Final Project Milestone IV:

Japan and Bolivia Eco-Conflict Vulnerabilities

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Milestone I: Country Selection, Outline, Abstract, & Sources

Country Selection

For the purpose of this project, an in-depth examination of eco-conflict vulnerability and risk in four critical areas—population, poverty, resources, and the environment—will be conducted in two distinct nations: Japan and Bolivia. The selection of these countries is underpinned by careful consideration and academic interest.

Japan, with its renowned culture and unique demographic challenges, has been chosen as one of the focal points for this study. Japan's intricate population dynamics, characterized by an aging society and declining birth rates, present a compelling case for exploration. This choice is driven by a genuine curiosity to delve deeper into the socio-economic and environmental intricacies of a nation that has long held my fascination.

Bolivia, while less known to the researcher, holds significance due to personal connections. The presence of a friend from Bolivia, whose cultural heritage is rooted in this nation, has drawn attention to this South American country. As a means of appreciating and supporting their cultural background, Bolivia has been included as a study subject. This offers an opportunity to not only gain insights into the eco-conflict vulnerabilities of Bolivia but also to contribute to a deeper understanding of its cultural heritage.

Abstract

This project aims to conduct a comprehensive environmental risk assessment in two distinct nations: Japan and Bolivia. The assessment primarily focuses on evaluating eco-conflict vulnerabilities across four key dimensions: population, poverty, resources, and the environment. The overarching objective is to gain insights into the potential risks that may exacerbate environmental conflicts in these two countries.

In the first milestone, we provide a rationale for the selection of Japan and Bolivia as our case study nations. These countries, though geographically distant and culturally diverse, offer a unique perspective on environmental risk due to their varying socio-economic and environmental contexts. We delve into each of the four risk categories, offering a synopsis of the existing conditions and an analysis of potential eco-conflict vulnerabilities. Importantly, this assessment is grounded in a rigorous examination of peer-reviewed sources, with a minimum of two sources per risk category, all adhering to Chicago Style format for citations and references.

As we progress through the subsequent milestones, we will conduct a comparative analysis of these risk categories, explore how each country responds to environmental risks, and culminate in a final environmental risk assessment. This final assessment will forecast the future state of the environment and eco-conflict potential, offering recommendations for risk mitigation and sustainable environmental governance.

Through this comprehensive evaluation, we aim to shed light on the intricate interplay between population dynamics, poverty, resource management, and environmental conditions in Japan and Bolivia. Ultimately, our research seeks to inform policymakers, NGOs, and citizens about the critical challenges and opportunities for building a more sustainable and resilient future in these regions.

Sources

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b) Smith, B. (2015, June 16). Japan: Environmental Issues, Policies and Clean Technology. Retrieved from azocleantech.com: https://www.azocleantech.com/article.aspx?ArticleID=539

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b) Kent, M. (2010, August 20). In Bolivia, Slow Fertility Decline and Some Improvements in Health Indicators. Retrieved from www.prb.org: https://www.prb.org/resources/in-bolivia-slow-fertility-decline-and-some-improvements-in-health-indicators/

2) Poverty

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b) Lazarte Alcala, N. R. (2010, December). Economic analysis of subsistence farmers in Bolivia; Three essays. Retrieved from shareok.org: https://shareok.org/handle/11244/6718

3) Resources

a) Kohl, B., & Farthing, L. (2012, May). Material constraints to popular imaginaries: The extractive economy and resource nationalism in Bolivia. Retrieved from www.sciencedirect.com: https://www.sciencedirect.com/science/article/abs/pii/S0962629812000212

b) Miranda, M., Bento, A., & Aguilar, A. M. (2020, March 11). Malnutrition in all its forms and socioeconomic status in Bolivia. doi:DOI: 10.1017/S1368980019003896

4) The Environment

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Outline

Milestone 1

Country Selection

1. Japan and Bolivia.
2. Rationale for choosing Japan and Bolivia
3. Brief overview of the two countries
4. Importance of studying eco-conflict vulnerability in these regions

Abstract

1) A brief overview of what the paper aims to learn.

Outline

2) Give a breakdown of the structure of the project.

Sources

3) List the Peer-reviewed sources for each section for each country

Milestone 2: Introduction, Literature Review, and Comparative Analysis

Introduction

1) Background information on the project
2) Purpose of the assignment
3) Significance of studying environmental risk in Japan and Bolivia

Literature Review

1) Analysis of existing literature on eco-conflict vulnerabilities
2) Identifying research gaps and available sources

Comparative Analysis

1) Identify specific aspects to compare between Japan and Bolivia.

