May
this year (2003), about 60 to 70% of the villagers suffered from diarrhea. I think it is because of the water,” said one man.

Finally, much conflict has arisen from the splitting up of old villages and incorporating them into new ones, with new villagers having to live alongside the original inhabitants. Great emotional distress has often occurred from this change, and the distance often makes it quite difficult for family members of resettled groups to see each other on a regular basis. It is speculated that all of this stress and resettlement has contributed to the increased crime and lack of security reported in these areas. Yet despite all of these documented problems that have occurred with these two dams, further resettlement is expected for another 32,000 people with the completion of the Xiaowan dam (Higashi 2003).

Another major concern of those opposed to damming the Mekong is the impact of the dams on fish populations. One of the effects environmental groups propose the dams to have on the river is on what is called the “flood pulse”. This refers to the natural cycle of high and low water levels that come each year with the wet and dry seasons in the region and are a major part of the ecosystem. With the rainy season comes floods, which raise water levels in floodplains along the river and up into tributaries each year, bringing sediment which enriches agricultural land and provides the fish with food and nutrients necessary for their survival. These floodplains are used by fish for adult feeding areas, nurseries, and spawning areas, and a majority of the lower Mekong basin’s fish that are caught begin life in the floodplains around the Tonle Sap River, Tonle Sap Lake, Mekong Delta, and surrounding tributaries.
Based on this flood pulse, the fish are also signaled when to migrate and spawn. Large scale migrations occur in the early and late stages of the rainy season, with the fish moving into the floodplains as they develop, and leaving before they dry out. Spawning occurs generally at the beginning of the flood season, so that the young fish can arrive in the floodplains feeding grounds during the peak. This behavior is all predicated on the floods, with the fish able to adapt to timing and size variations year by year, as long as substantial flood patterns do occur (Poulsen Oct. 2003: 1-3). However any reduction or elimination of this annual flooding of the river, such as is being predicted to happen with dams on the Mekong’s upper reaches, is speculated to severely affect downstream fisheries (Roberts 2001: 9).

Another important aspect for the fish populations of the Mekong are deep pools along the river’s course, which act as dry season homes for some fish, permanent homes for others, and links between habitats for migrating fish. When the floodplains recede during the dry season, many of these fish make use of these deep pools during periods of low water. Mekong River Dolphins, a threatened species in the Mekong, also are dependent on these pools as their habitat and feeding grounds, and would likely disappear without them (Poulsen and Valbo-Jorgensen 2001: 1-2). But dams are known to change flow patterns within rivers, which in turn change sediment patterns and fill up such deep pools, a process which has already been noted along dammed tributaries along the Mekong (Poulsen Oct. 2003: 12-13).

These dams may also affect migration patterns for fish of the Mekong, certain species of which are thought to migrate anywhere from 100 to 1000 kilometers along the river. These fish depend on having these long distances to move along, and many such
habitats will be blocked by any dams within their migration area (Poulsen Feb. 2003: 1, 17). In the case of the Pak Moon dam on a tributary in Thailand, built just 3 kilometers from the Mekong, previous fish migrations were blocked. According to reports, of the 265 species of fish in the river before the dam was built, only 96 now remain, and most of these remaining fish having little or no commercial value. With fish catches dropping by 80%, most of the local villagers have now moved to Bangkok to find other work (Moreau and Ernsberger Jr. 2001: 28).

Similar declines in numbers of fish for consumption by populations within the Mekong Basin are of chief concern. When including small-scale production and domestic catches in rice fields and swamps, the estimated amount of fish produced by the river is 1 million tons of fish per year, including 8-10% from aquaculture. This constitutes the main source of animal protein intake in the Mekong Basin, and 80% of animal protein intake in Cambodia alone, to supplement their rice-based diets. Therefore any change in the river’s ecosystem and fish populations could have drastic effects not only on biodiversity, but also on the diets and economy of the people of the region (Jensen 1996: 1; Roberts 2001: 9).

Not only are the dams claimed to alter sediment patterns which will fill up the deep pools as mentioned above, but environmental groups also claim that they block and obstruct this sediment from flowing naturally into lower parts of the river. They consider this sediment flow to be a vital factor in the ecological health of the Mekong, as it carries enriching nutrients downstream. In fact, they estimated that approximately half of the sediment in the Mekong River originates from its upper reaches in China, so that blocking the sediment in this area could have drastic effects. One possible effect would
be that with this reduced silt load, the waters of the Mekong will run much cleaner and
clearer, causing the river to become much more sediment hungry. The waters could then
scour and erode the river bed, causing changes in its course and width, and weakening
supports for buildings, piers, and bridges along its route (International Rivers Network
2002).

