


Fall 2012

Tujiin Nars: A Story of the Forest

Julia Bowman
SIT Study Abroad

Follow this and additional works at: https://digitalcollections.sit.edu/isp_collection

 Part of the [Environmental Health and Protection Commons](#), [Environmental Indicators and Impact Assessment Commons](#), [Natural Resources and Conservation Commons](#), [Natural Resources Management and Policy Commons](#), and the [Sustainability Commons](#)

Recommended Citation

Bowman, Julia, "Tujiin Nars: A Story of the Forest" (2012). *Independent Study Project (ISP) Collection*. 1453.
https://digitalcollections.sit.edu/isp_collection/1453

This Unpublished Paper is brought to you for free and open access by the SIT Study Abroad at SIT Digital Collections. It has been accepted for inclusion in Independent Study Project (ISP) Collection by an authorized administrator of SIT Digital Collections. For more information, please contact digitalcollections@sit.edu.

Tujiin Nars: A Story of the Forest

Julia Bowman

Academic Advisor: Ulzijargal Sanjaasuren

SIT Study Abroad Mongolia: Fall 2012

Contents

| | |
|---|----|
| Acknowledgements..... | 3 |
| Abstract..... | 4 |
| Terms and Definitions..... | 5 |
| Introduction..... | 6 |
| Part I: General Mongolian Forestry..... | 9 |
| Part II: History of the Trees | |
| Soviet Period: Pre-1991..... | 12 |
| Democracy: 1991-2008..... | 14 |
| Part III: Tujiin Nars..... | 19 |
| Part IV: The Five Factors..... | 25 |
| Conclusion..... | 41 |
| Bibliography..... | 44 |

My deep thanks to the people of Selenge Aimag, Sukhbaatar City, and Tujiin Nars for their kindness and generosity, Choka for her excellent translations and insights into Mongolian culture, Ms. Tsetsentsolmon for her work as my advisor, the SIT staff for making my life a little easier even when it made theirs more difficult, and my classmates for sticking it through.

Abstract:

This paper uses the northern Mongolian pine tree forest called Tujiin Nars as a case study to examine forestry and reforestation projects in Mongolia. It outlines the general history of Mongolian forests from socialism to present day, looking specifically at Tujiin Nars. It goes on to identify and examine the five most important factors in the successful reforestation of Tujiin Nars: a stronger economy in Selenge Aimag, committed civil servants, forest policy with harsher penalties for illegal loggers, government support, and local and global environmental awareness trends.

Mongolian Terms and Definitions:

Aimag: Largest sub-national administrative unit of Mongolia

Afforestation: Establishment of forest through planting and/or deliberate seeding on land that, until then, was not classified as forest. (Dorjsuren 9)

case study: an intensive analysis of an individual unit (as a person or community) stressing developmental factors in relation to environment (Merriam-Webster)

Eej mod: a tree in Selenge Aimag considered to be sacred by many Mongolians

gross national product (GNP): the total value of the goods and services produced by the residents of a nation during a specified period (as a year) (Merriam-Webster)

Reforestation: Re-establishment of forest through planting and/or deliberate seeding on land classified as forest. (Dorjsuren 9)

Soum: second largest sub-national administrative unit of Mongolia under *aimags*

Tögrög: Mongolian unit of currency; in 2012, \$1 = Tg 1,397.5

Introduction:

Throughout human history, forests and forest management have been key factors in the success and failure of nearly every society. In *Collapse: How Societies Choose to Fail or Succeed*, Jared Diamond describes several societies which sustainably managed and utilized their forests and those which did not, and he finds that every society which ultimately collapsed depleted their forest resources. Forests are environmental and economical powerhouses when managed correctly. They are the world's major air filter, and their trees and soils are a major carbon sink. They retain water and protect the land against landslides, erosion, and sediment runoff into streams. They provide important habitat for other living things, and they provide a source for timber and non-timber products (469 Diamond). When the forests are exploited at a rate which is faster than the rate of growth, humans lose the resources which the forests provide.

Some societies that poorly managed their forest resources include the North American Anasazi, the Mayan, and Easter Island. At one time, these societies were all highly functioning and successful, until they collapsed and disappeared. While Diamond outlines five contributing factors to their collapses, deforestation was common in all of them. However, societies with proactive forest management, such as Tokugawa Japan, have continued to function successfully for thousands of years. The health of the human societies are intimately connected to the forests; thus it is important for nations and states to actively and responsibly manage their forest resources. But “[m]ore than half of the world's original forests have been cut down or heavily damaged in the last

8,000 years. Yet our consumption of forest products is accelerating, with the result that more than half of those losses have occurred within the past 50 years” (473 Diamond)

In Mongolia, the forests cover only eight to 12 percent of the country, protecting watersheds and providing timber and fuel wood. Most of the forests are distributed in the north, including the pine tree forest called Tujiin Nars, located in Selenge Aimag near the border with Russia. This paper will focus on Tujiin Nars and its reforestation after it was nearly stripped of its trees. I will describe the history of Mongolian forests and Tujiin Nars, and I will argue that there were five important factors which contributed to this successful transition: a stronger economy in Selenge Aimag, committed civil servants, forest policy with harsher penalties for illegal loggers, government support, and local and global environmental awareness trends. The story of Tujiin Nars and its continuing success in reforesting the forests which were lost in the past 20 years holds important implications for other reforestation projects because it reveals a multifaceted, comprehensive approach necessary for change.

Methodology:

In order to gain an accurate understanding of Mongolian forestry and Tujiin Nars, I visited the site itself in Selenge Aimag and spoke with local stakeholders there. The majority of the information I gathered regarding Tujiin Nars was through personal interviews, many of which were quite spontaneous and rather informal. My interviews would oftentimes be with more than one person at a time, especially when I spoke to people in their homes where family members

came and went. I found that these interviews were quite free flowing, and the interview would gain momentum and even take a conversational turn, making the interviews much more personal. In these cases, having an audio recorder was essential because I was able to transcribe the interview and filter through important information afterwards.

In most of my interviews, I was lucky to have a competent translator; without her, the quality of the interviews and the information gained from them would have suffered. However, because I needed to use a translator for many interviews, I felt that I lost some information as well as a human connection which might have made interviewees more likely to divulge different information. My lack of Mongolian language as well as the nature of my study were both limiting factors in accurately collecting and portraying information regarding Mongolian forestry as a whole; a case study is only one example that contributes to a body of knowledge. However, given the time and my own expertise, I believe that even with the limitations that a case study entails, it was the most practical and feasible way to distill and apply information.

Another limiting factor in my research came from the topic itself. After I conducted my interviews and survey in Selenge Aimag, I realized that the questions I hoped to answer within my ISP were too broad and unsupported for the frame of the ISP, so I readjusted my research questions. Thus, much of the information I gained during interviews was rendered rather useless in regards to my research, and because I changed the focus of my research after leaving Sukhbaatar, I had no opportunity to ask questions in Sukhbaatar that would have

been more relevant to my new focus. My survey did not supply any useful information towards my readjusted research thesis either, and I suspect that even if I had kept my original research topic, the survey would have still been useless. I must also add that I am not a statistician, so while I was able to utilize charts and other numerical data, I cannot do more than comment on the apparent connections within the data.

However, much of the information I gathered through interviews was useful, and I was able to utilize scholarly resources to support claims and statements that my interviewees made. Much of my information came from journals and reports, although finding sources published after 2008 was challenging, making some information rather outdated. In those cases, I would use information from interviews to validate and complement sources which might have lacked a more recent publication. This partnership between personal interviews and scholarly research revealed the importance of me actually traveling to Selenge Aimag and seeing Tujiin Nars and speaking with people there. Most experts on Tujiin Nars live there, and I found that when I tried to get in touch with forestry experts and bureaucrats in Ulaanbaatar they were unavailable and not particularly helpful. Thus, my interviews all took place in Selenge Aimag, and all additional information came from journals, reports, and other papers.