Milestone 3: Eco-Conflict Vulnerability Assessment

Eco-Conflict Vulnerability Assessment

1) Population
    a) Present population statistics and trends
    b) Identification of population-related risks
    c) Analysis of potential eco-conflict vulnerabilities
2) Poverty
    a) Poverty levels and distribution
    b) Identification of poverty-related risks
    c) Analysis of potential eco-conflict vulnerabilities
3) Resources
    a) Description of available resources
    b) Identification of resource-related risks

c) Analysis of potential eco-conflict vulnerabilities

4) Environment

a) Overview of the environmental conditions

b) Identification of environmental degradation risks

c) Analysis of potential eco-conflict vulnerabilities

Milestone 4: Final Environmental Risk Assessment

Final Environmental Risk Assessment

Table

1) Presentation of gathered evidence on risk levels

Ranking

2) Ranking of risk levels (mild to high)

Actions for Improvement

3) Recommendations for risk mitigation

Conclusion

4) Reflection on ecological conflict, sustainability, and the role of citizens

Milestone 5: Share Your Research

Research

1) Upload the project to your online portfolio

2) Share research findings with peers and the class

Milestone II: Introduction, Literature Review, and Comparative Analysis

Introduction

This environmental risk assessment aims to evaluate and compare the eco-conflict vulnerabilities of Japan and Bolivia. As highlighted in Milestone I, these two nations offer an

intriguing case study due to their differing socio-economic and geographic contexts. Despite the vastly different situations, they both face potential risks from population changes, poverty, resource management issues, and environmental degradation.

Through a comprehensive examination of existing literature and in-country conditions across four key dimensions of analysis, this research seeks to identify areas of vulnerability that could aggravate environmental conflicts in Japan and Bolivia. By comparing how each country may be impacted by risks related to these four factors, this study also hopes to explore opportunities for building resilience and promoting sustainable development. Through a rigorous, evidence-based study of this nature, the goal of this project is to provide insightful and useful information for policymakers, organizations, and citizens invested in long-term environmental stewardship and security in these two nations of choice.

Literature Review

To understand the existing research on eco-conflict vulnerabilities in Japan and Bolivia, a review was conducted of the peer-reviewed sources available for the topic. For Japan, key themes emerged regarding population dynamics, poverty levels, resource dependence, and environmental policy approaches. Several sources examined Japan's declining and aging population trends, the risk of poverty within the nation, their struggle with resources, and the country’s environmental dangers in depth. One of the sources that discussed population was Fujiwara et al. (2022). This paper conducted a sensitivity analysis of population changes under varying fertility and migration scenarios and rated cities with a fertility rate then recommends increasing migration to these higher-rated cities like Okinawa (Fujiwara, et al., 2022). Then there was the investigation conducted by Joel Stewart in 2007. This article also investigated the drivers behind Japan's population decline. Both of these studies provide critical context on the social and economic

impacts of demographic shifts which is why they were selected. There is extensive research, articles, and even videos and new reports covering the topic of the dangerous decline in Japan's population. This area of literature is fruitful.

Then there is the subject of poverty in Japan, while the problem is relatively low overall, the impact disproportionately affects certain groups. There is also an extensive amount of literature covering the issues of poverty within the Japanese culture. With so many sources to choose from, this paper will focus on two it found to clarify the issues. One of the sources was written by Saito et al. in 2019, and the other was authored by Haruka Ueda in 2023. Both of these articles analyzed poverty through the lenses of relative deprivation and multidimensional food insecurity among vulnerable populations like the elderly and single mothers, two of the groups that are disproportionately impacted by poverty.

Next is the topic of natural resources in Japan. This subject is also extensively covered by research and reports. Japan is an ancient and popular country, and this greatly impacts the availability of research material. There are even different case studies conducted in different parts of the nation. However, to narrow down the vast quantity of data, this paper will focus on two articles that delve into the island nation and discuss the few natural resources it contains. It is no secret that Japan has relied heavily on imported materials to fuel industrialization. It was in fact this mass industrialization that sparked a few of the other issues discussed. The two articles that will be covered extensively are a document written by Morck and Nakamura in 2008 and their other article written in 2017. Both of their reports trace Japan's development pathway financed through natural resource extraction and evaluated the long-term effects this resource depletion will have on the nation.

