ANALYSIS OF REFORESTATION EXPERIENCE OF BRAZIL AND MYANMAR THROUGH BENCHMARKING SOUTH KOREA'S CASE

Kaung Phyo Wint[1], Daiana Sayuri Fugikava[2], Myunghwan Sung[3]

[1,2] Master Students, KDI School of Public Policy and Management, Sejong-si, Republic of Korea
[3] Master Student, University of Portsmouth, Winston Churchill Ave, Portsmouth PO1 2UP, United Kingdom

Abstract

The tale of the Republic of Korea's successful reforestation efforts and sustainable forest protection measures may be found in this article. Lessons and insights into the efficacy of policy integration for reforestation, such as South Korea's national plans for reforestation, can be gleaned from South Korea's experiences, which provide these. Myanmar and Brazil, as well as other emerging nations with significant population and development demands, have an urgent need to manage their forests in a way that is ecologically sound and sustainable. Therefore, with coordinated national forestation plans and linked strategies, Myanmar and Brazil adopted a similar approach to reforestation as South Korea. However, there are significant differences between their techniques. Consequently, this paper will examine South Korean reforestation experiences and conduct a comparative case study of South Korea, Myanmar, and Brazil.

Keyword: reforestation efforts, Korea, Myanmar, Brazil, sustainable plans

1.INTRODUCTION

Forests protect biodiversity, keep ecosystems in balance, are an important part of the carbon cycle, and help protect against disasters. They also help people make a living, ensure food security, and drive long-term growth. Still, about 12 million hectares of forest are lost every year. About 25% of the world's greenhouse gas emissions come from agriculture and other land use activities that cause deforestation (UN Environment, 2019). Thus, protection of forests is not only an expense means of mitigating climate change, but also provides numerous other benefits to local communities and society at large, such as biodiversity, soil and water resources, and pollination. Therefore, reforestation is one of the most effective tools governments have available to combat climate change. Successful reforestation at the government level requires strong political commitment, institutional capacity, and coordination, in addition to adequate investment in the forestry sector. For forest policy to be sustainable, a long-term perspective is necessary.

Today, forests face a growing number of threats, including deforestation, land-use change, agricultural expansion, invasive alien species, severe droughts, and forest fires. Myanmar and Brazil face a particularly urgent need to effectively manage forests on a truly sound and sustainable basis, as do other developing nations with high population and development pressures. In this case, the Republic of Korea had a successful story of reforestation efforts and sustainable forest conservation measures. South Korea's experiences provide lessons insights into the efficacy of policy integration for reforestation such as its national plans for reforestation. Myanmar and Brazil took a similar approach to reforestation as South Korea, with coordinated national forestation plans and integrated policies. There are, however, some key distinctions between their approaches. Thus, this paper will explore insights into the South Korean's reforestation experiences and a comparative case study between South Korea, Myanmar and Brazil.

2. ANALYSIS ON SUCCESSFUL REFORESTATION CASE OF SOUTH KOREA

2.1 Background Information

The Republic of Korea is known for its successful case of reforestation, which is referred to be unprecedented worldwide. The main causes of the forest devastation in Korea were winter heating demand and slash-and-burn farming. In ancient times, Korea's rich forests were considered obstacles to development, for hindering agricultural expansion and becoming a shelter for wildlife attacking people. During the Japanese colonial period, in the Amnokgang (Yalu) River which had been known for timber production, a lot of logging has been done, due to the benefit of transportation by raft and the Gyeong-ui Line Railway, for the purpose of lumber and wood pulp, and for the restoration of damage from the Great Kanto Earthquake, etc. After the end of the Japanese colonial era, the influx of population from overseas (3.2 million) and northward (2.5 million) accelerated deforestation. When the two Koreas were divided under U.S. and Russian rule after liberation in 1945, the population of South Korea was about 1.6 times larger than that of North Korea, but the forest area and forest accumulation were 70% and 57% of North Korea, respectively (Bae et al., 2010).

The main causes of Korea's deforestation are the demand for wood fuel for heating and cooking and field-burning cultivation. Korea's winter is severe, with temperatures dipping below freezing for more than 2 months. Korea's traditional floor-heating system called the "ondol" is effective but, due to the lack of insulation, much fuel was needed to heat the house (FAO, 1982). Also, for cooking food and feeding native cattle with boiled rice straw, wood fuel was consumed in large quantities. The proportion of firewood in primary energy was absolute at 90.5% until 1950, and it still accounted for 62.5% in 1960 (Bae et al., 2010).