Another main effect of this reduced sediment will be on agriculture, as 80% of
rice production in the Mekong Basin is dependent on water, silt, and nutrients from the
annual flooding. With the reduction of the floods as mentioned above, along with
reduction in silt, the soils in these rice growing areas would lose much of their fertility.
Retaining this fertility, then, would only be possible by the increased use of artificial
fertilizers which are already in use, resulting in polluted waters and poisoned fish
(International Rivers Network 2002; Werry 1999). Aside from rice agriculture, what is
known as riverbank gardening could also be negatively impacted by loss of silt, the dams,
and their water release schedules. This riverbank gardening has been practiced for
generations, and involves the farming of the banks and islands of the river during the dry
season, which produces a large number of cash and subsistence crops for those living
along the river. How much land is available for this type of gardening depends greatly on
how much water is flowing down the river, as well as the amount of silt deposited for
fertility. Should the river flows be more equalized during dry and wet seasons, then such
available land could be lost, and a major source of income and sustenance could be lost
as well (Roberts 2001: 10).

Flooding and droughts are further problems that may be enhanced by the presence
of dams on the Mekong. According to Dr. Tyson Roberts, an ichthyologist for the
Smithsonian Tropical Research Institute, while the dams can certainly provide flood relief for the lower countries, the conditions under which this can happen must be ideal. Should the floods be of a natural and normal yearly size, or even slightly larger, then the dams could certainly control them and provide disaster relief in lower sections of the river. But it must be remembered that these dams and their reservoirs are constructed mainly for the production of electricity, so that during the rainy season the reservoirs are kept close to full in order to store water for dry season electricity production when there is less natural water flow. Therefore, if a larger than expected flood occurs in the upper reaches of the river, then a great deal of water must be released from the dams in order to make room. Such an event is suspected to have occurred on the Mekong in September and October of 2000 when floods in Cambodia and throughout the Mekong Delta in Vietnam were larger than usual. While no evidence exists, the opening of the gates of the Manwan dam are suspected to be partially responsible. A similar problem occurred with Vietnam’s Yali Falls dam on the Se San River. Both accidental and unannounced water releases during and after its construction killed 39 Cambodians, most of them in one incident in February of 2000, an event that Vietnamese official have since apologized for. But the real fear is of the larger dams such as the Xiaowan and Nuozhadu which will hold five plus years of water in their larger reservoirs, and could cause catastrophic problems should too big a flood occur (Roberts 2001: 4-5; Wain 2004a: 51).

On the other end of the scale, drought conditions can also be brought on by the presence of dams on a river. It took the Chinese three years to fully fill the reservoir of the Manwan dam, from 1993 to 1996, and during this time river levels were much lower than normal. Though not devastating during these years, the lower river levels during the
filling of larger reservoirs could seriously affect agriculture, fisheries, and humans throughout the Mekong Basin (Roberts 2001: 14). It is also feared that during times of serious drought in the upper reaches of the Mekong, China could potentially close off the dams in order to save water, drastically reducing stream levels in lower sections of the river (Moreau and Ernsberger Jr. 2001). The closure of the dams in fact has already occurred. Soon after the agreement to form the MRC in 1995, dignitaries from the four countries decided to take a celebratory trip across the Mekong from Thailand to Laos. However this trip had to be aborted as China had recently closed off the upper Mekong in order to fill its Manwan dam reservoir, and the river levels were too low for boats to get across (The Economist 1995). In the first half of 2004, China often shut off the water of the Mekong with their two completed dams in order to allow for dyke construction. Consequently, the river levels dropped to only 45 centimeters in Chiang Khong, Thailand, forcing Laotian tour operators to cancel 10 river tours in the month of March alone (Wain 2004a: 50). Such incidents are precisely what concern the lower Mekong countries when thinking of future large dam projects.

Looking at all of these possible environmental effects, two areas are specifically mentioned by groups opposed to the damming of the Mekong as area that they believe will be the most greatly effected. These are the Tonle Sap River and Lake in Cambodia, and the Mekong Delta area in southern Vietnam.

The Tonle Sap is extremely important to the Mekong River system, as well as to the Cambodian economy. As discussed in Chapter One, during the dry season the lake is 3,000 square kilometers in size, and flows into the Mekong. The rainy season, however, changes things considerably, with the peak flow of the Mekong beginning in May and
maximizing in September or October, flowing past Phnom Penh in Cambodia at an average of 45,000 cubic meters per second. With this heavy flow, the Mekong actually flows hard enough to reverse the current of the Tonle Sap River, causing it to flow up into the lake, which at peak season grows to a size of over 10,000 square kilometers (Kite 1999-2000: 45).

During this peak flow the Tonle Sap receives many nutrients from the Mekong which greatly raises the productivity of the lake and the surrounding wetlands it creates. Home to one of the most productive ecosystems in the world, the Tonle Sap supports 60-70% of the inland fisheries in Cambodia, and typically harvests 100,000 tons of fish per year. This fish is second only to rice in terms of importance in diet, and provides, as mentioned earlier, 80% of the population’s animal protein (Kite 1999-2000: 45). Studies have shown that the Tonle Sap and surrounding floodplains retain 80% of the sediment that flows in during the wet season from the Mekong and tributaries, 70% of this being from the Mekong itself. This brings in essential nutrients that supply the food web, with greater floods bringing greater sediment and leading to more food and more fish. Environmental groups fear that any dams or reservoirs on the Mekong will trap sediments and nutrients and reduce the fertility of the Tonle Sap, affecting its ecosystems and productivity, and reducing a staple food source for surrounding populations (Sarkkula, J., et. al. 2003).