Regarding environmental policies, the literature available on this subject matter was harder to come by if you wanted to focus on a broader area. However, like the other subjects, there is an extensive number of books, articles, and reports conducted on the environmental situation that Japan faces. Many of the sources talk about the Fukushima disaster that took place in 2011. However, two of the articles that will be discussed are the OECD Environmental performance review of Japan that was conducted in 2001, and the article written by Brett Smith in 2015. Both articles outlined Japan's strategies and clean technology investments over time. Other articles may be used later to better understand the ongoing sustainability challenges faced by Japan.

For Bolivia, the literature was a lot harder to find in each category. There were some subjects that had more sources than others, like the environment and resources subjects. However, after looking a bit harder, two articles from each subject matter were located. The ones discussing population were the most difficult to locate. They were found, more accurately stumbled across, during the environmental search. Two they were most helpful articles were *Mobilizing Bolivia's Displaced* written by Fabricant in 2012, and *In Bolivia, Slow Fertility Decline and Some Improvements in Health Indicators* written in 2010 by Kent. Both articles highlight issues of the indigenous populations, rural livelihoods, extractive industries, and hazards that they face. They provide demographic profiles including fertility trends among indigenous groups and the issue with the lack of access to birth control.

The next topic in Bolivia researched was poverty. This subject was not as difficult as population to find sources that discuss the topic adequately, but it was not as easy as the environment. The articles were narrowed down to *Income Inequality in Latin America* and *Economic analysis of subsistence farmers in Bolivia.* The first article was written by Amarante in 2016 and the second by Lazarte Alcala 2010. These articles discuss how poverty has

disproportionately impacted rural subsistence farmers and indigenous people. Amarante and Lazarte Alcala also both dissected poverty levels and economic vulnerabilities in a way that is understandable and easy to follow.

Bolivia's next topic was natural resource in the nation. This subject was one of the easier topics to find sources on. I discovered that natural resources, while they have the potential to boost GDP, have also spurred conflicts. Out of the many articles located, two were selected for their information, readability, and the comprehensive approach they use. The two articles in question are: *Material constraints to popular imaginaries* written by Kohl and Farthing in 2012 and *Malnutrition in all its forms and socioeconomic status in Bolivia* written by Miranda et al. in 2020. Both articles analyzed resource nationalism, malnutrition linked to extractive industries, and socio-economic disparities.

The last section covered is environmental hazards in Bolivia. This is one of the most fruitful subjects for sources. It was difficult to narrow down the list given the number of available sources. The articles that were chosen are *Evidence-Based Integrated Analysis of Environmental Hazards in Southern Bolivia* written by Cantini et al. written in 2019 and the second article is *Natural Resources Curse in the Long Run? Bolivia, Chile, and Peru in the Nordic Countries' Mirror* written by Ducoing et al. written in 2018. Both articles talk about the environmental dangers that also threaten livelihoods. Cantini et al. and Ducoing et al. all document integrated risks and the potential for a "resource curse" exacerbating long-term environmental challenges. Due to the number of available resources, for extra information an article written by Wilkins in 2008 titled *The Search for a Viable Alternative to Slash and Burn Agriculture in the Lowland Plains of Bolivia,* which provided additionally explored agricultural alternatives and pointed out a known agriculture method that causes environmental degradation.

After covering all this literature, it establishes a firm foundation for understanding each country's context and identifying research gaps to address in the upcoming vulnerability assessment.

Comparative Analysis

To discern similarities and differences in eco-conflict vulnerabilities between Japan and Bolivia, a comparative analysis was conducted across the four dimensions based on the reviewed literature, and these are the findings.

Regarding population trends, both countries face distinct demographic challenges within their borders. While Japan has an aging population and low birth rates (Fujiwara et al., 2022; Stewart, 2007), Bolivia exhibits high birth rates, but also high rates of infant deaths and maternal mortality rates (Fabricant, 2012; Kent, 2010). Each of these issues are having a dramatic impact on the nation in question, despite them being on the opposite sides of the population crisis. Whereas Japan is having trouble increasing their birth rate and face an aging population, Bolivia is struggling to decrease their birthrate and life expectancy. Japan currently has over 21% of their population over the age of 65 and it is projected to rise to 35.7% by 2050 (Fujiwara, et al., 2022) and a birth rate of only 1.3 which is way below replacement levels, while Bolivia has an incredibly small elderly population with just around 4% but 37% under the age of 15 and a birthrate of 3.5. Both countries face challenges brought about by these numbers. Japan has issues with what they have termed "parasite singles" (Stewart, 2007) and a lost generation unable to enter the workforce (Stewart, 2007), while Bolivia struggles with the inability to have widespread access to birth control , family planning, adequate healthcare, and trained medical staff to deliver babies. Parasite singles is a term coined by Masahiro Yamada to describe women of child baring age that live with their parents rent free while they work (Stewart, 2007). They are unwilling to marry and have kids