For decades, South Korea suffered from worsening problems of organic erosion and loss of soil. These matters caused a diminish in agricultural productivity. As the vicious cycle, erosion and soil depletion lead to siltation in rivers which caused less water conservation and frequent flooding. However, due to the National Reforestation Program, which is focused on causal treatment, Korea could succeed in forest greenification in a short period.

2.2 Comprehensive Reforestation schemes of South Korea

The National Reforestation Program initially began in 1973. Just as the Saemaul Movement emphasized the voluntary participation of residents, the greening project aimed to attract residents' participation by educating forest leaders and promoting village sapling cultivation, village afforestation, and village erosion protection work, and paying wages for residents' participation. The program was also a job creation project for the survival of the people. Everyone, men and women of all ages, jumped in to get flour and corn powder for the immediate meal rather than pride in planting trees for the future and the country (The Korean Association for Public Administration, 2009). From 1968 to 1972, the Korean government implemented various types of compensation for reforestation efforts, including the provision of free seedlings and fertilizers as part of the Five-Year Fuel Wood Forest Establishment Plan.

The voluntary participation of residents and the role of forest managers and monitors were great. In 1959, 21,676 Village forest coops (VFCs) were created nationwide, and forest managers and monitors were given greater incentives than forest land owners. In order to prevent the recurrence of illegal logging and forest fires, entry control was implemented for five years where afforestation and erosion control were carried out. However, the inter-sectoral approach was an absolute factor in success, as mountain greening could not succeed simply by planting trees. Supporting projects for the reforestation program were the Coal Development (five-year) Plan and the Comprehensive Fuel Management (five-year) Plan in 1956, and the Field Burning Cultivator Rehabilitation Project in 1977.

Replacement of fuel wood with fossil fuel was the first priority for reforestation. As the phrase "a cycle of devastation" implies, even if trees are planted, they will someday be devastated again if local residents cut down trees to use them as fuel (Bae et al., 2010). Park Chung-hee's government spurred the production of anthracite, a de facto-only resource in Korea, with the momentum to mine almost all of its reserves within decades. The consumption of coal for civilian use was 1,024,368 tons

in 1957, 2,908,665 tons in 1960, 7,117,804 tons in 1965, 9,909,873 tons in 1970, 13,612,290 tons in 1975, and 24,251,672 tons in 1986. To make this possible, with 3 railways linking production areas which were built in 1950, road pavement in rural areas was done to prevent briquettes from being easily broken. On the other hand, the consumption of wood fuel was over 12,000,000 tons between 1951 and 1960; however, it gradually decreased to 9,105,467 tons in 1970, 7,961,873 tons in 1975, 4,718,083 tons in 1980, 3,688,805 tons in 1985, and 1,448,119 tons in 1990.

Meanwhile, compared to 1967, the rural population decreased to 82.4% in 1975 and 41.4% in 1990. And the decrease in the rural population contributed to reducing the consumption of wood fuel because city households were not allowed to use wood fuel from around 1970. In addition, plantations of fast-growing trees such as "false acacia" were largely initiated for fuel wood in rural areas. Moreover, in the 1980s, cooking fuel was replaced by gas and heating fuel with briquettes.

The second pivotal measure is the slash-and-burn cleanup project. Also in 1911, it was implemented during the Japanese colonial era but was unsuccessful. However, in 1974, under the direction of President Park Chung-hee, the Slash-and-burn Cleanup Plan (1974-1978) was successfully promoted after a nationwide survey. The key factors for success were the migration and livelihood measures of slash-and-burn households. As a prerequisite for the policy, establishing self-supporting homesteads should be by permanent measures, and the measures required that the life quality of the field burners be more enriched. The Japanese Government-General of Korea provided fertilizer subsidies to settle down agriculture and transfer support. But the transfer support was only 20.5% of the annual income of slash-and-burn farmers and 5.9% of the annual income of tenant farmers. On the other hand, the Park Chung-hee administration's transfer subsidies amounted to nearly one year of income for them, accounting for 43.3% of the average income of general farmers. Attributed to this wholehearted investment, a total of 124,643 ha of swidden were recovered, 86,073 ha of which were restored to forests, and the remaining 38,507 ha were converted into agricultural land.