Part I: General Mongolian Forestry

Mongolia is a landlocked country sandwiched between China and Russia. Because of its geographical location, its climate is characterized by sunny days, long cold winters, low precipitation, and wide fluctuations in temperature. It

spans six ecological zones: montane, boreal forest, forest steppe, steppe, desert steppe, and desert (Batkhuu et al 1). Mongolia is considered by the United Nations (UN) to have low forest resources, and forests cover about 19.1 million hectares of the country (Erdenechuluun 602). In general, Mongolia's forests are old forests, and because of the climate, its forests are very slow growing, making them particularly sensitive to overexploitation (Erdenechuluun 5). In addition to human activity, the forests are also highly impacted by disease, pests, and fire.

The majority of Mongolia's forests are larch forests found in the north, on the southern edge of the Siberian Taiga. Other tree species in addition to the Siberian Larch (*Larix siberica*) which contribute to Mongolia's northern forests are the Scots pine (*Pinus sylvestris*), Siberian pine (*Pinus siberica*), birch (*Betula platyphylla*), and aspen (*Populus tremula*), and on average these northern forests "are comprised of 72 percent larch, 11.1 percent birch, 9.5 percent Siberian pine, and 6.3 percent Scots pine" (1 Tree Planting Initiative). In the north, over 90 percent of the forests are contained in just seven aimags (Mühlenberg et al 2). Saxual forests (*Haloxylon Ammodendron*) in southern Mongolia account for about 16% of Mongolia's total forest coverage (Batkhuu et al 604).

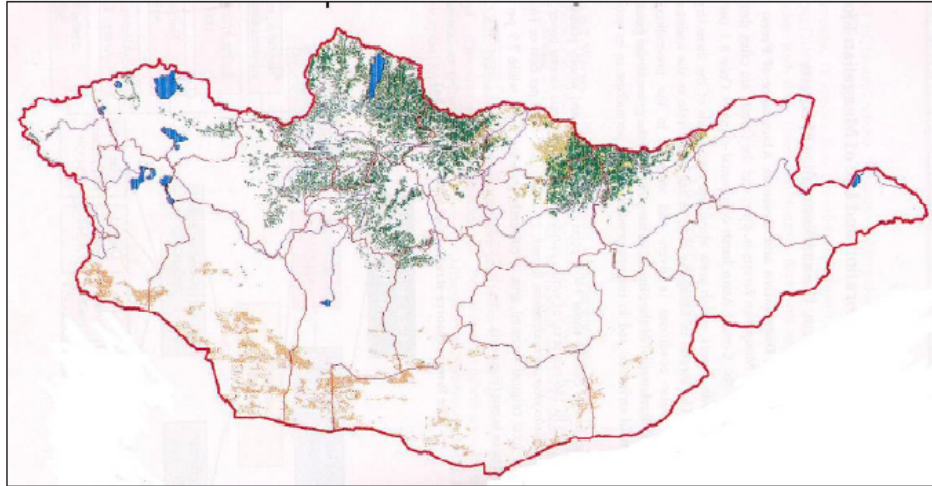


Figure 1

Forest Cover Map: Green Areas Show Forests (Ykhanbai)

Forests are divided into three categories according to their ecological and economical importance: strict zone forest (48.2%), protected zone forest (45%), and utilization zone forest (6.8%) (Erdenechuluun 604). These designations shape the forest management of the areas they cover. A strict zone forest “includes forest areas classified as ‘sub-alpine,’ and those that lie within special protected areas, national parks, nature reserves, and cultural monuments,” and in a strict zone forest, only very limited exploitation such as local fuel and non-timber forest product (NTFP), such as pine nuts and shed deer antlers, collection is permitted (Erdenechuluun 6). A protected zone “establishes broad scale restrictive ‘green areas’ within 5 km around the periphery of the headwaters of major lakes and rivers, 3 km on each side of major rivers, 1 km on each side of a railway or major road, and a radius of 80 km around big cities and 30 km around smaller towns” (Erdenechuluun 6). Commercial forest harvesting is also restricted, and the only forms of exploitation permitted is the collection of domestic fuel wood and harvesting NTFP’s (Erdenechuluun 6). A utilization zone is the default category covering the remainder of the forest, and commercial

timber harvest, with permits and with fees paid to the government, is permitted (Erdenechuluun 6).

The structure of Mongolia's forestry sector has changed with the political and economic changes in the country. Different aspects of forestry have splintered between different institutions and ministries, as “[p]lanning and implementation of forestry programs, forest management and inventory, reforestation, and inspections are handled by the different departments and agencies of the Ministry of Nature and Environment” while the wood industry is managed by the Ministry of Industry and Trade (Batkhuu et al 615). Additionally, “forestry-related research is being done by the different research institutions under the Mongolian Academy of Sciences” (Batkhuu et al 615). This fragmentation leads to sometimes uncoordinated policy, research, and management efforts, and statistics are sometimes confusing and often conflicting.

Part II: History of the Trees

Soviet Period: Pre-1991

During the Soviet Period before 1974, Mongolia's forests were managed by the Ministry of Agriculture (Crisp et al 80). From 1974 to 1987, the forests were managed by the Forestry and Hunting Economy Section of the Ministry of Forestry and Wood Industry. In December of 1987, forestry was integrated into the Ministry of Nature and Environment which was created by the merging of the Ministry of Forestry and Wood Industry and the Ministry of Meteorology and Hydrology (Crisp et al 80). Within the ministry, “the commercial aspects and the restoration and protection of forests were divided between two sectors within the

same national level organization. The local level was basically the same as the national comprising two components, one that handled the forest industry and one for protection of forest resources” (WWF Mongolia 3). Furthermore, because the forest territory resources were centrally managed, “even rangers in the field had powers independent from local governors” (WWF Mongolia 3).

In 1984, the forestry sector accounted for about one sixth of the gross national product (GNP) (Mongolia Forestry). In 1995, Mongolia’s wood based industry reached its peak level, employing more than 20,000 people and accounting for 18% of the industrial production of the country (RRCAP 62). In the mid-1980’s logging produced about 2.2 million cubic meters of fuel wood and timber (RRCAP 62). Fuel wood accounted “for about 55 percent of the timber cut, and the remainder was processed by the woodworking industry” (Mongolia Forestry). Lumber and timber were both exported; in 1986, “Mongolia produced 627,000 cubic meters of sawn timber, of which 121,000 cubic meters was exported” (Mongolia Forestry). The export of lumber was less successful and declined “from 104,000 cubic meters in 1984 to 85,700 cubic meters in 1985 and then to 39,000 cubic meters in 1986” (Mongolia Forestry).

During the Soviet Period, it was thought that Mongolia had the capacity to harvest four to five million cubic meters of timber annually, while today, calculations determine its capacity to be between .9 and 1.4 million cubic meters (Erdenechuluun 1). The industry was also characterized by an application of clear-cutting forestry techniques which are unsuitable in Mongolia’s forests (Erdenechuluun). Thus, not only were too many hectares being cut from the

forests, but they were being cut in a way that does not encourage regrowth. Of the 20,000 hectares felled annually, forestry enterprises only reforested 5,000 hectares (Mongolia Forestry). The World Bank estimated that between the 1950's and 1980's, Mongolia lost 1.6 million hectares of forest because of unsustainable harvesting, as well as fire, disease, pests, and other factors (Crisp et al 72).

Democracy: 1991-2008

While the levels of timber harvested during the Soviet Period were unsustainable, the efforts were coordinated by the government. This organization dissolved after the transition to democracy and capitalism in the 1990's and wreaked havoc on Mongolia's forests. Forestry's contribution to the Mongolian GNP has decreased from that during the Soviet Period to 4.1 percent in 1990 and .26 percent, or five to six billion Tögrög, in 2009 (Ykhanbai 15). Between 1990 and 2007, the amount of natural forests decreased by a total of 1,019 hectares, areas of sparse forest and harvested forest increased 10 or 20 fold (Ykhanbai). From 1995 to 2000, the Mongolian Parliament adopted several laws on forest management, but those "relevant laws and regulations have not succeeded due to a lack appropriate institutional restructuring and privatization of the forestry sector during the period of economic transition" (Tsogtbaatar 2).