because they would lose their high quality of life. This on top of the issue of the “lost generation” has caused fixing the population crisis (Stewart, 2007). Per the culture of Japan, to have an option to date or find a wife, a man has to have a job and a way to support a family, or he is considered to not be masculine enough to marry. In Bolivia, on the other hand, their population crisis is loosely linked to poverty as well (Fabricant, 2012). However, it is due to a lack of resources and access to medical care (Kent, 2010).

The next issue looked at was poverty. It was found that poverty levels and distributions also vary considerably between both nations. Poverty disproportionately impacts the elderly and single mothers in Japan ((Saito, Kondo, Oshio, Tabuchi, & Kondo, 2019); (Ueda, 2023)) but rural subsistence farmers and indigenous communities in Bolivia ((Amarante, 2016); (Lazarte Alcala, 2010)). This suggests that different at-risk groups and livelihood vulnerabilities exist in both nations and shows that both nations still face poverty despite the two nations being classified into two different economically developed groups. In Japan, the article by Saito et al. the authors talk about deprivation that impacts many aspects of the elderly individual’s life (Saito, Kondo, Oshio, Tabuchi, & Kondo, 2019), and Ueda talks about how poverty (Ueda, 2023), among other issues, leads to food deprivation among single mothers that can lead to lifelong food and health issues.

Then the natural resources issue was looked at to compare Japan and Bolivia. It was found that natural resource dependence shows similarities and differences between the two countries as well. Both nations rely heavily on extractive industries for economic growth ((Morck & Nakamura, 2008), (Morck & Nakamura, 2017); (Kohl & Farthing, 2012)). However, Bolivia has experienced greater resource nationalism and conflicts linked to malnutrition (Miranda, Bento, & Aguilar, 2020) than Japan has.

Environmental issues and policies were the next issues tackled to discover the similarities or differences between Japan and Bolivia. It was discovered that both nations struggle with certain environmental problems. Despite Bolivia being roughly 2.9 times larger than Japan, both fight the problem of pollution. Especially water pollution (OECD Environment Program, 2001) (Cantini, et al., 2019). However, the approach each nation takes regarding environmental policies diverge despite their shared challenges (Ducoing, et al., 2018); (Smith, 2015). Japan has invested heavily in green technology to reduce their CO2 emissions (OECD, 2001; Smith, 2015) while Bolivia faces more severe integrated hazards like deforestation and outdated agriculture methods (Cantini et al., 2019; Ducoing et al., 2018). In Bolivia Wilkins talks about how agricultural alternatives remain a key concern for the county (Wilkins, 2008), as well as a lack of grazing land for livestock. Whereas Japan struggles with pollution and waste management (Smith, 2015).

After comparing both nations for this comparative overview, and reviewing all the literature, it is evident that the nations share some eco-conflict risk factors. However, they also have unique population, poverty, resource, and environmental dynamics warranting individualized vulnerability assessments and recommendations.

Milestone III: Vulnerability Assessment and Policy Responses

Vulnerability Assessment

Japan and Bolivia: A Cross-Continental Environmental Risk Examination

In the wake of comparative analysis, it is crucial to scrutinize the vulnerabilities of Japan and Bolivia that may engender eco-conflicts. This section will take into account their unique demographic, economic, and environmental matrices to determine any vulnerabilities starting with Japan and then moving to Bolivia.

Japan's Vulnerabilities:

Japan, as an island nation with a legacy of rapid modernization and economic miracle, the small nation of Japan is now confronting the repercussions of its rapid success. Several vulnerabilities are evident and pose significant risks to the future sustainability and health of the nation. These vulnerabilities will be broken down into sections to cover the areas of interest this project is focused on starting with the population crisis.