2.3 Success Factors for South Korea's Reforestation

The successful factors for reforestation in South Korea can be explained with key concepts: consistency of policy from the government and the President, community participation (e.g saemaeul movement), alternation of energy utilization, devotion of civil servants and international assistance. The Forest Law was among the earliest legal frameworks implemented in South Korea, in 1961. By producing a national forest plan every ten years, this law accelerated forest protection and development. The Erosion Control Act of 1962, the Law on Voluntary Forest Guard Service of 1963, the Slash and Burn Fields Act of 1966, the Natural Park Act of 1967, and the City Planning and Zoning Act of 1971 all contributed to the successful restoration of forest. Reinforcement of structural and institutional framework in the 1960s through "Forest Law"(1961), "Act on Erosion Control"(1962), and establishment of Korea Forest Service (1967) is one factor contributing to forest restoration.

As a government right decision-making process, the government designated April as the "National Tree-Planting Period" because this is the optimal time to plant trees. Farmers, families, and students were encouraged by the government to participate in the reforestation program. Developing rural fuel wood forests and restricting access to the mountains significantly reduced forest damage. These are also important factors for successful restoration and rehabilitation of forests in South Korea. Last but not least, combating corruption and increasing public awareness about illegal logging are two of the most important factors driving South Korea's successful reforestation.

To sum up, the Republic of Korea is one of only four countries and the only former developing nation to have successfully rehabilitated its forests following World War II. The successful reforestation in Korea has left numerous lessons and recommendations.Thus, this paper will also make the comparative study with the experiences of developing countries like Myanmar and Brazil. It is believed that the South Korean experience is anticipated to serve as a model for those developing countries.

3. ANALYSIS ON MYANMAR'S REFORESTATION EXPERIENCES

3.1 Background Information

Myanmar has a wealth of natural resources because it has many different kinds of forests and such a wide variety of biological resources. There are six major types of forest found in Myanmar, generally range from mangrove forests in the coastal region to dry forest and deciduous dipterocarp in the central region to mountains and mild temperatures forests in the northern part of the country. According to FAO (2020), there are still forest resources covering about 42.19 percent of the land area in the country, which is equivalent to about 28.5 million hectares. Among them, deciduous forests and evergreen forests (temperate and hill) are the two most common types of forests, each accounting for 38.20 percent and 26.92 percent of the total land area covered by these types of forests, respectively.

The forests of Myanmar make a significant contribution to the economy of the country as a whole, as well as to the socioeconomic standing and standard of living of the people who live there. Over 70 percent of the country's population lives in rural areas and relies heavily on the resources provided by forests for their primary needs of food, animal husbandry, housing, and energy (MONREC, 2020). Since the one third of the country's population relies on the forest resources, the country experiences a significant amount of annual deforestation due to the overexploitation, illegal logging, cultivation, governmental and organisational issues, and the enlargement of urban and farming lands. Figure-1 shows the amount of land covered by forest is decreasing over time, while the amount of land covered by other types of land is gradually increasing due to a number of causes.

According to FRA (2020), Myanmar has the seventh-highest rate of deforestation of any country in the world. In 1990, forest cover accounted for 57.9 percent of the total land area of the country, but by 2020, that percentage had dropped to 42.19 percent. The annual net loss of forest area was 1.17 percent in the period between 1990 and 2000, 1.03 percent in the period between 2000 and 2010, and 0.96 percent in the period between 2010 and 2020 (FAO, 2020). As a result, Myanmar was one of the tropical nations with the highest rates of deforestation, following in the footsteps of Brazil and Indonesia (FRA, 2015).

3.2 Taking steps toward restoring forest

The restoration of Myanmar's forest landscape is one of the significant actions the country is taking to improve the situation. Since the 1970s, the government of Myanmar has prioritized reforestation activities, encourages community forestry project development, and has set aside 30 percent of the country as permanent forest estate. This decision was made with a long-term perspective on the challenges that are facing the forest sector. Since 1977-1978, a nationwide annual tree-planting program has been implemented in Myanmar. The purpose is to encourage and inspire individuals to plant trees in unforested areas. Individuals, civil societies, and government and non-government organizations are involved in the program. The annual tree-planting program is currently set at approximately 40,500 hectares per year, with teak plantations accounting for 8,100 hectares on a 40-year rotation. Particular emphasis is being placed on the greening program in the dry zone (FAO, 2015). The goals are to reforest, prevent desertification, and meet the rural populace's critical fuel wood needs. The government set up the Dry Zone Greening Department (DZGD) which is responsible for reforestation in the dry zone lies in the central region of the country comprises approximately 12 percent of the total land area. DZGD has developed a 30-year master plan covering the years 2001-2002 to 2030-2031 to DZGD has planted trees on a total of 236545 acres of land between 1997-1998 and 2018 (April-September) fiscal years and all of the remaining natural forests on 2,157,931 acres have been protected in the central dry zone (MONERC,2020).

