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Preserving the Past and Preparing for the Future in Mongolia

Mongolia, a country full of diverse hardships, must work to preserve the culture of the past while finding innovative ways to protect precious resources for the future. Mongolia is landlocked between China and Russia and is slightly smaller than the state of Alaska. The area of land that is usable is relatively low, causing the depletion of vital natural resources in areas that are able to provide the necessary supplies for Mongolian people. Mongolia's severe climate has also caused a great stress on the environment. The hot summers, harsh winters, and low rainfall, combined with the amount of human activity, have created many environmental problems. Nomads travel the countryside with their families and depend on animal husbandry or herd livestock to make a living. Their way of life is being threatened every day with the decline of the environmental status of Mongolia. The nomads rely on valuable natural resources for their way of life; however, with the increased rate of urbanization at 1.9 percent ("CIA World Factbook"), the nomads' way of life is being forgotten. Rural life has become much harder over the years due to a decreasing amount of usable land as a result of desertification, and without rural life, Mongolia's economy and culture as a whole will collapse. Mongolia's economy greatly relies on agriculture created from the nomadic lifestyle; therefore, it is necessary to have a system that replaces lost resources and raises awareness to combat these and other environmental problems to ensure future growth in Mongolia.

Mongolia's rural families face much adversity including poverty, lack of education, and poor healthcare. Rural population makes up thirty-eight percent of total population meaning over 1,200,000 Mongolians live in the rural environment ("CIA World Factbook"). The typical Mongolian family is comprised of approximately four to six children and often has a woman as the head of the household. Rural families with women as the head are more likely to be poor. Of the 55,000 managed by women in 2002, more than fifty percent of those households were below the poverty line ("IFAD"). Rural families support themselves by herding livestock. The different kinds of livestock include sheep, cattle, yak, camels, goats, and horses. Most rural Mongolians rely on their livestock to provide meat, milk, and fur for their families; however, many families have less than the subsistence amount of livestock necessary to survive. A herder needs approximately ten head of cattle or seventy sheep for long term herding. The twenty percent of families that possess less than that amount ("IFAD"), particularly those headed by women, suffer every day as they try to make ends meet. Norman Borlaug once said, "The destiny of world civilization depends upon providing a decent standard of living for all mankind." This statement is especially true for Mongolia.

Rural Mongolians face hardships everyday when trying to provide for their families. Even those nomadic families, with the appropriate amount of livestock to survive, have their livelihoods threatened by the environment and diseases that could easily wipe out their herd. To help nomads achieve a better livelihood, Mongolia is attempting to reach a Millennium Development Goal to develop a global partnership for development. This is being done by distributing microfinancing loans to over 39,389 people. This allows nomads to increase and diversify their herd, thus increasing the amount of money they are able to make. In fact, ninety-six percent of sub-borrowers from the Mirco-finance Development Fund report an improvement in livelihood as a result of the loans ("The World Bank"). Despite their formidable lifestyle, nomadic life has been passed down from generation to generation and remains the predominant way of life for rural Mongolian's. The number of herders was reduced by half between the

years of 1900 and 2000 (“IFAD”). If this trend continues, Mongolia will be losing a vital aspect of the country’s culture.

Additionally, the education that would provide a way to help nomads in Mongolia better their life is often not a priority. Education in Mongolia starts at age seven and lasts until age seventeen. Rural Mongolian nomads move with their herds anywhere from two to four times per year. As a result of this, many rural children are not within a reasonable distance of a school. In fact, over twenty percent of students drop out before graduation due to the distance from their home to school (Sedgwick), of those, many are males who drop out to help their families herd. On the other hand, those who do attend school receive a quality education that has led to ninety-seven percent literacy rate in the country (“CIA World Factbook”). Working to better the educational state in Mongolia is The World Food Bank, who has helped implement The Sustainable Livelihoods Project II in Mongolia. This project has aided in Mongolia’s steps to reaching their Millennium Development Goals. One MDG for Mongolia is to achieve universal primary education for all girls and boys. The Sustainable Livelihoods Project II has led to an increase of children staying in dormitories by 169 percent. Children staying in dormitories are particularly important to nomads whose frequent travel can limit a child’s access to school. Also, the kindergarten enrollment rate is up sixty-nine percent (“World Bank”). As more of an emphasis is put on education, it will be possible for Mongolia to grow in many aspects as a country.