According to Mongolia's Constitution, forests belong to the state which can grant possession to local governments which can then grant "citizens, economic entities and organizations the right to use the forests and forest resources pursuant to contract or license" (Tsogtbaatar 2). The Mongolian Law on Forests came into effect in March, 1995, and it was intended to address "the

basic questions of proper forest use, management of forest protection and regeneration of Mongolia's forests” (Tsogtbaatar 3). While this law divided Mongolia’s forests into the three management zones, it did not indicate how the “ownership” of forest resources outlined in the Constitution would affect “the rights inherent in land lease contracts, their extensions, or other land use laws and regulations” (Tsogtbaatar 3). The Law on Forests prohibits “cutting or harming forests up to 5th age class, cutting all species of young trees, cutting certain species of trees and shrubs, clear cutting and, grazing where seedlings have been planted” (Tsogtbaatar 5). Other forestry laws adopted included the Mongolian Law on Fees for Forest Harvesting which became effective in July, 1995 and was purposed to regulate fee requirements for timber harvesting. The law imposes fees on “the cutting of any kind of tree in the forest, for any purpose” which are based on the volume of forest produce gathered, ecological and economic assessment, transportation distance, and tree species (Tsogtbaatar 5). Additionally, in 1998, the National Forest Policy was prepared and focused on forest utilization, forestry resources, conservation and social welfare concerns (Ykhanbai 2).

While these laws were put in place with the intention of managing forest resources and regulating timber harvesting, a weak institutional framework and a lack of enforcement mechanisms enabled rampant illegal logging. For example, the inspectors and rangers in the field who bear most of the responsibility for the implementation of environmental laws have little training and few resources available to them; “most soum inspectors, unless they have their own vehicles, are

not able to visit the area that they are supposed to cover” (WWF Mongolia 4). Additionally, “the economic, political, and social incentives *not* to enforce the law are more stronger [*sic*] than enforcing the law” (WWF Mongolia 4). Thus weak mechanisms and weaker enforcement incentives led to a well-meaning but ineffective forestry policy continued the unsustainable rates of deforestation present in the Soviet Period (through legal and illegal logging).

This deforestation, while enabled by weak policy, was created by a high domestic and international demand for timber products. According to a park ranger, after the transition to democracy, the number of private logging entities increased (Interview). In 2005, total domestic demand was about 1.8 million cubic meters, and government quotas for sawn-wood products and fuel wood were .04 million cubic meters and .6 million cubic meters, respectively. These numbers however, do not take into account half of the total timber harvesting in Mongolia which took place illegally, and according to some estimations, total illegal wood harvest ranges from “345,000 to 1.0 million meters cubed per year.” (Ykhanbai 3). Thus, “[d]uring the 1990s annual harvest rates ballooned to about 60,000 ha/year, whereas the prevailing rate through the past century averaged some 40,000 ha/year” (MNE 29).

Mongolia’s export market was influenced by its own domestic policy and the policy of its neighbors, primarily China. While wood exports decreased at the beginning of the 1990’s from the high rates of the 1980’s (to the Soviet Union), export rates began to increase in 1996, and in 1998, Mongolia exported 268 thousand cubic meters of sawn-wood. Mongolia’s timber market was influenced

by the Chinese market which because of its own policy and liberalization of trade because of China's entrance to the WTO increased demand and imports (WWF Mongolia 13). As people started to export trees to China, the number of private entities increased as well (Ranger Interview). In 1999, the Mongolian government passed an export tax of 150,000 Tögrög (about USD150) on logs and semi-processed wood, which more or less halted legal export. This export tax, while meant to conserve forest resources, forced the logging industry underground and led to increased rates of illegal logging because of Mongolians' need for cash and the presence of the hungry Chinese market (WWF Mongolia 13).

| Timber products | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Volume m ³ | Volume m ³ | Volume m ³ | Volume m ³ | Volume m ³ | Volume m ³ |
| Round wood | 1,768 | 5 | 1,292 | 507 | 8,580 | 5,911 |
| Sawn wood | 44,838 | 104,622 | 168,697 | 268,125 | 38,288 | 2,539 |
| Fuel wood | 4,390 | 2,922 | 1,304 | 135 | 679 | |
| Railway sleeper | | 45 | 172 | 80 | 235 | 478 |

Table 1
Export of Timber Products of Mongolia 1995-2000 (WWF Mongolia 14)

Thus, because of poorly thought out market regulations and weak environmental policy and enforcement, a majority of the logging industry became characterized by illegal logging, costing the Mongolian government through lost revenue through fees and taxes, legal enforcement measures, and in continual environmental rehabilitation costs. This exploitation, with its roots in the 1990's, has continued through until 2008 in certain areas and even today in other areas.

This change has been shaped by a revision of Mongolia's Law on Forest in 2007 which became effective in 2008. This law outlined harsher penalties for illegal loggers with higher fines and even the possibility of prison for some offenses. While the 2007 Law on Forests is not without its weaknesses and it is

still rife with loopholes and conflicting interpretations at national and regional levels of government, its improvements are considered effective (Batzorig). Part of its effectiveness was attributed by one ranger to the community involvement in the drafting of the law which gave many actors the opportunity to contribute their own field experience (Interview). While many of these laws still lack effective implementation and enforcement, they contribute to increasingly effective environmental policy framework.

Illegal logging has been the major challenge to Mongolia's forests since the transition to democracy, and has had major environmental, economic, and social impacts. Each year, about one million cubic meters of wood are cut (Ykhanbai 5). Illegal logging has reduced the size of Mongolia's forests, especially those accessible or near urban areas, and damaged the structure of the forest, making it vulnerable to fire because of high fuel loads (scrap wood trimmed from trees and left on the forest floor) (Erdenechuluun). Additionally, as forests become depleted, water quantity and quality as well as forest biodiversity decreases while soil erosion increases. The Mongolian government also loses valuable revenue from lost opportunities to excise permits, fees, and taxes from legal logging; one report estimated that the government lost between USD 540,000 and 1.7 million per year in stumpage revenue alone, with total losses approaching several thousand US dollars per year (Ykhanbai 78). Illegal logging prevents the development of "the forestry industry and constituting a barrier to the establishment of a positive business environment," and because illegal loggers have low costs and do not pay taxes, they undercut the market value of the legal

Mongolian wood market (Erdenechuluun 45). Finally, because of their involvement in the illegal timber trade, people have lost their respect for Mongolia's civil servants, government, justice system, or the police (Erdenechuluun 46). This was apparent in interviews with Sukhbaatar City's community members; most of them knew little about the forests surrounding their city, but nearly all of them accused government officials of corruption or said that the government does not do enough for the environment.

Illegal logging can be categorized depending on socioeconomic context in which it occurs: securing basic subsistence needs, enhancing livelihoods, and commercializing illegal logging. Securing basic subsistence needs occurs in rural and urban areas by families for construction and fuel wood without permits; not a huge quantity of wood is cut through this category, although small trees that can be felled with handsaws are particularly vulnerable (Erdenechuluun 8). The greatest number of people take part in enhancing their livelihoods through illegal logging, particularly the unemployed poor and small groups of people "who sell timber on a more organized basis" (Erdenechuluun 9). Commercialized illegal logging harvests the majority of illegal timber through businesses with forestry licenses and large, organized groups that do not have a legal screen (Erdenechuluun 9). In short, commercialized illegal logging clears the most amount of wood, illegal logging to enhance livelihoods involves the most people, and illegal logging that secures basic subsistence occurs on a small scale but targets vulnerable trees.