Myanmar started Community Forestry (CF) projects as a forest policy changes and decentralization plan in the 1990s. The Forest Department has helped bring CF to the severe deforestation areas. The main goals of CF are to plant trees and meet the local demand for forest products. In Myanmar, the CF is widely assumed and viewed as the operation and maintenance of a forest by a rural community under a 30-year land grad. The formation of NGOs such as Farmer's and Women's Income Generation Groups (FIGG) is occurring as a result of CF. Compared to the Republic of Korea, the implementation of CF in Myanmar has been slow, and after eight years, only one percent of the country's forestland is covered (Lin, 2005). Then, the government issued Community Forestry Instructions (CFIs), which were revised in 2016 and 2019.The new CF instructions

(2019) pave the way not only for the provision of locals' basic needs, but also for the commercialization of forest products and the promotion of nature-based tourism for the purpose of enhancing incomes and social welfare AFoCo(2022).

As the laws and policy implementation, the First Myanmar Forest Law was adopted in 1996 with the purpose of promoting the public cooperation in the implementation of the government's forestry policy and environmental conservation policy and to enhance the country's economy. In 1995, the Myanmar Forest Policy and Forest Rules were formulated in a holistic and balanced manner, taking full account of forestry principles within the context of the environment and sustainable development. It formalizes the government's commitment and intention to ensure the sustainable development of forest resources for social, environmental, and economic reasons. The Forest Law stipulates that any individual or business, wishing to conduct an economic project on forest land in Myanmar, must obtain prior approval from the Ministry of Forestry. Moreover, the Forest Rules restrict the activities of such a person or business to the precise terms of their authorization. Nevertheless, Forest Law was not too effective at the time because of the corruption (MONERC,2020).

Then, the Forest Department developed a 30-year National Forestry Master Plan (NFMP) (2001-02 to 2030-31) for the sustainable management of forests. NFMP has been formulated in accordance with contemporary forestry concepts. The plans prioritize the sustainable production of timber, the preservation of wildlife and flora, and the social welfare of the local communities. The current plans for a 10-year period (2015–16 to 2024–25) are being implemented nation-wide. National Land Use Policy was introduced in 2016 with the intention of implementing, managing, and carrying out land use and tenure rights in the country, including both formal and informal land use in accordance with NFMP. As part of this plan, Forest Department launched National Reforestation and Rehabilitation Programme in Myanmar (NRRPM) (2017-18 to 2026-27) to restore degraded forests. The NRRPM aimed to improve the economic and ecological conditions of local communities.

Moreover, Myanmar has established two model forests in Bago Yoma Region, namely Oktwin and Pauk Khaung Model Forests in cooperation with Japan International Forestry Promotion and Co-operation Centre (JIFPRO) and JoFCA (AFoCA,2022). Using Myanmar's knowledge and experience with sustainable forest management, the Forest Department of MONREC is assessing and enhancing existing forest management actions.

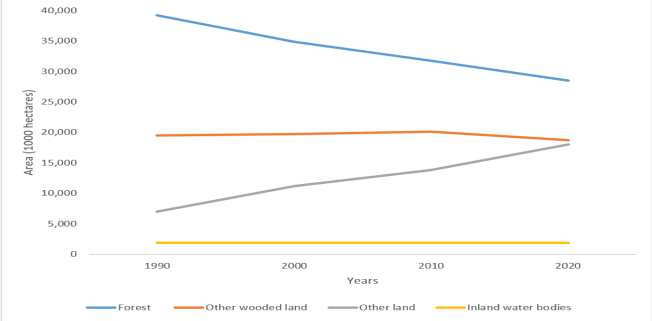


Figure-1 Deforestation and increasing amount of land use overtime (Source: MONERC and FAO, 2020)