The Mekong Delta is Vietnam’s largest agricultural area, and home to 16 million people. It is Vietnam’s main rice growing area, known as its rice bowl, and produces harvests 2-3 times per year with typically high yields. Although it makes up less than 10% of Vietnam’s land mass, the Mekong Delta produces 60% of its rice, and makes
Vietnam the second largest exporter of rice in the world after the United States (Werry 1999). In addition, 44% of Vietnam’s fishery production and 75% of its animal protein come from this delta (Sneddon and Thanh Binh 2001: 250-251). Annual floods in the delta bring in an estimated 79 million tons of silt which balance the ecosystem, provide nutrients for fish populations, and provide fertility for growing rice, making such floods an extremely important and necessary part of the yearly cycle.

Rice strains in flooded areas have even adapted over time in order to accommodate these floods. Known as “floating rice,” this rice grows very long stalks as the river’s level raises in order to keep above the water level, and then lies over once the water recedes, and is ready to harvest (Fox 2000: 89-90). Vietnam’s fear with the damming of the Mekong is that the dams will ruin this important area by reducing the flow and annual flood levels of the Mekong River (Tangwisutijit 1996).

A related problem is that of salinity intrusion into the Mekong Delta. During the dry season, this salt water extends up to 70 kilometers inland in the delta. This can affect rice, which is very salt sensitive, and also affect drinking water for the local population. In order to keep these salinity levels as low as possible, fresh water from the Mekong must be flowing at adequate levels in order to push this salt water out of the delta and keep it at bay, especially during the dry season. What worries people in Vietnam is what will happen during a drought or low flow year if China decides to hold back water in order to keep its reservoirs full and produce electricity, as the effects could be drastic on the ecosystems, fisheries, and agriculture of the Mekong Delta which the people are so dependent on (Sneddon and Thanh Binh 2001: 247-249).
CURRENT STATE OF THE MEKONG

Due to all of these predictions and statements from both sides, it is necessary to take a look at current reports on the state of the Mekong to see what has actually occurred to this point. Reports of both low water levels and decreasing fish catches on the Mekong suggest that problems with the river do exist.

Low Water Levels

On March 26, 2004, the Mekong River Commission released a report on the current state of the Mekong, stating that the flow conditions are the lowest in the past decade. Daily measurements have been taken at Chiang Saen, Thailand since 1960, and only 12% of all of these daily reports are equal to or lower than those reported for March, 2004. Lower down the river, the situation gets worse, with only 5% of the 16,000 daily reports they have compiled being equal to or lower than March, 2004. The Mekong River Commission report states that this is due to droughts caused by a drier wet season at the end of 2003, with very low rain fall levels in the first 2 months of the wet season, especially November. The first few months of 2004 were also very dry.

The report states that the dams in China are not to blame, as if this were the case, then the flow levels in Chiang Saen in Northern Thailand could be expected to be lower than in areas in lower sections of the river that are fed by new tributaries, due to water blockage from the dams. In addition, they expect the dams to increase rather than reduce dry season flows. With the relatively small size of the dams already built, the MRC does not expect these dams to have a large effect on the flow of the Mekong, although they mention that the larger planned dams could indeed have a greater impact.
However, some effect has been noted since 1993 when power generation commenced, with small changes in river levels throughout the year at Chiang Saen, only 200 kilometers from the Manwan dam. The report does state that this is likely to have some impact on the fish populations, although by the time the Mekong reaches Luang Phrabang in Laos, the effects are no longer detectable. In addition, decreased sediment in the river after the operation of the first dam was also noted in the report. The average sediment level in river samples dropped by 50% in 1992 when the dam first closed, and dropped by 30% further down in Pakse, Laos (Mekong River Commission Report 2004).

Yet other reports do blame the dams for lower river levels. According to an AFX news report on April 1, 2004, Sermchai Kittiratanapaiboon, the chairman of the chamber of commerce in Chiang Rai, Thailand, stated that shipping between Thailand and China had stopped due to low river levels. He stated that these levels in many areas are between 90 centimeters and 1 meter, although at least 1.5 meters are needed for transport, and attributed this to the dams in China, which he says the Chinese open only when they themselves are running ships down the river, but are closing them again afterwards. The article goes on to quote the Mekong River Commission’s senior environmental specialist Ian Campbell, who agrees that such fluctuations are due to the dams, as these fluctuations have been recorded since 1992 when the dam first was closed. According to Campbell, the Chinese let more water out when needing more power, and close it off at other times (Konglang 2004; Osborne 2004: vii).