Demographic Transition and Workforce Shortage:

Aging Population:

Japan's demographic landscape is characterized by one of the world's highest proportions of elderly citizens. In 2007, the population of Japan aged 65+ was at 21 percent and is projected to rise to 35.7% by 2050 (Stewart, 2007). This demographic trend is causing a host of socio-economic challenges. One of the challenges this aged population causes is the pressure it puts on healthcare and pension systems. This pressure is intensifying as more and more as the percentage increases and is also leading to a shrinking workforce that must support the growing number of retirees. In fact, in 2005, there were approximately 3.3 working people supporting each elderly person, but by 2055 that is projected to fall to only 1.3 working people in support of one elderly individual (Stewart, 2007). This is a dramatic decline and puts a major strain on Japan's social security program. Unfortunately, this fiscal burden of sustaining the elderly that is escalating, is raising concerns about the viability of the current social security systems and the risk of burgeoning fiscal deficits in the coming years. This impact on the social welfare structures is profound, as fewer workers contribute to pension and healthcare funds, it jeopardizes the programs' sustainability. In addition to this, the dramatic imbalance between the active workforce and the

retirees is potentially leading to a contraction in consumer markets and a decrease in domestic economic activities. These changes are increasing the economic hardships of the nation.

Declining Birthrate:

Compounding the aging population issue in Japan is its plummeting birthrate. Now, in addition to the large percentage of elderly individuals, there are not enough babies being born. Japan's replacement-level fertility (RLF) is 2.07 but has been way below this requirement since 1974 (Fujiwara, et al., 2022). Tragically, Japan's total fertility rate (TFR) was just 1.36 in 2019, which heralds profound implications for the country (Fujiwara, et al., 2022). Having a TFR that is far below the RLF means as the population ages and dies, there will not be enough babies being born to maintain the population. It is projected that Japan's population will shrink below 100 million by 2050 (Stewart, 2007). This is a massive drop, approximately a 25% decline, considering the population peaked in 2006 at 128 million (Stewart, 2007).

This huge reduction in population is exasperating the already weakened workforce. Japan's government is anticipating a looming workforce shortage that is feared to stifle their economic growth and undermine the stability of industries. Their aging population is leaving the workforce, but the low birthrate and declining population mean not enough workers are entering the workforce to fill the vacancies. With fewer youths entering the workforce, there is a concern that innovation and entrepreneurship could also suffer. If this happens it could potentially lead to Japan losing its competitive edge in the global market.

Resource Scarcity and Energy Dependence:

Another vulnerability Japan has is its limited natural resources. Due to this fact, they must rely heavily on imports for energy and raw materials. This places Japan in a precarious position regarding global market fluctuations and geopolitical tensions. Before the major earthquake in

2011, Japan was 20.2 percent energy self-sufficient. After the earthquake, that percentage dropped dramatically to 6.7 and then reached its lowest point in 2014 as it continued to drop down to 6.3 (METI, 2022). Since then, it has slowly recovered and now sits at 12.1 percent and has held steady since it reached that point in 2019 (METI, 2022).

In addition to the issue of limited natural resources, Japan also has to overcome the problem of environmental degradation. This problem has arisen due to urbanization and the industrial activities of companies and manufacturers. These challenges are due to a large population within a small island and are imposing substantial pressure on Japan's limited arable land and contributing to pollution in multiple areas. The Environmental Performance Review of Japan delves into these issues and covers the lack of resources, greenhouse gas emissions, and pollution among other things (OECD Environment Program, 2001). It explains how Japan struggles with waste management and water pollution. Especially after the Fukushima accident in 2011 that was caused by the earthquake and tsunami, which caused water polluted with iodine-131 to leak into the ocean. This nuclear meltdown at a plant was the second-largest nuclear disaster since the Chornobyl accident in Russia in 1986 (https://www.britannica.com/event/Fukushima-accident). Despite these setbacks, Japan has committed to becoming carbon neutral, which means achieving net-zero greenhouse gas emissions, by 2050 (METI, 2022). This commitment has pushed Japan to start to move towards renewable resources for their energy needs. However, due to the lack of available resources needed to make batteries or solar panels, this move has increased Japan’s dependence on imports.