3.3 Achievements and Challenges

Since the implementation of forest rehabilitation policies, plans, and projects by the Myanmar government, forest restoration achievements have improved. As of December 2019, the CF projects composed of 138,179 members have resulted in the creation of 714,537.5 acres of forest across the nation. In order to preserve biodiversity, approximately 6 percent of Myanmar's land area has been designated as protected forests. After implementing various projects and policies, such as private plantation projects, commercial plantation projects, greening plantation projects, hill plantation projects, agroforestry projects, etc., the reforestation areas in Myanmar are gradually expanding. As a result of the National Master Plan and forest restoration projects, approximately 139,313 hectares of the targeted 883,897 hectares can be recovered in 2019. The result shows that only about 16 per cent of restoration efforts in the past have been successful.

Despite substantial contributions and significant efforts to achieve sustainable forest management, the forestry Sector in Myanmar faces numerous challenges. Limiting human resources for monitoring and evaluation, land tenure-related issues

between local communities and the government, land use change over time, weak cooperation among the ministries and weak public participation are the primary challenges. Moreover, the need of woods for energy is other major challenge for successful implementation of reforestation in Myanmar because the government supplies only 900,000 tons of woods for energy needs so that the rest comes from illegal or unsustainable forest resources. The other challenges are land conversion, urban expansion, and reservoir and dam construction projects. Another factor is that despite the existence of rules and regulations for logging, there is a lack of adherence to the rule of law. Furthermore, in order to halt the further deforestation of forests, it is essential to combat poverty too. In addition, ethnic and political conflict has been and continues to be a problem in some regions has severe consequences for the reforestation projects. In addition to the unrecorded challenges, cross border illegal forest products trade with countries such as China, India, Bangladesh and Thailand, are also the challenge for reforestation.

3.4. Comparison with South Korea's Reforestation Experience

Republic of Korea's remarkably successful country wide forest restoration efforts are an excellent example to highlight here. More than 80 percent of South Korea's forest was degraded due to slash-and-burn agriculture, intensive fuelwood extraction, and two wars. Dating from the early 1970s, the government implemented extensive rehabilitation programs. It started planting 12 billion trees on 4.25 million hectares, and by 2010 the growing stock had reached approximately 126 m3/hectare (Lee, 2012). The achievements of South Korea can be attributed to a number of factors, such as a strong political will, effective government institutions, and international technical assistance. The successful forest restoration work involved the active involvement of local communities and authorities, the active participation and support of households, as well as the keen interest of national authorities. In addition, close monitoring by provincial leaders and the officials from concerned ministries are one of the main factor in South Korea case of reforestation. In South Korea's case, the social benefits of additional cash income and savings, resettlement and training in restoration techniques, as well as Samuel movements and improvements in their livelihoods and stable food prices are can attract the local people participation in reforestation works.

It is evident from South Korea's reforestation experiences that community involvement is the key to forest restoration in the region. In many instances, local communities should be considered as the primary actors and involved in the reforestation decision-making process, according to South Korea's experiences. Overall, the government should develop mechanisms for the inclusion of communities, develop conflict resolution processes, and implement participation and co-management to ensure equitable rewards for their efforts. Moreover, the government should learn from the South Korea's experiences to address the highly contentious issue of land allocation, corruption and inter-ministerial cooperation.

4. ANALYSIS BRAZIL'S REFORESTATION EXPERIENCES

4.1 Background Information

Deforestation in the Amazon rainforest has been associated with land grabbing, illegal logging, and in recent years, large-scale agriculture expansion has changed the land-atmosphere system. To provide food for the expected 10 billion population growth, the demand for food production is steadily increasing. Due to its flat geography, favorable semi-temperate climate, and fertile soil, Brazil has a significant role in the agriculture and livestock sector. Mato Grosso, which is a state located well below the Amazon rainforest, is considered the main soybean, maize, and livestock production, thereby, the expansion direction has occurred from south to north. Especially in the Amazon area, the most common commodities crops are soybean, maize, sorghum, and cotton (Maeda E.E. et al., 2021). The Amazon rainforest is recognized as a potential element to regulate the global atmospheric system, because absorbs carbon dioxide and generates around 20% of the world´s oxygen. Despite Brazil representing 59% of the total Amazon rainforest, including 67% of tropical rainforests and 20% of freshwater in the world (Imazon), is also presented in other countries: Peru, Bolivia, Colombia, Venezuela, Guyana, Suriname, French Guiana, and Ecuador. For this reason, it is important to address deforestation and

exploitation of freshwater collaboratively to protect the environmental threats and mitigate climate changes.