In March of 2004, Mekong River Commission official Dr. Robyn Johnston reported that river levels in Vientiane, Laos were the lowest ever recorded, while other locations along the river were at 20 year lows. And in April 2004, reports were made of
stranded boats in the Mekong near Chiang Saen, Thailand due to low water levels (Osborne 2004, viii).

**Decreasing Fish Catches**

As a result of these low water levels, fishing on the Mekong has been negatively affected. Decreasing fish catches have been recorded in the Mekong over the past few years. The Cambodian Daily reported on March 1, 2004, that Cambodian fishing officials were predicting 20% lower catches for that year than for the previous year's 308,750 tons, due to lower water in the Mekong. This they claim to be due to the reduced number of fish larvae that will survive to adulthood. Many local fishermen in Cambodia were also reported to have noticed the lower levels, most saying that that year's catches have been the lowest they can ever remember (Rouen and Solana 2004). In March of 2004, the Mekong River Commission reported that fish catches in the Tonle Sap had dropped almost 50% from the previous year, following 15% drops in both 2002 and 2001 (Osborne 2004: viii).

**BLASTING OF THE MEKONG RAPIDS**

The blasting of the rapids along the Mekong has also created great controversy, with two sides weighing in on the pros and cons of the project. Several local villagers, environmental groups, and more recently the Thai government, have voiced concerns over the project’s negative ecological, human, and social impacts. These groups argue that the loss of obstacles in the river will change the ecosystem, destroy fish habitats, lead
to the extinction of several wildlife species, including the endangered giant catfish and Mekong river dolphin, and destroy local fisheries. Without these obstacles, concerned groups claim that the river will flow at a faster rate, which will consequently erode river banks and damage riverside plantations. And once the larger ships begin to travel along the route, the river will see an increase in pollution. With fish spawning grounds destroyed by the loss of these rapids, there is also concern that a major food source for local and regional consumption may be greatly reduced (Chaitrong 2002; Sukin 2002; Kyodo News Service 2002; The Nation 2002; Pinyorat 2004; South China Morning Post 2003; Sakboon 2004; Kyodo News Service 2004; Financial Times Information 2004; Bangkok Post 2004; Channel News Asia 2005). In addition, the Thai Defense Ministry has also gotten involved, with their own concerns that the change in water flow may alter the actual course of the river, thereby shifting the border between Thailand and Laos, and creating further problems in a historically tense border area (Sakboon 2004; Financial Times Information 2004; Bangkok Post 2004; The Nation 2002).

The Chinese government has stated that only the rapids and shoals that block navigation will be removed, and so therefore they do not feel that any negative impact on the environment, people, or national boundaries will actually occur (The Nation 2002).

In April of 2003, Thailand stopped the blasting on its section of the Mekong over concerns regarding the border issue with Laos (Sakboon 2004). By June of that year, China itself agreed to discontinue the blasting of rapids outside of its own borders after the completion of Phase One, due to the concerns from local, environmental, and governmental groups in the affected region (The Nation 2002). However they later announced that they are continuing with blasting plans on an additional 80 kilometers of
rapids within their own territory, in order to allow ships up to 400 tons to navigate these sections of river (Bangkok Post 2004). And in March of 2005, it was reported that further work by Laos along the Thai/Laos border was officially halted in order to give concerned agencies time to conduct full environmental assessment studies (Channel News Asia 2005). Encouragingly, environmental and social concerns seem to have at least temporarily slowed or stopped the progress of the Upper Mekong Navigation Improvement Project.

SPIRITUALITY OF WATER AND THE NATURAL WORLD IN MODERN-DAY MAINLAND SOUTHEAST ASIA

From the above examples of the development plans for the Mekong, including dams and rapid blasting, it is clear that the leaders and developers of mainland Southeast Asia currently view natural resources such as water as a secular commodity to be exploited for development purposes. These secular attitudes towards the natural world have also been passed on to certain sections of the common population through education, as was shown in Chapter Two, and can be clearly seen in modern attitudes and approaches towards some of the spiritual water festivals discussed in Chapter One. However, the spiritual element of these water festivals is also still prevalent, with villagers continuing to worship the water spirits of the Mekong, and Buddhist groups working to save the natural environment by re-emphasizing the spiritual importance of the natural world. While perhaps diluted, the spiritual beliefs of the peoples of mainland Southeast Asia towards water and the natural world are far from disappearing.
Water Festivals in Modern-Day Mainland Southeast Asia

The modern-day Loy Krathong festival in Thailand in many ways seems to have lost much of its spiritual significance. From current practice, it could be assumed that the spiritual origins of the festival have been largely forgotten. As 21 year old Thai university student Natpapat Saengnaphawan, born and raised in Chiang Mai, Thailand, and currently studying at Assumption University in Bangkok, related to me after reading the Loy Krathong section in Chapter One, "[This is] something that...haven't heard before!! Such as the [origin] of Loy Krathong Day, I think not only me but most of Thai people also don't know about this, we just know that it's a traditional festival. Yea we will place the money in Krathong but today it's not like that. In the river, Krathong sellers wait to keep our Krathong for selling again (we buy Krathong more than do it by our self), so now we will place only an incense and candle lit.....and flowers (use colorful flower). Everything is changed now. I believe that even my parents they both also don't know about the [origin] of Loy Krathong day. Most of Thai people know only the purpose of this festival" (Saengnaphawan, personal communication).