Socio-economic Disparities:

The next topic to be addressed is that of poverty. Despite Japan being a global power and the major economic prosperity since the end of World War II, Japan still struggles with poverty

and socio-economic disparities among certain classes of citizens. One of the largest contributors to this economic disadvantage of some people was the economic bubble that popped in 1989. It started an unforeseeable chain of events that has brought about the current population crisis. The structure of Japan's culture is to groom children to succeed through education, college, and directly after graduating to move into a lifelong career. Businesses only recruit college graduates. This means that poor grades, or a failure to impress teachers and earn a college recommendation, can destroy any hope of earning a job and the potential for marriage. Unemployment for a man is seen as a lack of masculinity due to the inability to support a family. Therefore, when the bubble popped, companies stopped hiring for nearly a decade. This brought about the "lost generation", which is a term that refers to the college graduates from 1991-2001 that were unable to secure a job. Therefore, they face a lifetime of working odd and end jobs and will never be able to obtain a career. This lost decade has contributed to the phenomenon called "Parasite Singles". The term "Parasite singles" was coined by Japanese sociologist Masahiro Yamada to describe unmarried women in their late 20s to early 30s who live with their parents (Stewart, 2007). This cultural phenomenon of "parasite singles" reflects deeper issues of gender inequality and societal expectations, potentially limiting population growth and economic progression.

Bolivia's Vulnerabilities:

Population and Health:

1. Unlike Japan, who is suffering from a TFR that is far below the RLF, Bolivia is in the opposite position. Their population struggles stem from their high fertility and high mortality rates. These devastating issues stretch healthcare systems to their breaking point and cause high dependency ratios that can hinder economic growth and further strain public resources. Despite the increased access to contraception, its widespread use has not been

achieved and only reached 35 percent of the population (Kent M. , 2010). This has left the total fertility rate (TFR) at 3.5 lifetime births per woman (Kent M. , 2010). This statistic is given in the article titled *In Bolivia, Slow Fertility Decline and Some Improvements in Health Indicators,* which was written in 2010. The article continues to explain how prenatal care and skilled birth attendance increased substantially from 2003 to 2008 and decreasing mortality levels, but disparities remain between the rich and poor and rural and urban populations (Kent M. , 2010). It is this healthcare disparity that contributes to the higher mortality rates. Also, the continued unmanaged population growth is leading to increased poverty and resource depletion for a government that is unequipped to handle it.

Economic Inequality and Poverty:

Poverty is a major issue in Bolivia, and it affects indigenous communities and subsistence farmers living in rural areas the most. The sad reality is that almost 80% of the population in rural areas are poor, compared to 53% in urban areas (Lazarte Alcala, 2010). Despite economic reforms and growth in Bolivia over the past 23 years, this poverty has not improved (Lazarte Alcala, 2010). Unfortunately, this rural poverty leads to the exploitation of natural resources and environmental degradation, as poor farmers resort to environmentally harmful agricultural techniques like the slash and burn method (Wilkins, 2008). Some farmers use this method to expand their land and increase crop production, even though it is unhealthy and unsustainable (Wilkins, 2008).

Resource Management and Environmental Policies:

Bolivia's approach to resource management and its environmental policies are critical in shaping the country's socio-economic and ecological landscape. Situated in the heart of South America, Bolivia possesses a wealth of natural resources, including vast reserves of minerals, gas, and fertile lands that are central to its economy and the livelihoods of its people (Kohl & Farthing,

2012). However, the management of these resources and the implications of environmental policies present both opportunities and challenges.

Resource Nationalism and Conflicts:

The ideology of resource nationalism has played a pivotal role in Bolivia's recent history. The government has taken control of key natural resources, such as hydrocarbons and minerals, to redirect the benefits from resource extraction towards national development and poverty reduction (Ducoing, et al., 2018). However, this policy has also led to some challenges. Firstly, nationalization efforts have sometimes clashed with foreign investors and companies, resulting in legal disputes that require diplomatic negotiation to maintain international investment flows while protecting national interests. Secondly, it has caused internal conflicts between the government, local communities, and indigenous groups over the control and distribution of resource revenues (Fabricant, 2012). These groups often demand greater autonomy and a larger share of the profits derived from the resources on their traditional lands. Lastly, regional tensions can arise when provinces with rich resource deposits seek a greater share of the fiscal pie, which can escalate into national disputes and threaten the unity and governance of the nation (Amarante, 2016).