Part III: Tujiin Nars

One forest which was ravaged by illegal logging is Tujiin Nars, in Selenge Aimag, near Sukhbaatar City. Tujiin Nars is a special protected area of pine trees that covers 8,961 hectares and stretches from Mongolia into Russia. The forest sheltered Mongolian revolutionaries in the 1920's, was nearly laid bare by illegal loggers in the 1990's, gained its protected status in 2003, and is now the site of extensive reforestation. Community members remember thick, lush forests during Socialist times that were nearly laid bare during the 1990's. One lady who grew up in the area remembers:

When I was a child, Tujiin Nars was just full of trees, and actually that was continuous until democracy. I lived here until I was three years old, but later when I was a student, when I visited, it was still full of the forest. It was like the movies (remember the movies full of the very deep forests, where people can only go by the roads?)...it was really like that. Even during the Socialist times, the Tujiin Nars were quiet nice, but later, after the democracy, there were lots of forest fires and also illegal loggers. Later it was so painful to see that. I regret it so much. To compare, it was like the old people without hair; it was bald.

People who remember Tujiin Nars's natural beauty remember its deforestation with great sadness and regret. After the transition to democracy, there were many forest fires, and one former ranger, Dovdomdemberel, remembers that "the government began to give the people permission to use the burnt trees. So when the people finished cutting the burnt trees, they started to attack the green trees. That's why the violence of the trees kind of spread out; that is the reason that people accidentally began to attack Tujiin Nars" (Interview). Selenge Aimag harbors 19 percent of Mongolia's forests, and the trans-Mongolian railroad also runs through the aimag, making illegal logging more accessible than other provinces (Mühlenberg et al 2). Timber extracted from Tujiin Nars was used for

fuel wood, construction, furniture building, and private use, and demand is high. For fuel wood alone, community members estimate that one family not connected to central heating in Sukhbaatar City uses eight cubic meters of fuel wood per winter, although now the wood which people use come from different soums.

The extent of deforestation in Tujiin Nars caused a national outcry, spurred by the newspaper *Zuunii Medee* (Зууны мэдээ) in 2000 and supported by the president at the time, and in 2003, Tujiin Nars became a protected area (Batzorig). However, illegal logging continued because at the time, the Mongolian Law on Forests did not exact strict penalties. The years between 2003 and 2008 were described by a Tujiin Nars ranger as a war between illegal loggers and rangers. They would wake up early and patrol for illegal loggers, go to work, and continue to patrol for illegal loggers, sleeping only three hours a day. The rangers became expert trackers, and they are able to recognize logger's tire tracks. Likewise, the loggers are able to recognize ranger's vehicles. Loggers and rangers alike would track and evade each other, doubling back on tracks, creating false trails, lying in wait for the other. Sometimes fighting would break out, with people shooting gasoline at each other through gasoline guns, spraying the other people and their cars. Rangers also faced intimidation and blackmail; some were beat up while others found totems of black magic in front of their homes, leading some rangers quit their jobs over the conflict.

While some local people aided the illegal loggers in evading the rangers, others would alert the rangers to the vehicles, and over time, the number of illegal loggers began to decrease. The number of illegal loggers has decreased from 25

to four in the last eight years, a product of the 2007 revision of the Mongolia Law on Forests with its harsher penalties as well as the rangers' efforts and improvements at communicating with the illegal loggers and educating them about the environmental impacts of illegal logging. Since 2008, the majority of the forests lost have been because of fire, not illegal logging.

People in Sukhbaatar City are critical of illegal loggers, although they are also sympathetic to the economic situation many illegal loggers live in. Nearly everyone I interviewed acknowledged that if someone is poor, they cannot afford to think about the future or the environmental impacts of their actions, they can only afford to think about feeding their families or sending their children to school. However, they don't like the environmental impact of deforestation and they will report illegal logging activity (in fact they are required to by the Mongolia Law on Forests). Mongolian people have a long tradition of respecting the relationship between humans and nature, and traditionally, nature was protected by the people's religious beliefs (Selenge Aimag Community Member). Even today, most Mongolians most are told the rules of this relationship through stories and teachings at a young age; however today these traditional beliefs are in direct conflict with much of the activity going on in the forests.

Traditionally, the unnecessary cutting of trees has been considered taboo (Sarangerel 42). People believe that if someone cuts trees, his/her life will also be cut short, and that if someone cuts trees in prohibited areas, such at the sources of streams or on certain mountains, he/she will be punished by nature spirits. One ranger said that he noticed "that people who made business in green trees now

live in bad conditions. So instead of me, those spirits are giving them penalty” (Selenge Aimag Ranger). One woman called a recent drought nature’s punishment for people’s bad behavior towards Mother Nature (Selenge Aimag Community Member). Most of these stories, teachings, and taboos are not respected as they have been in the past, but as the environmental impact of activities such as deforestation becomes more and more apparent, people are beginning to regain more environmental awareness.

Today in Tujiin Nars, illegal logging is less of a problem than it was before 2008, although it still exists. While rangers are concerned with monitoring people in the forest and preventing forest fires, they are always looking out for illegal loggers (Selenge Aimag Ranger). One former ranger who was involved in Tujiin Nars’s reforestation says, “There are still a lot of stupid people who are cutting the wood and destroying the nature” (Selenge Aimag Farmers). There is still a lot of money to be made in the forests; the owner of two of Sukhbaatar City’s wood markets is a wealthy man. His larger wood yard employs 60 people and processes boards, beams, and particle board for construction in addition to selling firewood. Besides owning the two wood markets, the man also owns a supermarket, restaurant, bar, and when I asked three women about the owner, they laughed and suggested that he uses a kind of corruption. They also related how illegal loggers simply log where rangers are not present; Tujiin Nars is a big forest and there are many different ways to cut trees (Selenge Aimag Teachers). In my own experience, I saw a horse pulling a cart of felled logs into the city when I was walking towards a monument west of Sukhbaatar City. While I do not know

if they had a permit to cut the wood, they did not seem like the most legitimate wood cutters. They and the stories of the wood market owner suggest the continuing presence and different levels of illegal logging in the area, not just Tujiin Nars.

Nonetheless Tujiin Nars is the site of one of the most successful reforestation efforts in Mongolia. Where as other reforestation efforts with larch trees have extremely marginal survival rates around 12 percent, pine trees have a mean survival rate of 37 percent rates (Mühlenberg). This overall rate has the potential to become even more successful as some individual reforest sites had success rates of 70 to 80 percent (Koo Lee 104). The success of individual reforestation sites depends on a few factors: “the neglect of seedlings, unskilled planting, fires, cattle grazing, and a government order to plant in spring (when there is low precipitation) (Mühlenberg). The government has been very involved in reforesting Tujiin Nars, and in total 10,000 hectares have been reforested (some trees were lost to a fire in 2004). The Head of Selenge Aimag’s Department of Nature and Environment said that reforestation was almost finished, even though there are some places that are still open. Soon the private companies which did the actual planting of the trees will sell their projects back to the government and will no longer be under contract (Batzorig). Other community members have also notice the improvements made in Tujiin Nars in the last ten years, and are happy that the hills that were once bald are becoming more green. The success of the reforestation cannot be attributed to only the government, although this support was important. Tujiin Nars represents the convergence of five different factors

which have contributed to its success: a stronger economy, stricter forestry laws, committed public servants, government spending, and increased environmental awareness.

Part IV: The Five Factors

In many interviews in Sukhbaatar City, people acknowledged a connection between poverty and illegal logging, saying that people in poverty cannot afford to think about the environment. One lady, a Seabuckthorn farmer in Selenge Aimag, said, “It also depends on the life situation. If people are so poor, they do not think about the future. They just cut to have some money to buy some bread. There are some places where life income is increasing, and life is getting much better. At that time people can think about protecting the nature” (Interview). In the past, illegal logging has been a significant contributor to deforestation in Tujiin Nars; thus as people become more wealthy, they do not need to participate in illegal logging, and the forests remain intact.