The construction of the Krathong further reveals a lack of understanding or concern for this festival's spiritual origins. Modern technology has affected the construction of the Krathong, leading to environmental hazards. Rather than using banana leaves and other natural, biodegradable products as in the past, many people now use the easier, better floating, more reliable Styrofoam material to construct their Krathong. These days, on the morning after the celebration, riverbanks, canal shores, park ponds, and the mouth of the Chao Phraya River, etc. are all completely littered with Styrofoam Krathong (D'Silva 1994: 59). This is interestingly symbolic of the move by certain
sections of the population away from the spiritual focus of water, towards the more secular uses. A ceremony supposedly designed to offer apologies to the goddess of water for all the damage done during the year, has now evolved into a festival in which many of the participants are concerned more with the aesthetic beauty and flotation of their Krathong, rather than the original spiritual symbolism of the festival.

The Thai Songkhran New Year's festival, which traditionally included the pouring of water gently over the hands of the elderly and respected in order to seek their blessing, now has grown to include the much wilder and even dangerous practice of an all-out nation-wide water fight. Although this water fight, if traced back to its spiritual roots, could be considered as a mass baptism, it is highly unlikely that the spiritual origins of the festival are taken into consideration to any significant degree by modern water-throwers. Excessive drinking of alcohol and dangerous water splashing are now the norm across Thailand during the Songkhran festival, which has led to high numbers of traffic fatalities in recent years. During the 10 day holiday period in 2005, from April 8-17, 522 deaths and 16,395 injuries due to road accidents occurred. 85% of these deaths involved motorcycles, as people often crowd into the back of pick-up trucks and drunkenly throw buckets of ice-cold water on motorcycle drivers and pedestrians along the streets (Bangkok Post 2005).

Tourists, including this author in 1998, have also begun to travel to Thailand to take part in these festivities. This type of public water fight is very attractive for foreigners, most of whom have no knowledge of the spiritual origins or symbolism of the Songkran festival. This foreign presence seems to have added to the secular, water-fight approach to the festival, as the tourist areas in Bangkok and Chiang Mai are now some of
the wildest and most famous Songkhran celebration sites in the country. Both foreigners and Thais are now commonly seen carrying all sorts of modern fancy water guns and toys in these areas in order to enhance their water fighting abilities. Many Thai people, especially the elderly who remember Songkhran in previous times, complain that the water festivities have recently gotten out of hand.

This author personally experienced Songkhran in Cambodia as well in 2003. Although not to the intensity level of the Thai festival, the Cambodian Songkhran still very much involves large water fights and much drinking, suggesting that this new way of celebrating is not only confined to Thailand, but occurs in Songkhran festivals across mainland Southeast Asia. As discussed in Chapter One, the Songkhran festival in Jinghong City in Yunnan province also involves a great deal of water splashing, although in the countryside, the practice of gentle pouring of water as a blessing is more common. These actions suggest that Songkhran has become much more of a secular, fun-loving water party to large sections of the population, especially in the cities that have become less traditional as they have been more exposed to foreign influences, rather than a spiritual water festival.

However, despite these modern forms of celebration, it cannot be said that modern secular ideas have completely removed the spiritual element from the water festivals in mainland Southeast Asia. Many of the examples seen in Chapter One point to the continuing existence and importance of the spiritual aspects of these festivals. The Krathong in the Loy Krathong festival is floated for wish fulfillment, showing some level of spiritual connection to water of the people who are taking part in this festival. In the Songkhran festival, water continues to be poured over the hands of elders, parents,
monks, and the urns of the ancestors, as well as over Buddha images, and children continue to bathe their parents, in order to cleanse and ask for blessings for the coming year. In addition, the belief that the throwing of water will bring rains continues to exist amongst much of the rural agricultural population, and rain-evoking rituals involving cats and clay figures still occur in the villages when lack of rains threaten to harm crops.

Finally, the rockets fired off during the sky rocket festival continue to display the image of the Naga, the mythical serpent of the waters, which was shown in Chapter One to be connected to rainfall in traditional spiritual beliefs, and in rural agricultural areas these rockets are still considered to be important to remind the gods to bring the rains.