Agricultural Practices:

Bolivia's agricultural practices have revealed a double-edged sword that sustains large segments of the population while also exerting pressure on the environment (Lazarte Alcala, 2010). Traditional agricultural practices, combined with a push towards agricultural expansion, have led to significant soil degradation (Cantini, et al., 2019). Overgrazing, deforestation, and the use of chemical fertilizers contribute to the loss of arable land, affecting long-term productivity and food security. The massive deforestation, driven by both agricultural expansion and illegal activities such as logging, is a major concern for the people of Bolivia and the world, resulting in the loss of

biodiversity and contributing to climate change. However, Bolivia has undertaken various initiatives, such as the promotion of sustainable land management practices and reforestation projects. The government also encourages the use of organic farming techniques and has implemented policies aimed at protecting and conserving its forest reserves (Wilkins, 2008). Balancing economic development with environmental conservation and sustainable resource management remains a complex task for Bolivia. To ensure equitable distribution of resource wealth while safeguarding the environment, the country needs to develop inclusive policies and innovative strategies and forge partnerships that honor both the well-being of its citizens and the integrity of its natural heritage (Fabricant, 2012).

Policy Responses

For Japan:

Policy Innovation with energy dependence

There is a push amongst the public and some policy makers to enact what is called a "Just Transition", which is "an energy transition, aiming to deploy the maximum amount of renewable energy in order to reduce reliance on energy imports…, increase energy security for Japan…also improve the living standards of its people" (Chapman, et al., 2023). The "Just Transition" has gained momentum, but only about 25% of Japan's population is aware of this movement. Even though the push for greener sustainable resources is growing, the availability and reliance on coal and gas is still needed to maintain Japan's energy requirements (Jackson, 2022). Japan has been investing in several carbon-based fuel projects in Southeast Asia and continues to champion coal development (Jackson, 2022).

Policy Innovation with population decline and workforce development:

Japan has been facing major problems with their population decline. They have previously enacted policies that focused on having children and giving birth. These policies have had little impact on the birthrates and the birthrate has dropped to 1.3 average per woman. They have recently changed their focus on raising children and helping them with the costs of childcare and other expenditures in the hopes that will make having a family to be less financially difficult, since the costs of living for raising children has become far too expensive for people to even consider.

For Bolivia:

Policy Innovation with energy dependence

The Bolivian government has taken great strides in helping their citizens in obtaining energy for their homes and raising their standard of living. “The government set the objective of achieving universal access to electricity by 2025 and established a program entitled Programa Electicidad para Vivir con Dignidad (PEVD, Electricity Program for Living with Dignity).” (The World Bank, 2020). They are dedicated to using green sustainable energy sources to replace non-renewable carbon-based energy sources.

Healthcare Accessibility and Family Planning Education:

Promote sustainable agricultural techniques and land-use planning to prevent deforestation and soil erosion. With the burning of Bolivia’s forest and rapid deforestation in Bolivia, the carbon emissions per person in Bolivia is over twice that of the United States and five times that of the global population (Andersen, Gonzales, & Malky, 2022). The main reason for these agricultural problems is the growing population, which has a birth rate of 3.5 per woman in Bolivia. This combined with the extreme poverty in Bolivia has caused a health crisis with the infant mortality rate to be as many as 50 infants per 1000 die in their first year. Bolivia is striving to reduce the

infant mortality rate and increase the standard of living for its citizens with its policy changes. They are implementing policies that will improve healthcare and family planning that will help to better control the rising population and provide for their needs (Kent M. , 2010).

Conclusion

In essence, the environmental risk vulnerabilities of Japan and Bolivia exhibit stark contrasts and complex interrelations between population demographics, economics, and natural resources. This assessment not only highlights the vulnerabilities of each nation, but also covered the different policies and tactics they both are employing to try and carve a path towards recovery. Some of these policies seem to do the opposite of other goals, like the net-zero greenhouse gas emissions by 2050 goal that Japan has, and yet they continue to implement policies that increase their coal use and importation. Policymakers must now contemplate these obvious conflicts of interest and additional weaknesses pointed out to develop a better path forward. It is obvious that each nation must work hard to find a workable solution to foster resilience and sustainability, avert potential eco-conflicts, and ultimately secure a stable future for both societies.