In addition to a lack of education, the health care system is failing to provide completely for all Mongolians. Even though Mongolia has a well staffed health care system with 3.9 physicians serving 1000 people (Manaseki), it does not fully provide for rural Mongolians. The health care system has transitioned in the last twenty years from a central system of health care to a family doctor system, where each family doctor would provide healthcare for 200-300 families. These family doctors are trained as general physicians, pediatricians, and gynecologists; however, with such a general training, sufficient knowledge in all areas is not ample to allow for proper treatment. Even more concerning is the limited growth of hospitals and other health care facilities in rural areas due to the lack of incentive for healthcare workers to come to the countryside where there is little room for career growth. Furthermore, the hospitals that are located in rural areas are challenged by drug shortages, scarcity of raw materials, and operating equipment. Due to this alarming situation, the World Bank has been working to assist Mongolians by helping to build and equip 1,088 hospitals to make healthcare more available to rural Mongolians (“The World Bank”). This has helped many rural families gain access to proper treatment, yet there still remains a shortage of hospitals and care, meaning the effort to build and expand the healthcare field must continue.

In order for the environmental status in Mongolia to change, drastic measures must be taken to prevent further damage to the environment since natural resource management has been one of the primary problems for Mongolia. Mongolia’s extreme climate presents difficulties in agriculture. Firstly, the climate has many extremes. The summers are extremely hot, and the winters are excessively cold. This climate, combined with low rainfall throughout the year, makes it tremendously difficult to grow crops successfully. Second, the Gobi desert is expanding at an alarming rate. Desertification is defined by the International Convention to Combat Desertification as land degradation in arid, semi-arid, and dry sub-humid areas resulting from various factors, including climatic variation and human activities (UN). This process of desertification threatens ninety percent of land in Mongolia (Batjargal). Desertification will continue to become an even greater problem if measures are not taken to combat it. The factors causing desertification include over grazing, deforestation, mining, and a lack of a proper roadway system. The grasslands have been severely degraded due to over 42 million livestock (USDA) grazing on the grassland in Mongolia. The overgrazing has resulted in major soil erosion over the years, making desertification even more prevalent in grazing areas. Desertification will continue to gradually lead to less grazing land for herders, who will then overgraze on remaining areas. This cycle will continue until something changes to reverse desertification, which means, stopping overgrazing.

Mongolia also relies on mining as a way of life; however, mining large areas of land to access gold and coal has led to land degradation through such processes as open pit mining and strip mining. These processes leave areas of land severely tarnished. A very small amount of the land used for mining has been restored to its previous condition or even acceptable condition. Furthermore, deforestation can also lead to desertification. The forests have also been rapidly degraded with clear cutting. Thirty-six to eighty percent of the total harvest of forest is illegal ("The World Bank"). Along with exposing soil to wind and precipitation, deforestation causes a shortage of wood for those in urban Mongolia who use wood to heat their homes. As well as deforestation, the absence of an established roadway system leads to excessive travel on land. These human activities together have caused an extreme amount of soil erosion.

Another significant example of land degradation in Mongolia is crop cultivation. Even though Mongolia's climate is severe, crop cultivation still occurs. Only 0.76 percent of land is classified as arable, and there are no permanent crops ("CIA World Factbook"). Crops grown in the brief one hundred day growing season include primarily wheat, barley, oats, and other cereals. Of the arable land that is used, much of it does not have trees or other wind barriers. With that in mind, the spring tilling season overlaps the part of year when the Gobi Desert experiences fierce wind. This combination causes the exposed land that is being used for cultivation to be literally blown away. An average of thirty-five to fifty tons of soil has been lost in the past thirty years (Batjargal). With each year, more and more of the precious soil is lost.

Lack of governmental control on environmental resources has caused these problems to grow and escalate. The government recently activated a series of laws. These laws would expand its system of nature reserves, start investing in energy-efficient technologies and pollution abatement schemes, and promote environmental awareness. However, without the man power and means, these laws will never be able to become enforced in Mongolia. The Ministry of Nature has only 4,000 employees ("The World Bank"). With these current numbers, the ministry's existing implementation, monitoring, and enforcement responsibilities cannot be met due to the insufficient financial and human capacity. Current Mongolian agriculture practices demand a change or the future of Mongolia will be at risk. A foundation for change has already been established in Mongolia's Ministry of Nature; unfortunately, the time and money invested in this program, thus far, needs to be expanded if the Ministry is to fulfill the country's needs.

The key for expanding the agricultural practices lie within Mongolia's nomadic people who play a vital role in the economy and everyday life. As urbanization progresses in Mongolia, the amount of rural influence continues to diminish. The nomadic life is a culture, not just a job. The skills needed to be a successful nomad have been passed down from generation to generation. Past generations have acquired vast knowledge regarding the geography of the land. As more of the younger generation is drawn to Ulaanbaatar, Mongolia's capital, with hope of a better life, the nomadic life is threatened. Without the transfer of this essential culture in Mongolia, the entire nation will suffer. Nomads' lives are full of hardships presented by the various environmental problems. Since nomads feel the pain of these problems, it is crucial to involve them.