In addition to the spiritual aspects of the water festivals, local fisherman also continue to respect and worship the spiritual power of water, worshiping the water spirits of the Mekong River. A ritual is carried out in both Thailand and Laos before the start of the fishing season for the giant Mekong catfish in mid-April called “liang luang.” Using a bamboo shrine, incense, and candles, as well as offerings such as cooked chicken, beef, and a pig’s head, fishermen play traditional music, chant, and shout in order to invoke the spirits of the river. Because they believe that the giant Mekong catfish are protected by the spirits, the fishermen ask for the permission of the spirits to go fishing for the catfish, ask them to bless their boats, and seek their assistance obtaining a good catch (Wongruang 2002; Southeast Asia Rivers Network 2004). From these examples, it is clear that although the process of secularization and Western scientific ideas have had their effects, beliefs in the spiritual aspects of water have retained their importance amongst the common population as well.
Socially Engaged Buddhism

More evidence of the continued spiritual importance of the natural world, including water, amongst the peoples of mainland Southeast Asia comes from what is known as “socially engaged Buddhism,” a term coined by the Vietnamese Buddhist monk Thich Nhat Hanh in the 1950’s to describe socially active Buddhists who work towards peace and social and environmental awareness. By 1989, this had become a worldwide social movement, with the International Network of Engaged Buddhists being formed in Bangkok that year to coordinate these various groups around the world. It is the belief of the monks involved in this socially engaged Buddhism, that the current environmental protection movement seeks solutions to environmental problems using the same flawed framework that created the problems in the first place. This framework includes the necessary elements of governmental, legal, scientific, technological and educational efforts, yet leaves out the moral and religious values of the culture which can be used to restore the spiritual consciousness of the people towards the natural environment. This spiritual consciousness and connection towards the natural world are what these Buddhists feel is the foundation of true environmental preservation.

In Thailand, socially engaged Buddhist monks feel that the modernization that has taken place since WWII has weakened the religion and culture of the country, which in turn has allowed the people to become more greedy and selfish, and to no longer consider the long term consequences of their actions. They feel that Thai people have come to seek happiness in the materialistic world of development, rather than seeking spiritual happiness. Consequently, people now see forests and other natural environments as uncivilized and the opposite of development. Rather than peaceful places to seek spiritual
contentment, these areas are now looked at as sources of money through the extraction of resources such as logs for profit.

Socially engaged Buddhists believe that Buddhism is the perfect tool to help to restore the natural environment. This is because one of Buddhism’s fundamental teachings is that humanity is an integral part of nature. Therefore, when nature is abused, human beings themselves suffer as well. One of the key environmental issues that these Buddhists have focused on is the deforestation that Thailand has faced in recent years. This issue is especially pertinent to Buddhist teachings, as many of the stories of the birth, enlightenment, teachings, life, and death of the historical Buddha are associated with the forest and trees. Buddhists are instructed to respect trees as sources of food, shade, and protection, and are forbidden to cut down trees. Forest monks have therefore been involved in forest conservation, with the idea that if they respect the forest, and Thai citizens respect Buddhist monks, then this will lead to the Thai citizens respecting and preserving these trees themselves. Forest regeneration projects have been undertaken, and in recent years many monks have taken up the practice of ordaining the actual trees themselves as Buddhist monks, wrapping them in the saffron robes worn by a monk. This is in order to discourage loggers from “killing a monk,” considered the worst crime a Buddhist can commit (Sponsel and Natadecha-Sponsel 1995: 32-38).

Socially engaged Buddhists have focused their attention on various environmental issues throughout Thailand which they feel are violating natural environment which they hold to be spiritually important. One such issue was the Yadana Gas Project, a gas pipeline that has been built to extract gas from a field in the Andaman Sea off of the southern coast of Burma, and transport it approximately 700 kilometers through both
Burmese and Thai forested areas, for sale to Thailand. Concerned with the destruction of the pristine and ecologically vulnerable forests that this pipeline would damage, as well as the elephant populations in the region that would be adversely affected, Thai socially engaged Buddhist groups attempted to block the construction of this pipeline by staging a 72 day protest and ordaining trees at the pipeline site, culminating in the arrest of renowned scholar and socially engaged Buddhist Sulak Sivaraksa in March of 1998. These groups also made efforts to begin a long-term strategy to educate Thai citizens on how blind consumerism opposed basic Buddhist teachings on moderation, and point out how projects such as the pipeline were damaging to their Buddhist heritage (Simsaon 1999: 505-508).

Another group of socially engaged Buddhists in Cambodia have organized an annual peace walk called the Dhammayietra, or “pilgrimage of truth,” led by the Buddhist monk Maha Ghosananda. This walk uses the spiritual principles of Buddhism to make statements about current issues in Cambodia such as repatriation, elections, the Khmer Rouge, land mine issues, and illegal logging and deforestation. The Dhammayietra was first begun in 1992, in the refugee camps on the Thai border. Despite resistance from the UN officials and the Thai and Cambodian governments, around 350 refugees returned to Cambodia on foot, spreading the message that peace would return to Cambodia “step by step.” By the time this walk reached Phnom Penh, the number of participants had reached 1000. In the years since, the Dhammayietra is reported to have revived an enthusiasm for religious relevance in Cambodia, especially amongst the younger generation (Poethig 2002: 19-28).
Inspired by the Maha Ghosananda and the Dhammayietra of Cambodia, in 1995 a group of socially engaged Buddhists in Thailand began an annual Dhammayietra walk of their own for the revival of Songkhla Lake and its basin in southern Thailand. Again, this walk was designed to combine the elements of spiritual practice and social transformation. Songkhla Lake has traditionally been a unique site of ecological diversity, with around 700 marine species, and hundreds of migratory birds and water fowl dependent on it. However, rubber plantations, the city of Hat Yai, and shrimp farming, all in the near vicinity, have created environmental problems that include polluting the water with waste, and releasing chemical toxins into the lake. These issues have in part led to a decline in the diversity of fish populations and other wildlife species, lowered the water levels of the lake, and have affected the ability of local communities to make use of the lake for their livelihood. Observing these problems, local Buddhist monks decided to take a leading role in the preservation of the lake. Their goals were to foster cooperation amongst the various groups involved in the project, and to apply religious principles to the environmental and social problems on the lake. The Dhammayietra walk was created in order to help achieve these goals. The various environmental groups joined in the walk together, silence was kept during the walks in order to encourage meditative reflection on personal, social, and environmental issues, prayers were read by the monks before the start of the walk to affirm the solidarity of all beings, and spiritual rituals were led by the monks aiming to prolong the life of the lake (Mayer 1998: 19-23).