This connection described by the Seabuckthorn farmer and other interviewees is supported by the ecological modernization theory which “argues that capitalist economies have the ability to reform and/or reinvent themselves to promote environmental goals” (Ehrhardt-Martinez et al 3). This perspective connects economic development and environmental exploitation, arguing that as a country becomes more developed, environmental degradation ultimately decreases. Studies have further connected this theory to deforestation; thus “deforestation increases in early stages of development but levels off and declines as economies mature“ (Shandra 545). Less developed countries have basic

economies based largely on agriculture, and as they begin to industrialize, they begin to extract more natural resources. Because these countries are highly dependent upon the extraction of these natural resources, including logs and forest products, economic development initially leads to deforestation (Shandra 545). As countries continue to develop, they “shift to new building materials, and more use of fossil fuels for energy, all of which may reduce pressure on forests,” and accordingly, deforestation will follow “a general pattern of rapid growth during early development followed by a leveling off during higher development” (Shandra 545).

Mongolia’s own process of development and deforestation supports this theory, and as Mongolia’s GDP has increased, levels of deforestation have decreased. When Mongolia first transitioned into democracy, it experienced a harsh recession. Inflation of 325 percent in 1992 and 183 percent in 1993 led to high prices which, without government support, led many businesses to declare bankruptcy as industries became unprofitable, “leading to a drop in production and an increase in unemployment” (Rossabi 52). “In 1992, industrial production declined 23.7 percent from the previous year,” and “[i]nvestment, which had amounted to 46 percent of the GDP in 1989, had fallen dramatically to 29.3 percent by 1992” (Rossabi 53). Accordingly, rates of deforestation at this time began to increase from an average rate of 40,000 hectares per year to 60,000 hectares per year (Erdenechuluun 1).

This trend is also apparent when comparing GDP, total land degradation area, and forest resource degradation area in later years. As GDP increases, the

amount of land degradation decreases, as apparent below:

| Year | Area affected by degradation | Forest resources land | GDP, mln.tog |
|-------------|-------------------------------------|------------------------------|---------------------|
| 2003 | 13,132.40 | 1,163.20 | 1,829,072.23 |
| 2004 | 13,082.20 | 877.30 | 2,361,156.95 |
| 2005 | 11,482.60 | 347.80 | 3,041,405.74 |
| 2006 | 11,078.90 | 346.40 | 4,027,558.62 |
| 2007 | 14,076.60 | 1,356.90 | 4,956,647.18 |
| 2008 | 12,341.40 | 696.50 | 6,555,569.35 |
| 2009 | 11,167.60 | 834.24 | 6,590,637.14 |
| 2010 | 7,364.46 | 375.74 | 8,255,060.94 |

Table 2
Land Area in thousands of hectares
Source: National Statistic Office of Mongolia

While the causes and effects of these numbers are complicated and multifaceted, the correlation between the two is clear. Mongolia's GDP increased from 18.3 trillion Tögrögs in 2003 to 8.3 trillion Tögrögs in 2010 and areas of land degradation decreased simultaneously from 13 million hectares to 7.3 million hectares, further supporting the theory of ecological modernization.

This theory can also be connected to Selenge Aimag and Tujiin Nars.

Selenge Aimag is one of the most richly forested aimags in Mongolia; however it is also a rich agricultural aimag. About 50 percent of the total area are plantation fields, and the aimag produces 60 percent of Mongolia's cereals, 28 percent of potatoes, 36 percent of vegetables, and 30 percent of fodder, making Selenge Aimag Mongolia's largest cereal producer and second largest potato, vegetable, and fodder producer (Selenge Province). Additionally, Selenge Aimag's proximity to Russia and its access to the railroad will also increase economic opportunity through imports and exports; however, this report will focus on the agricultural industry as a source for the growing economy.

Agriculture accounts for about 15 percent of Mongolia's GDP, and while agriculture includes forestry, it only takes into account legal forestry

(IndexMundi). While the mining industry in Mongolia has overwhelmed the GDP, the agricultural industry has been consistently improving as well; thus as one of main contributors to Mongolian agriculture industry, Selenge Aimag reflects improvements made at a national scale in its own regional economy.

| Agriculture, forestry and fishing GDP, at current prices | |
|---|--------------|
| Year | GDP |
| 2000 | 335,668.79 |
| 2001 | 319,698.93 |
| 2002 | 293,361.83 |
| 2003 | 337,272.09 |
| 2004 | 472,934.46 |
| 2005 | 602,136.31 |
| 2006 | 710,609.19 |
| 2007 | 913,409.23 |
| 2008 | 1,259,660.83 |
| 2009 | 1,312,433.47 |

Table 3
GDP given in Tögrög
Source: National Statistic Office of Mongolia

As this industry has increased, Selenge Aimag's GDP has also seen increases and local government revenue has increased as well as the table below reveals:

| Gross Domestic Product for Selenge Aimag | Annual Local Government Revenue |
|---|--|
|---|--|

| Year | GDP |
|-------------|--------------|
| 2000 | 335,668.79 |
| 2001 | 319,698.93 |
| 2002 | 293,361.83 |
| 2003 | 337,272.09 |
| 2004 | 472,934.46 |
| 2005 | 602,136.31 |
| 2006 | 710,609.19 |
| 2007 | 913,409.23 |
| 2008 | 1,259,660.83 |
| 2009 | 1,312,433.47 |

| Year | Selenge |
|-------------|-----------------|
| 2000 | \$4,379.10 |
| 2001 | \$4,862.80 |
| 2002 | \$4,069.80 |
| 2003 | \$1,264.63 |
| 2004 | \$1,109,570.41 |
| 2005 | \$1,163,638.80 |
| 2006 | \$1,397,009.80 |
| 2007 | \$5,324,022.20 |
| 2008 | \$3,496,854.00 |
| 2009 | \$11,485,045.00 |

Table 4 & 5
GDP and Revenue given in Tögrög
Source: National Statistic Office of Mongolia

Finally, people in Selenge Aimag have been paid increasingly better over time, especially compared to another forest rich aimag, Khovsgol Aimag:

| Average Employment Salaries by Quarter | | |
|---|-----------------|----------------|
| | Khovsgol | Selenge |
| 2001 | 119,362.95 | 487,752.25 |
| 2002 | 88,030.90 | 254,379.05 |
| 2003 | 90,344.35 | 251,266.45 |
| 2004 | 108,446.90 | 291,734.55 |
| 2005 | 110,874.60 | 498,495.05 |
| 2006 | 192,962.75 | 685,736.15 |
| 2007 | 276,545.40 | 764,317.45 |
| 2008 | 517,773.15 | 2,079,737.35 |
| 2009 | 545,512.40 | 1,470,384.75 |
| 2010 | 527,133.50 | 1,291,410.30 |

Table 6
Salaries are given in Mongolia Tögrög
Source: National Statistic Office of Mongolia

Interestingly, 2008, when the Tuijin Nars rangers said that illegal logging and deforestation got better, was a year of particularly high salaries, agricultural GDP, and local government GDP. Of course, as I will continue to argue, there was not just one factor that contributed to the decrease in illegal loggers and deforestation; however this economic swell should not be ignored. Around 2008, people in Selenge Aimag became less poor, people had enough wealth to care about their environment and its future, and the economic incentive to break the law by illegal logging would have also decreased.

The incentive to log illegally was also dampened by the renewal and revision of Mongolia's Law on Forests which became effective in 2008. Penalties which applied to contraventions in the original Law on Forests increased significantly. The number of punishable offenses increased from seven to nine, and the fines which applied to those contraventions increased as well. In the original Law on Forests, fines for individuals ranged between 500 and 25,000 Tögrögs and for economic entities ranged between 50,000 and 250,000 Tögrögs for contraventions such as illegal logging (of various degrees) and not following preventative measures for forest fires, insects, and diseases. In the revised law, fines for individuals increased to 25,000 and 100,000 Tögrög, economic entities expanded to include partnership and organization, and the fines for economic entities increase to 150,000 to 300,000 Tögrög. While these fines are not enough to eradicate illegal logging, they do make it less profitable. For example, in Sukhbaatar City, one truck load of firewood which can hold 4 cubic meters of wood will sell for 180,000 to 250,000 Tögrög (Selenge Aimag English Teachers). These increased fines in the 2007 Law on Forests decreases the potential profit from each truckload of wood, further disincentivizing illegal logging, especially when coupled with the growing wealth and quality of life which residents in Selenge Aimag have started to experience.