One of the most dire environmental problems that needs to be addressed is overgrazing which is the main contributing factor to desertification. Preventing overgrazing would require an efficient restoration of native plants and trees to land that has been previously degraded due to the climate and human. The most beneficial time to do this would be in the one hundred day growing season. Reforestation would help to create wind breaks for cultivated land; it would fixate soil and reduce overall soil erosion. Also concentrating these efforts in areas that are at the most risk for land degradation would help to stop the spread of desertification. By planting in the growing season, it would provide the most nutrients and best chance for the trees to grow. Planting trees would also help to increase carbon sequestration. Carbon sequestration is removing carbon from the atmosphere by such methods as the planting of trees or pumping carbon dioxide into underground chambers. Carbon sequestration is a primary way to remove

carbon from the air which would decrease the amount of air pollution. This strategy of carbon sequestration would help Mongolia achieve the Millennium Development Goal of ensuring environmental sustainability. One of the targets of this goal is focused on reducing air pollution. Since planting trees would be beneficial to the soil and less costly than underground chambers, planting trees would be a more efficient plan. Trees would supply a natural buffer around cultivated areas to assist in conserving soil. Other plants that would help to support ecological resilience would be legumes. Legumes remove nitrogen from the air and provide rich nutrients to the soil. Planting native trees and plants may seem like a relatively simple solution to a complex problem, but the benefits of this solution would present the necessary resolution to the environmental struggles of soil erosion and overall land degradation.

The Ministry of Nature would be essential in providing the seeds and the other supplies necessary for planting, but the nomads who live in the countryside would play a major part as well. Working with the nomads would not only help to improve the environment, but also help to raise awareness about overgrazing and its harmful effects. Educating nomads about legumes and other helpful nutrients would allow them to apply this to where they graze. An increase in education about the environmental struggles would lead to greater support for a move to more environmentally friendly agricultural practices. While planting trees and other native plants would help to encourage ecological resilience, a more long term solution needs to be implemented.

A more permanent solution to desertification would be rotational grazing. Rotational grazing is when livestock grazes on a number of acres for a certain amount of time, and then the livestock is moved to other land to graze and the cycle continues. This allows for healthier and hardier plants and grasses to grow because their root systems have a better chance to develop. With a combination of planting native plants during the growing season and rotation grazing, the plants would be able to develop a stronger root system which allows for better moisture retention, particularly essential in Mongolia's low rainfall climate.

Rotational grazing also helps to improve livestock feeding habits. When focusing animals on smaller grazing acres, it encourages livestock to become more efficient in eating, meaning the livestock relies less on choosing what to consume and forces them to eat what is available to them. This would extend the amount of feed in each pasture, leading to a decrease in soil erosion over the years. Although rotational grazing would help in many ways, it is not feasible or reasonable to apply it to all of Mongolia due to the free grazing that occurs there today. This is why certain areas of Mongolia should be designated by the government for rotational grazing. By designating only certain areas, it would still allow for free grazing to support the nomadic life, but it would start the transition to the more environmentally efficient process of rotational grazing. Overall, rotation grazing would dramatically help to provide a more effective way to graze livestock and will strengthen the environmental state.

In conclusion, Mongolia is a country that still embraces ideas from the past, such as, the nomadic life, but to have a successful future; modifications must be made in order to save precious resources for future generations. Mongolia's severe climate creates many difficulties for the people who live there, especially those in rural areas. These struggles include poverty, lack of education, and poor healthcare; however, striving to achieve the Millennium Development Goals has led to great steps being taken to assist those in need. Supplying today's Mongolians with the necessities of life is a priority. The future of the country must also be taken into consideration with the current environmental problems. Overgrazing, deforestation, and desertification have all become major problems that, if left unattended, will grow and eventually devastate the environment and lifestyle of all Mongolians. Furthermore, planting native trees and plants would assist with restoration of the environment by providing a way to reduce soil erosion and land degradation caused by overgrazing. A more long term solution would be designating certain land areas for rotational grazing. This strategy would help to promote a more efficient way for livestock to graze while taking less of a toll on the environment. Rotational grazing would allow for stronger plants, a

reduced amount of overgrazing, and a decrease in land degradation while still bolstering nomadic lifestyle. Working side by side with nomadic people to preserve the land nomads rely on every day would also help to raise awareness and educate many people on the environmental status of Mongolia. The amount of nomads has greatly decreased in recent years, and if this continues the nomadic lifestyle could potentially and tragically be forgotten. This must be prevented by providing nomads with proper environment to continue their herding. With the Ministry of Nature and other nongovernmental groups, such as the World Bank, the environment in Mongolia can be returned to its original state. In conclusion, through various agricultural practices, the Mongolian environment can be restored to a condition in which nomads can continue to pass on their culture to generations to come.

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