The above examples clearly show that despite the secular attitudes towards the water, the natural world, and development that is prevalent amongst the elite and certain
sections of the common population of mainland Southeast Asia, a spiritual connection to
the natural world is also still evident amongst the common peoples of the region.
Spiritual elements of the water festivals remain, village beliefs in water spirits still exist,
and a spiritual response of sorts to the secular developmental mentality of the elite has
been started by the socially engaged Buddhism groups across the region. Socially
engaged Buddhism is making efforts to re-inject the spiritual perspective back into what
has often been a secular debate over the fate of the natural environment, including water,
in mainland Southeast Asia, raising the awareness that the natural environment has a
spiritual essence of its own, and is spiritually beneficial to mankind.

The biggest difficulty faced by socially engaged Buddhists and environmental
activists who fight for the preservation of waterways and the natural world, from either a
secular environmental perspective or a spiritual Buddhist perspective, is the fact that in
the current power structure both groups are marginalized. Despite their actions that slow
the actions of the developers, raise concerns over the current environmental state of the
natural world, or raise the spiritual consciousness of the local people towards nature,
neither group has a great deal of political decision making power that can stop the
progress of the governments and developers who are interested mainly in using natural
resources as commodities to further their development projects. This provides an
interesting contrast to pre-colonial times when both the kings who held the power and the
common peoples worshiped and respected the spiritual essence of the natural world. In
present times, however, this spiritual connection to the natural world is found mainly in
the politically marginalized common peoples, while those in power push forward with
purely secular development plans that heavily exploit the natural world that many others hold as sacred.

CONCLUSION

The construction of dams and blasting of rapids along the Mekong for the purposes of development and navigation serve as perfect examples of just how the concept of water has changed in mainland Southeast Asia since colonial times. In pre-colonial times, water was viewed by the elite and peoples alike as a resource with strong a spiritual element. The mainland Southeast Asian peoples saw the continued rainfall and availability of water as dependent on the worship and respect of water spirits, gods, and goddesses, etc. Water was also used for economic purposes, but as no distinction between the economic and spiritual worlds existed in the pre-colonial period, economic considerations were always balanced with spiritual considerations, so that even when water was exploited and used for development purposes, it was done so in a way that still honored its spiritual aspects. In addition, the kings of this region were considered to be divine, so that the mainland Southeast Asian peoples viewed any economic manipulations of the natural world by the royalty in pre-colonial times, including extensive water projects, as works that displayed and legitimized the spiritual power of the kings.

When the West arrived and colonized mainland Southeast Asia, Westerners brought with them their ideas from the Industrial Revolution whereby natural resources were viewed solely as commodities, and proceeded to transfer these ideas to mainland Southeast Asia via the implementation of an export based economy and plantations and mining projects that sought to exploit the local resources for profit. The mainland
Southeast Asian nations eventually gained their independence from these colonial powers after World War II, however this approach towards natural resources did not leave with the colonial powers. Nation-states emerged based upon the borders that the colonial powers had drawn, borders which had helped to instill the concept of the direct personal ownership of land and all of the resources that fell within its boundaries. Natural resources continued to be commodified and exploited by each nation for export and profit, in order to develop and modernize in an attempt to catch up with the West.

In addition, the scientific and secular views of the natural world held by the West were also adopted by the elite of mainland Southeast Asia. The idea of a separation between the natural world that was governed by secular scientific principles, and the spiritual world which was connected only to other-worldly and moral issues, began to take hold amongst the elite, and was eventually transmitted to certain sections of the common population via means such as education, as clearly demonstrated by the secular approaches to modern day water festivals.

These new ideas and concepts introduced by the colonialists allowed the shift in approach to take place that has opened the door for the current development projects on the Mekong River. Water is now seen purely as an economic commodity by the governments and developers of the mainland Southeast Asia region (including Yunnan), with those in power viewing the exploitation of water and the natural world as an expression of their purely secular developmental power, rather than an extension of their spiritual power. A spiritual element no longer exists amongst the elite that must be taken into consideration or respected, which allows water to be used solely as a tool to aid the
desired development and progress in the region, despite concerns over the environmental, human, and spiritual costs.