These two factors are important contributor to the reforestation of Tujiin Nars because they helped create an environment that does not support or enable illegal logging. A stronger economy has given people in Selenge Aimag the opportunity to chose alternative ways to earn income while the Law on Forests'

stricter punishments has installed even more disincentives for illegal logging. However, the installation of this social environment and the subsequent reforestation of Tujiin Nars would not have been possible without the enforcement of highly committed public servants. In the past, rangers and inspectors not only lacked the resources to enforce environmental laws, but they also lacked the social, economic, and political incentives to enforce environmental laws. The rangers who enforce policy in Tujiin Nars have already proved their commitment to the forests from 2003 to 2008, when they battled against the illegal loggers. Now, rangers patrol Tujiin Nars about twice a week, searching for illegal loggers and forest fires.

Rangers and specialists also spend a lot of energy educating the public about Tujiin Nars and environmental issues. In fact, they credit increased outreach and education for the decrease in illegal logging. In the past, illegal loggers would face legal penalties, and rangers also tried to ensure that the illegal loggers learned about the law, about the penalty, and about the impacts of their actions. One ranger, Dovdomdemberel, said that through education, “those illegal loggers stopped being illegal one by one, and the main thing that we thought was that we needed to make them understand.” Sending loggers to prison was not helping their purpose, so with local communities, Dovdomdemberel planted trees over about 110 hectares. As people saw the new trees, “they started to love the forests again. This is the result of the work.” Dovdomdemberel, who now owns a tree farm, has spearheaded further community outreach as well. As he says, “My main purpose is I want to make the people understand that human beings and

nature must never be enemies to own another, they must be good friends or relatives.” He teaches herders ways to practice animal husbandry in ways which does not affect the forests and to plant trees and vegetables. He organizes and funds trainings every year to teach people how to plant trees, and he often times brings local people to the Tujiin Nars area. Ultimately, he plans to establish an ecological department in the area in order to give young people knowledge and appreciate of trees and nature.

I spent one day with Tujiin Nars specialists and rangers, patrolling for illegal loggers in the morning and visiting a reforested site in the afternoon. During the morning, we drove on snow covered dirt roads, and the rangers inspected vehicle tracks. They told me that they can tell the type of car (passenger or truck), how heavy it is, and which direction it was going, so we followed the tracks, eventually finding one of a heavy truck. The rangers stopped at a man’s home and asked him if he had seen a logger’s truck. The man said no, and the rangers gave him a warning, saying that if they caught a logger, he would also be in trouble. We never found the logger, if there was one, but the rangers planned to return later to investigate further. After meeting them and talking to them about their work, I felt impressed and encouraged by their commitment and dedication to the forest. They were pained when the trees were logged, and now they are proud of the change and improvement Tujiin Nars has seen (Dovdomdemberel). Mongolia is lucky to have such public servants and would be lucky to have more or them.

The reforestation efforts of which the rangers are so proud were enabled

by national and international support, the fourth factor which contributed to Tujiin Nars's success. Put simply, the Tujiin Nars reforestation effort received the money and resources it needed to succeed. Mongolia's government has implemented a planting program for over 30 years, and the first reforestation efforts were initiated in the 1970's. The level of investment ranges between 400,000 and 600,000 USD per year, and in 2004, 500 million Tögrög provided by the national government (Mühlenberg et al 5). The Mongolian government spent between 500 and 800 million Tögrög each year on its forests from 2000 to 2006, as the table below reveals:

| Activities | Unit of measurement | Year | | | | | |
|-----------------|---------------------|------|------|------|-------|-------|-------|
| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Forestry budget | TUG millions | 560 | 560 | 521 | 669.5 | 768.4 | 788.1 |
| -State | | | | | | 494.8 | 485.5 |
| -Local | | | | | | 75.7 | 34.9 |
| -Economic units | | | | | | 197.9 | 267.7 |

Table 7

Source: Mongolian Forestry Outlook Report

The national government has focused on Tujiin Nars's reforestation, and Tujiin Nars was the recipient of 50 percent of Mongolia's reforestation budget until 2011 (Botzorig). The actual reforestation was organized by the state nature conservation administration in partnership with private companies, a degree of involvement which has been in other reforestation projects (Mühlenberg et al 12).

Additional financing is provided from local budgets, the organizations conducting the planting, and international donors (Mühlenberg et al). Donors include the North East Asia Forest Forum, the Hyogo Environmental Advancement Association, Forest and Wildlife Center, Asian Development Bank, Global Environment Fund, United Nations (especially through the Food and

Agriculture Organization), and others, all of which either contribute money or have funded their own projects. Additionally, because of a presidential resolution, private entities making profit cutting 100 m³ of woods must reforest five hectares of land where they cut wood (Batzorig).

| Activities | | 2004 | 2005 | 2006 | 2007 | Äzi | 2008 | total |
|----------------------------------|-----------------------------|---------------|---------------|---------------|---------------|----------------|--------|----------------|
| Reforestation and afforestations | From the state budget | 6358.6 | 1787 | 1714.1 | 3997 | 13856.7 | 8000.0 | 21856.7 |
| | From the local budget | 1334.8 | 786.7 | 199.7 | 263 | 2584.2 | | 2584.2 |
| | From the business entities | 1842.7 | 823.0 | 2242.7 | 1871.0 | 6779.4 | 2500.0 | 9279.4 |
| | From foreign investment | 325.0 | 1155.5 | 439.5 | 150.0 | 2070.0 | | 2070.0 |
| | Green belt national program | | 307.0 | 430.0 | 260.0 | 997.0 | 265.0 | 1262.0 |
| | Total | 9861.1 | 4859.2 | 5026.0 | 6541.0 | 26287.3 | | 37052.3 |

Table 8
Spending on Reforestation and Afforestation in Thousands of MNT
Source:(Enebish 29)

Government support was the tangible factor which contributed to Tujiin Nars's successful reforestation; money and resources were required to actually buy seedlings and hire people to plant the trees. However, the previous factors created the environment which made the initial planting sustainable; had Selenge Aimag been less wealthy, its citizens might not have been as concerned with the reforestation movement, had the Law on Forests remained so weak more people might have participated in illegal logging, and had the Tujiin Nars rangers and specialist been less committed to the forest, laws might not have been enforced and local environmental awareness might have remained low. Coupled with the tangible resources, these four factors have enabled the success of Tujiin Nars up to this point in time. What remains are questions of the future, and whether the movement to protect and replant Tujiin Nars will continue to be respected.

This question of the future is addressed by the fifth and final factor: a rise

in environmental awareness. This awareness comes from two sources, an international movement to address climate change and a reawakening of foundational Mongolian attitudes towards nature. Together, these have contributed to different demographics realizing the importance of nature and forests, whether through scientific channels or cultural ones. This awareness will be what continues the promotion and success of projects like the reforestation of Tujiin Nars.

Few people deny that earth's environment is changing. Global temperatures and ocean levels are rising, some places in the world are experiencing debilitating drought while others are inundated with flooding, and weather patterns are becoming more severe (Basics). Countries across the world are preparing for the effects of climate change, especially island nations which will literally be drowned by the rising ocean levels (Columbia Law School). The entrance of most nations into environmental treaties and agreements further supports international acknowledgement of climate change, and the role which people play in mitigating the changes which most people and states agree are anthropogenic. Increasingly, climate change is being taught in schools (in Mongolia, climate change is taught in Geography classes), and information regarding climate change is covered in the media. In fact, in Mongolia, most information regarding climate change is distributed by the media and television (Sea buckthorn Farmer). Older people who I spoke with said that they learned about climate change by watching television, although they have noticed it in other ways, as have many Mongolians.