4.2 Policy/Project Implementation for Forest Restoration

The Amazon Sustainable Landscape (ASL) was created to be a multilateral partnership project, financing by Global Environment Facility[1] (GEF), and seven countries are working collaboratively: Bolivia, Ecuador, Guyana, Suriname, Brazil, Colombia, and Peru. The project's purpose is to reduce the biodiversity threat, recuperate degraded areas, increase carbon retention, develop good practices in forest management, enhance the sustainability of protected areas, and strengthen the policies toward conservation and recuperation.

The project is composed of four components:

Component 1 – Integrated Amazon Protected Areas: The purpose is to increase protected forests and freshwater ecosystems, enhance the management, and increase long-term financing in the protected area.

Component 2 – Integrated Landscape Management: It aims to increase forest and restored areas and watersheds through sustainable management practices.

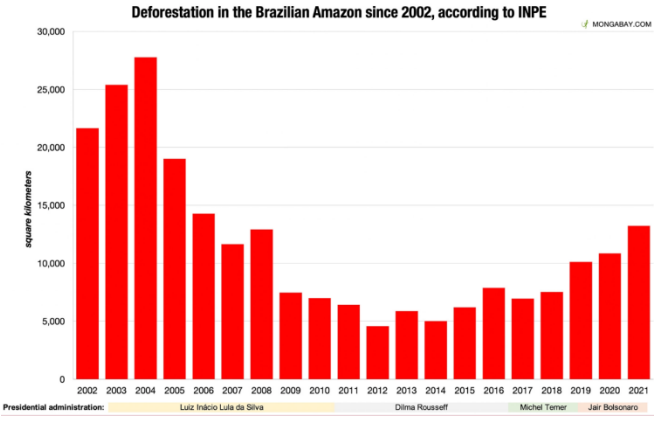
Component 3 - Policies for Protected and Productive Landscapes: It seeks to focus on monitoring, combating illegal activities and increasing the policy for sustainable use of natural resources, address ing environmental issues in the economic sector, increasing technical support, and incentives in water management, and land sustainability.

Component 4 - Capacity Building and Regional Cooperation: the objective is to strengthen the evaluation system, enhance the implementation capacity by means of regional coordination to manage terrestrial and freshwater ecosystems, and increase stakeholder knowledge on conservation in the Amazon.

4.3 Achievements and Challenges

As Amazon Sustainable Landscape project is still in progress, there is limited information about whether is successful in attaining its goals in Brazil. However, there are some indicators that show that is on the right track. The ASL´s project has protected the indigenous people and riverine population, the traditional population living in the Amazon area. Furthermore, the ASL program has contributed to promoting compliance in Forest Code implementation, by means of the Environmental Rural Registry, a mandatory digital registration that gathers information related to rural properties. Under this project, small landowners have support to develop plans to restore the forests. The indicators that are favorable to producing positive Brazil Nationally Determined Contributions outcomes include the financial sources to implement the projects, the commitment of the Amazon States in the project, the technical support from the implementing agencies, the cooperation between World Bank and Environment Ministry of Brazil in developing international projects, the alignment between ASL projects with the national Forest Code.

In contrast, as shown in Fig.2, it seems that the government's monitoring and punishment influence the deforestation rate. For instance, during Lula´s presidency (2003-2011), the deforestation rate steadily decreased. However, under Bolsonaro´s presidency (2019-now) starts to increase again, because the government overlooks monitoring and evaluation. Moreover, for 2022, the president of Brazil reduced $6.5 million of the budget allocated to prevent fighting fires, which might contribute to spreading easily and rapid deforestation.



[1] *GEF was created in 1992 to help developing countries to achieve international environmental agreements, providing new and additional grant and fundings in areas related to climate change, biological diversity, international waters, and ozone layer depletion It is a partnership between UNDP, UNEP, and World Bank.*

Fig.2 – The relation between government monitoring and deforestation rate.