The clearest physical example of this shift in approach, are the dams currently in use and under construction on the Mekong in China. Consequently, the Chinese government is getting a majority of the negative press for the problems associated with the exploitation of the Mekong. It is important, however, not to lose sight of the fact that it is not only the Chinese government that is interested in exploiting the Mekong. The governments of lower Mekong countries are equally keen to make use of the Mekong to help develop their countries. This was the original purpose for the formation of the Mekong Committee. The main reason that these lower countries are so interested in China joining the MRC, is that they want to make sure that the actions undertaken by China to facilitate its own development do not harm their chances to facilitate their own development. Thailand was the driving force behind the rule changes in the MRC so that the member countries are no longer required to get a unanimous vote when undertaking development plans on the Mekong. A major reason for Thailand pushing for this change was to allow itself to be able to implement water diversion schemes of its own to divert water in order to irrigate its dry northeastern region, as well as to increase the flow of the Chao Phraya River into Bangkok. These schemes, similar to what China is accused of, would lower the water levels of the Mekong downstream and harm the lower Mekong countries. The lower Mekong countries of Laos, Cambodia, and Vietnam are also opposed to any measures that would negatively affect their livelihoods. Although these development plans may negatively affect Cambodia’s large scale fishing industry in its Tonle Sap, Cambodia currently has plans for 4 dams on a Mekong tributary of its own.
that will benefit itself economically, but lead to further deterioration of the Mekong. Vietnam attributes much of its development to the rice surplus it has been able to export from the Mekong Delta, an area extremely dependent on the waters of the Mekong, and accuses China's dams on the Mekong of negatively affecting this area. However Vietnam has already dammed Mekong tributaries within its borders for economic purposes, similar to what China has done, despite the fact that these dams may contribute to further complications in the Mekong Delta, and Laos has done the same.

In addition, all 6 nations in the region have willingly signed on with the GMS Power Interconnection and Trade group, whose plans for a regional power grid will incorporate China's dams and encourage them to continue to produce hydroelectric power for themselves and the rest of the region. Looking ahead to the economic and developmental benefits of the interconnection of the Mekong region, these countries have put these interests ahead of the ecology or people of the Mekong River.

And finally, Burma, Thailand, and Laos all willingly joined China in the project to blast some of the rapids and obstructions out of the Mekong in order to better facilitate navigation for the purpose of trade, shipping, and tourism, again putting development ahead of ecology. Although China often gets most of the negative press, it appears that ultimately each one of the 6 nations on the Mekong is concerned with the development of itself and the region first, and any negative environmental or human effects on the Mekong and its people second.

The main fight against this development on the Mekong these days comes from secular NGOs and environmental groups looking to save the natural environment of mainland Southeast Asia. These groups have pointed out the potential negative ecological
effects of China’s dams on the Mekong River. The predictions and concerns they are
voicing provide us with the potential environmental effects of the elite’s transformation
from sacred to secular on the Mekong River. And while the information provided by
NGO’s and environmental groups dealing with the environmental and human costs of
China’s dams cannot be considered as hard scientific evidence, the current state of the
Mekong, with its low water levels and declining fish catches, suggests that something is
awry. Published concerns from the Mekong River Commission itself linking lower
sediment levels and fish populations with the dams, and voicing fears of future lower
water levels as larger dams and reservoirs are built, do add further creditability to the
these arguments.

However, despite the secular approach to the natural world that has been adopted
by the elite and certain sections of the common peoples of mainland Southeast Asia, the
secular push for development by the mainland Southeast Asian governments, and the
secular response put forth by environmental groups, amongst the common peoples, the
respect for the spiritual nature of water and the natural environment still exists as well.
The water festivals discussed in Chapter One still retain many of their spiritual traditions,
respect and worship for the water spirits in the Mekong by local villagers still occurs, and
Buddhist sects have arisen that are returning the focus to the spiritual aspects of nature in
order to try to save mainland Southeast Asia’s natural resources. Yet although the people
and groups that continue to believe in the importance of spiritual beliefs and
environmental consciousness towards water and the natural environment still exist, and
are making a push for the preservation of the earth’s natural resources, these groups
remain marginalized in society and hold little political or decision making power, as
opposed to pre-colonial times when the spiritual connection to the natural world was held as important to both the elite and the common peoples of mainland Southeast Asia. Therefore, the question that remains is, with the loss of the spiritual focus on water and the natural world by governments and developers in mainland Southeast Asia who hold the power, will the Mekong survive? Its only hope seems to be in the continued efforts of organizations such as the secular environmental groups and the spiritual Buddhist groups who are working to raise both the ecological and spiritual consciousness of the world towards environmental issues. Whether or not these efforts will be enough to affect the actions of the elite who currently hold much of the decision making power remains to be seen.
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