In Selenge Aimag, people of all ages have noticed trends of warmer winters, increasing desertification, and lower water levels in their rivers which are all different from their childhoods. One lady, who grew up remembered Selenge Aimag from her childhood: “When we were children the land was so beautiful, everywhere the water, it was so green, the people were so happy; it was like heaven. But now it has really changed. After democracy, because of the mining they are digging everywhere, and also everywhere, rivers and streams are drying out” (Selenge Aimag Community Member). Another woman described how during the Socialist times, small ships and boats actually navigated the rivers in Selenge Aimag, but now, “in some places in the river, the water disappears and then comes back farther downstream” (Selenge Aimag English Teacher 2). Dovidomdemberel, the tree farmer and forest ranger, planted many of his trees to protect those rivers from desertification and as a barrier against the movement of sand which has become increasingly pronounced in recent years because “lots of places that were so green, with high grasses, just disappeared, and are now just sands. And the plants that grow in the Gobi area and starting to move north, and the old plants that used to live here are just disappearing and the Gobi plants are moving here.” Other women in Selenge Aimag noticed increasing desertification, saying, “In summer, it is very hard, because the sun is shining the top of the body, and sand is shining the bottom of the body. When I was a child, there wasn’t much sand. We put on slippers and high heels, and we could go very easily, but now it is very difficult and you slip slip slip! There is much sand in these last few years also” (Selenge Aimag English Teacher 1).

These same people also say that these environmental changes have gained the attention of many community members: “people are not really stupid; they are seeing how the environment is getting. So it might be that those big changes are making them understand, ‘Oh this is not good. We need to stop because perhaps if we continue to do this, things will get worse and worse’” (Selenge Aimag Sea buckthorn Farmer 1). These environmental issues which the citizens of Selenge Aimag have noticed are also the focus on international attention, and the issues which affect a small province in Mongolia international issues. Actors on all levels recognize the need for change from the point of view of environmental impact and climate change, making more resources more readily available for projects in the future.

This renewed environmental consciousness which has soaked into the international agenda also has a very strong foundation in Mongolian culture and spirituality, one which I believe is deeper even than Shamanism, the traditional “religion” of Mongolia. Nearly every Mongolian I have spoken with has acknowledged the deep connection between humans and nature, perhaps a reflection of centuries as nomadic herders, dependent on the environment. In Selenge Aimag, I found that while there were few people who identified themselves as believers in Shamanism (most were Buddhist or non-believers), everyone admitted that they practiced some type of ritual that honored nature spirits. This surprised me because of the presence of *eej mod* or the Mother Tree in Selenge Aimag, a particularly important tree to Mongolians who do believe in Shamanism. Many community members were annoyed at the people who

practiced shamanistic rituals at *eej mod*, saying that the blue scarves suffocated the tree and the offerings left a mess at the site. However, just as they were critical of shamanistic practitioners, every person acknowledged the presence of the powerful nature spirit which they considered to “own” the tree itself, and most people admitted praying or making offerings to *eej mod* at least occasionally. Two people to whom I spoke said that after they had prayed to *eej mod*, they received everything which they had asked for within a year, and when questioned further, they resolutely attributed their good fortune to *eej mod*.

This relationship with *eej mod* goes beyond shamanism, revealing a connection to the natural system and nature spirits which has pervaded Mongolian culture for generations. As one man said, “All of the trees, all of the waters have their own spirits, their own owners, but they are different. It is nature’s world, not the shamans” (Selenge Aimag Ranger). Another man reiterated the same thing saying: “Of course I believe in the spirits because the nature is alive. We are also alive; we products of Mother Nature. So for this reason, I always pray to Mother Nature, and I always ask permission when I do something. Everything is alive, that is why I believe those spirits, but I don’t believe the shamans” (Dovdomdemberel).

Traditionally, Mongolians greatly respect nature, and “Mongolians protected the nature through their religious beliefs and teachings” (Selenge Aimag Community Member). These teachings included proper ways to use nature. One elderly woman was taught as a child that if she (and other people) “put one drop of the milk in the ocean, the ocean will be poisoned. The poison is a kind of

bacteria that will make the water dirty. So even though the Mongolians respect the milk to a high level, they avoid putting the milk ladle into the river”

(Interview). Other teachings relate specifically to trees and the forest. There are certain ways to enter a forest, and there are certain ways and places to cut trees. For example, one should not cut trees at the source of a stream or in sacred areas. Unnecessary tree cutting was taboo, and people believe a saying which meant “If you cut a tree, your own life will become like the stump.” If a person does not respect these rules, they will be punished by the nature spirits (Selenge Aimag Ranger). One modern story I was told relates the story of one family which repeatedly cut trees at the source of a stream:

There is one place called *Bayan Bulag*, or *Rich Spring*. People say that it is not allowed to cut the wood at the source of those springs. But there was a family that had five or six children, and they cut trees in this area many times, and later they started to cut the wood from the spring’s source. Later, three children died accidentally. For example, when the people began to prepare the woods, there were many people carrying the trees on a horse cart. One of the children was following the horse cart when a person with a motorcycle came from another side; the child was afraid it was the police or an inspector so he tried to run from the main road. He fell down and was crushed by the wood, and he died. Another child cut the wood and then sold it to someone. Later on the way to take the money for the wood he sold, he died in a car accident. The third one child was crushed by falling trees when he was cutting the wood. So everybody says that the deaths were Mother Nature’s revenge because they were cutting the wood at the source of the streams, in the prohibited area.

These beliefs have been passed through generations of Mongolians by stories and other teachings, even during Socialist times.

But even though these stories and lessons were shared during Socialist times, the religious oppression which is typical of communist states suffocated

Mongolian spirituality. This enforcement was particularly harsh during the 1930's when thousands of Mongolian lamas, scholars, and thinkers were killed, books were burned, and monasteries destroyed. One older Selenge Aimag woman remembers how "[i]n my time, in my children's time, they forced the people to be non-religious, so people started to forget...[that] it's not good to cut the wood, that it's prohibited..." (Selenge Aimag Community Member). People would practice their beliefs in secret, at the risk of being arrested, punished or killed. One former state deer hunter related how he would give offerings of tea and food to the spirits and pray and ask for permission, saying "This is a state job. This is not for myself, not for private use; it is for the public, so please try to understand" (Interview). But even though people found ways to honor and worship nature spirits during socialist times, people were still forced to be outwardly non-religious.

It is this environmental awareness through spirituality is key for the continued vitality of Tujin Nars's reforestation and projects that may follow it. Traditions of respecting nature have always been present in Mongolian culture, but this spirituality is becoming more present in Mongolia. One woman thought that this reawakening is a reflection of Mongolia's continued sovereignty as an independent state. Mongolia has been under the influence of either the Manchu Chinese or the Soviet Union since the late 18th century, and it has been its own democratic country for just over 20 years. The woman continued saying, "In the last few years, we are awakening, we are released from the pressure of the Russians, of the communist time, and also of the Manchu time. Now even today,

you saw that we are celebrating Chinggis Khaan's birthday, it means that we are awakening" (Informant 1). Another woman also noticed a rebirth of Mongolian religion and spirituality saying, "Now things are changing, and people are starting to become religious. Because of that refreshing of religion, people's attitudes are changing and starting to protect the nature again" (Informant 1). A final woman said that "people who send the sky gifts never cut trees...they know to send gifts because it should stay in the forest...this should continue" (Selenge Aimag Teacher 3).

Environmental awareness because of climate change or because of spirituality both help people reach the same conclusions: that nature should be protected and respected. As one lady said, "There are many different ways to climb the same mountain" (Informant 1). So as people become more aware of the value which nature holds, they will in turn value nature more, and hopefully do more to protect it. This valuation of nature is not just a Mongolian attitude, but a global trend, suggesting that more resources and expertise will be available for meaningful environmental projects internationally, enabling countries like Mongolia to protect and restore natural areas such as Tujiin Nars.

Conclusion:

Mongolia has had a painful history of deforestation and illegal logging, a history made more painful because of the traditional importance and respect forests and trees held in the past. Even though Mongolia's democratic government tried to manage illegal logging, its policies and enforcement were ineffective and weak, and deforestation continues even today. This is a serious

problem, because as Jared Diamond reveals in his book *Collapse*, every failed society depleted its forest resources. Additionally, forests play an important role in our present day environment, offsetting climate change as carbon sinks, protecting soil and water quality, and sheltering 50 percent of the world's biodiversity.