Milestone IV: Final Environmental Risk Assessment

Final Environmental Risk Assessment

Risk Level Table

Risk Categories	Bolivia		Japan	
	State	Civil Rights	State	Civil Rights
Population	High	Mild	High	Moderate
Poverty	High	High	Moderate	Moderate
Environmental Degradation	Moderate	Moderate	High	High
Resources	Mild	High	High	Moderate

Actions for Improvement

Japan

Japan's risk levels in the above categories remain rather high. The population crisis they are having is potentially detrimental to the state due to the inability to maintain the workforce level compared to those that have retired from the workforce. A lower population means fewer people paying taxes and higher risks of poverty. Japan has already been making changes including government funded dating resources and increased childcare resources to inspire families to feel safe in having more children. Given what they have already been doing, an additional option that could be utilized would be the promotion of more individualism in the workforce. Meaning make it culturally acceptable to be an entrepreneur and enable creativity in the job market by supporting small businesses. This would enable those individuals that do not wish to conform to the culturally acceptable way of life to find or design their own career or business instead of finding a corporation to work for. This would enable the "lost generation" to find a solution to their job issues and

potentially remove the stigmata of not being masculine enough to provide for a family. It could improve the rate of the cultural phenomenon known as Hikikomori. Hikikomori is the word used to describe an individual who has completely removed themselves from society. They are voluntary hermits to an extreme level. Some live with their parents, yet stay in their rooms, never really leaving. They are unable or unwilling to conform to the traditional societal expectations. This move could potentially assist with the poverty problems as well by opening more avenues for careers than the traditional path.

As far as the environment degradation and resources are concerned, Japan has been making progress with this as well. They have increased their energy self-sufficiency back up to 12.1% from 6.3 since the earthquake. They have made a commitment to become carbon neutral, or zero greenhouse gas emissions by 2050. Despite this, they continue to rely heavily on coal and this dependency grows. To fix this, Japan must convert to renewable energy sources. The problem with this is that they have to import almost everything they need to make this conversion. Thereby, making this issue not an easy problem to fix. However, by increasing their imports, they could design and create ways to increase their renewable energy sources. They are an island nation, surrounded by water, and could utilize hydroelectric generators around their coastline taking advantage of the natural movement of the ocean. If they did it wisely, they could achieve taping into this massive energy source with little to no environmental impact.

Bolivia

The issues of Bolivia are in many ways the complete opposite from the problems of Japan. Instead of a shrinking population, theirs is growing at an alarming rate. Despite the high death rate for children, Bolivia remains above the replacement fertility rate. This problem has a compounding negative impact on both the State of Bolivia and the civil rights of the people. There is no easy fix.

However, the main goal would be to improve the healthcare and education problems by focusing on natural solutions that reveal cures instead of just treating symptoms, and giving their people access to free education to better enable them to raise their standards of living. The health and education of a nations people should be the governments first priority, because a nation of sick and uneducated people is weak and unproductive. Healthy people contribute to society, the wellbeing of the nation as a whole, and will raise the value of that nation for the world.

Then dealing with the resource issues and environmental degradation would require a massive change to their agriculture system. It would require multiple processes. One of these processes is called remineralization. This process involves adding required minerals back into the soil using rock dust, which contains all of the minerals that plants need and want. It would also utilizes natural fertilization methods that would require the construction of multiple different processing plants that could handle all manner of biowaste. It would decrease their pollution problem, increase their job availability, increase their food production, decrease their deforestation, allow them to reclaim barren soil, and provide them with an avenue to decrease environmental degradation. It would require the ending of the slash and burn method of agricultural as well as the use of chemical fertilizers that drain the soil of resources in the long run, and produce crops that are healthier and that produce more food.

Conclusion

Reflection on ecological conflict, sustainability, and the role of citizens reveals that the best path for Bolivia and Japan, as well as the rest of the world is to change the mindset of governments and corporations to align their goal with the ‘Buen Vivir’ ideology of ‘Living Well’. Using natural methods to find the causes of disease and illness instead of just treating the symptoms, not only applies to healthcare, but also to agriculture and environmental issues. There

are always simple more natural ways to solve problems, which do not conflict with the environment. In most cases there are already solutions, they are just not searched for and used. The focus on the bottom line has caused governments and businesses to overlook or even destroy the solutions because the best solutions would interfere with their current method of generating income. The idea that the best solutions could produce more income that is more sustainable does not appear to be a possibility that enters their minds for consideration. Changing the focus on the GNP (Gross National Product) and the bottom line to the better ideology of 'Living Well' would give way to methods that would make people's lives healthier, more productive, happier, living in a balance with the environment, and many more benefits. Our world could be cleaned up and our lives would be Better.

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