The cooperation of the community in the Amazon area is not effective, because there is any kind of incentives to motivate the villagers and give them a sense of ownership. The villagers expect the government to solve the deforestation problem by themselves. The National Institute for Space Research (INPE), responsible to emit alerts about deforestation, shows that in January 2022, the deforestation in Brazilian Amazon was the highest since 2009. Even though, the president announced a $560 million budget cut from the Ministry of Science and Technology. In Brazil, there are no incentives to motivate villagers to volunteer to protect the forest and, if they do, it might be dangerous. Recently, the passionate defender of Amazon´s forest, Bruno Pereira, and the British journalist, Dom Phillips were murdered, while they were on a boat expedition in Amazon indigenous area, a place threatened by miners, illegal fishermen, loggers, and drug dealers. The United Nations Human Rights criticized the lack of interest of Brazil´s government in solving the case. Back in 2019, in a press conference, Dom Phillips interviewed Brazil´s President, and the journalist showed his concern about the increasing deforestation in the Amazon region, and call for monitoring improvement and stronger punishment. However, president Bolsonaro argued with him, giving him cold and rude answers. In Korea, due to illegal lumbering, 57% of mountains were treeless by the end of 1950s. However, Park Chung-hee was able to overcome, providing economic growth and environmental improvement concomitantly. Under anti-corruption policies, local officers who neglected the illegal lumbering were punished. These policies actions motivated the locals, officers, and policies to surveil collaboratively and arrest the thieves.

4.4 Comparison with South Korea's Reforestation Experience

The administrative tax reforms in the late´s 1960s contribute positively to the success of Saemaul Undong, because the government was able to allocate resources effectively. The same way as Korea, is recommended to Brazil to have a tax reform at first, because the country is known to have three levels of taxes (federal, state, and municipal levels), one of the most complex tax systems in the world. Second, in Korea, the President Park Chung-hee has had a strong sense of leadership, anti-corruption measures, persistent long-term view, and focus on monitoring and evaluation, which contributed to the rapid growth rate and sustainable development in Korea. In Brazil, the lack of committed leaders like Park Chung-hee hinders the progress in terms of effective sustainable projects to motivate the villagers to protect the Amazon rainforest. For instance, in Korea, in the first year of Saemaul Undong, the government incentives resulted in positive outcomes in just 50% of villages, likewise, Brazil might fail in the first year as well. For this reason, it is important a persistent leader to not give up and overcome failure cases, showing pictures of the real benefits that the community development projects provided to their communities motivated them to rejoin the movement. The Korean example shows that villagers that used to have good leaders were more efficient in promoting villagers' participation and better outcomes. Thereby, positive outcomes might spill over and create positive impacts around.

5. CONCLUSION

The Republic of Korea is only one country that was considered a developing country at the time that was successful in rehabilitating its forests after World War II. In spite of the fact that South Korea's forests have been devastated, the nation has been successful in turning barren lands into dense forests in a period of less than half a century. The Korean government recognized from the beginning of the reforestation measures that the planning of the policy required an approach that consisted of multiple facets and integrated solutions. Thus, the government implemented the policy and plans that were thorough and all-encompassing; it included plans for community forestry, forest protection, pest control, and tree planting from the very beginning. Therefore, South Korea was able to bring back its forests because the country's political, administrative, economic, and social conditions were all in unison.

Like the South Korea case, Myanmar and Brazil governments are also fully committed to stopping climate change, protecting biodiversity, stopping desertification, managing forests in a sustainable way, restoring degraded forest ecosystems, and so on. They also established the forest and environmental related polices to rehabilitate and protect their forest areas. In adhere to their policies and planning, the counters'

forests were managed to provide forest products sustainably while rendering protective functions to ensure ecological and biodiversity stability with supportive services for agriculture, recreation and ecotourism. In contrast to South Korea, both Myanmar and Brazil had problems with how they tried to fix things. This was because they didn't have a web of stakeholders that worked together, they didn't have clear rules about how to manage forests legally and sustainably, they were corrupt, and their citizens didn't change their minds on logging and using forest products.

Therefore, the lessons learn from South Korea's reforestation experiences suggest that through a participatory process can the cooperation with communities and the private sector be one of the ways to implement successful reforestation process in Myanmar and Brazil. In addition, the establishment of locally-tailored forest policies, the creation of a forest restoration project linked to financial incentives, cooperation between government agencies, anti-corruption measures, international cooperation and assistance, and an institutional reform process are anticipated to yield the best reforestation results for Myanmar and Brazil.

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