Tujiin Nars has had the most successful reforestation effort in Mongolia, after decades of deforestation and abuse at the hands of socialism and democracy, like nearly all Mongolian forests. Today, Tujiin Nars should stand as an example for other environmental movements, not just reforestation projects because its success is due to a holistic range of contributions. Someone did not stick some trees in the ground and recreate a forest; instead there were several factors which together created a social, political, and economical environment conducive to growing pine trees. The most obvious contributors to were government policy and tangible support, followed by committed civil servants, but the two most important factors were the growing economy and environmental awareness. Together, these five factors helped not just to develop a forest but a community around it, stronger on local levels but extending out to the global community.

The story and example of Tujiin Nars is itself an important contribution to the context of Mongolian environmentalism. In a country which is sometimes criticized for its ineffective policy, corrupt politicians and civil servants, and economic inequality, Tujiin Nars reveals the capacity for change and success. Tujiin Nars required improved, effective policy, proactive and committed government and community members, invested stakeholders with tangible

resources, and a growing economy. The most important lesson which Tujiin Nars teaches other environmental movements is the importance of holistic development, that creating a political, social, and economically positive environment and community is the integral element in creating real change.

Bibliography:

- "Basics." EPA. Environmental Protection Agency, 14 June 2012. Web. 30 Nov. 2012. <<http://www.epa.gov/climatechange/basics/>>.
- Batkhuu, Nyam-Osor, Don Koo Lee, and Jamsran Tsogtbaatar. "Forest and Forestry Research and Education in Mongolia." *Journal of Sustainable Forestry* 30.6 (2011): 600-17. Taylor & Francis Online. Taylor & Francis. Web. 20 Nov. 2012.
- Batzorig. "Interview with the Head of Selenge Aimag's Department of Nature and Environment." Personal interview. 12 Nov. 2012.
- Crisp, Nicholas, John Dick, and Micheal Mullins. *Mongolia Forestry Sector Review*. Publication. Victoria, B.C.: World Bank, 2004. Web. 20 Nov. 2012.
- Diamond, Jared M. *Collapse: How Societies Choose to Fail or Succeed*. New York: Viking, 2005. Print.
- Dorjsuren, Chimidnyam. Recommendation for Harmonization and Standardization of MAR Terms. Rep. Ulaanbaatar: n.p., 2008. Ministry of Nature and the Environment of Mongolia (MNE). Web. 28 Nov. 2012.
- Dovdomdemberel. "Tujiiin Nars." Personal interview. 13 Nov. 2012.
- Ehrhardt-Martinez, Karen, Edward M. Crenshaw, and J. Craig Jenkins. "Deforestation and the Environmental Kuznets Curve: A Cross-National Investigation of Intervening Mechanisms." *Social Science Quarterly* 83.1 (2002): 226-43. Wiley Online Library. Web. 26 Nov. 2012.
- Enebish, Dugerjav. *Global Forest Resources Assessment 2010: Mongolia*. Rep.

no. FRA2010/136. Ulaanbaatar: Food and Agriculture Organization of the United Nations, 2008. Food and Agriculture Organization of the United Nations, 2008. Web. 29 Nov. 2012.

Erdenechuluun, T. *Wood Supply in Mongolia: The Legal and Illegal Economies*. Mongolia Discussion Papers, East Asia and Pacific Environment and Social Development Department. Washington, D.C.: World Bank. 2006.

Informant 1. Personal interview. 16 Nov. 2012.

Koo Lee, Don. *Keep Asia Green: Volume II "Northeast Asia"*. Rep. Vienna: IUFRO Headquarters, 2007. International Union of Forest Research Organizations. Web. 29 Nov. 2012.

"National Statistical Office of Mongolia." National Statistical Office of Mongolia. N.p., n.d. Web. 27 Nov. 2012.

<http://www.nso.mn/v3/index2.php?page=free_access>.

Merriam-Webster. Merriam-Webster, n.d. Web. 01 Dec. 2012.

<<http://www.merriam-webster.com/>>.

Ministry of Nature and Environment, Batsorig. "Selenge Aimag Ministry of Nature and Environment." Personal interview. 12 Nov. 2012.

"Mongolia Economy Profile 2012." Mongolia Economy Profile 2012. IndexMundi, 19 July 2012. Web. 30 Nov. 2012.

"Mongolia Forestry." *Mongolia Forestry*. Mongabay: Environmental News, n.d. Web. 20 Nov. 2012.<<http://www.mongabay.com/history/mongolia/mongolia-forestry.html>>.

Mongolia. Ministry of Nature and Environment. Forest Policy and Coordination

Division. "Policies Affecting Forest Land Use and Forest Products Markets." By Hijaba Ykhanbai. UNECE, 24 Oct. 2005. Web. 21 Nov. 2012.

Mongolia. Ministry of Nature and Environment (MNE). "Mongolia's National Capacity Self-Assessment for Global Environmental Management and Action Plan." By A. Enkhbat, B. Munkhzul, D. Dagvadorj, B. Dorjgotov, and N. Oyundari. Global Environment Facility, n.d. Web. 21 Nov. 2012.

"Mongolia: State of the Environment 2002." Regional Resource Centre for Asia and the Pacific (RRCAP). UNEP, 2002. Web. 20 Nov. 2012.

Mühlenberg, M., T. Batkhishig, Ts. Dashzeveg, L. Drößler, B. Neusel, and J. Tsogtbaatar. *Lessons From Tree Planting Initiatives in Mongolia*. Mongolia Discussion Papers, East Asia and Pacific Environment and Social Development Department. Washington, D.C.: World Bank. 2006.

Public Affairs Office. "Law School Conference Will Seek to Throw Legal Lifeline to Drowning Island Nations." Columbia Law School. N.p., 2 Aug. 2010. Web. 30 Nov. 2012.

<http://www.law.columbia.edu/media_inquiries/news_events/2010/August2010/drowningnations>.

Selenge Aimag Community Member. Personal interview. 14 Nov. 2012.

Selenge Aimag Ranger. Personal interview. 12 Nov. 2012.

Selenge Aimag Teacher 1. Personal interview. 16 Nov. 2012.

Selenge Aimag Teacher 2. Personal interview. 16 Nov. 2012.

Selenge Aimag Teacher 3. Personal interview. 15 Nov. 2012.

- Selenge Aimag Sea buckthorn Farmer 1. Personal interview. 14 Nov. 2012.
- Selenge Aimag Sea buckthorn Farmer 2. Personal interview. 14 Nov. 2012.
- Selenge Province. Selenge Province. Sukhbaatar City: Selenge Province, n.d.
Print.
- A Report on Legal and Illegal Timber Trade of Mongolia.* Rep. N.p.: WWF
Mongolia Programme Office, 2002. Print.
- Rossabi, Morris. *Modern Mongolia: From Khans to Commissars to Capitalists.*
Berkeley: University of California, 2005. Print.
- Sarangerel. *Riding Windhorses: A Journey into the Heart of Mongolian
Shamanism.* Rochester, VT: Destiny, 2000. Print.
- Shandra, John M. "Economic Dependency, Repression, and Deforestation: A
Quantitative, Cross-National Analysis." *Sociological Inquiry* 77.4 (2007):
543-71. Wiley Online Library. Web. 26 Nov. 2012.
- The State Great Hural of Mongolia. "Law of Mongolia on Forestry." May 17,
2007.
- Tsogtbaatar, J. "Forest Policy Development in Mongolia." Geoecology Institute,
Mongolian Academy Sciences, 16 July 2002. Web. 21 Nov. 2012.
- Ykhanbai, Hijaba. *Mongolia Forestry Outlook Study.* Working paper no.
APFSOS II/ WP/ 2009/ 21. Bangkok: n.p., 2010. Food and Agriculture
Organization of the United Nations. Web. 21 Nov. 2012.