

Analysis on Deforestation and Environmental Law in Sri Lanka

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Abstract-Ever since human starts to walk in the earth they had a close relationship with the forest and their daily essentials were provided by the forest. But due to the expansion of civilization, forest lands were destroyed for agricultural purposes, development projects and for timber. Gradually human distant themselves from forests due the technological development they achieved and pay less attention to the protection of forests. Therefore deforestation rate increased. As an island nation and a biologically hot spot, Sri Lanka had to face the environmental issue, "deforestation". From the beginning of this nation there were rules and regulations relating to the protection of forests. Though there are laws relating to environmental protection somehow deforestation has become a major environmental issue in the country due to its implication on biodiversity, water cycle, carbon cycle, etc. This research is carry out to examine "whether laws relating to deforestation are adequate to control the rate of deforestation?" Objectives of this research are to analyze the international and domestic laws prevailing in the country and to examine whether they are adequate enough to mitigate this issue, Environmental impact of deforestation and finally to recommend solutions by referring into measures taken by other countries. This research would employ a quantitative analysis of primary sources and secondary sources. Primary sources would include conventions, case laws and secondary sources would include textbooks, journal articles and other electronic resources.

Keywords - Deforestation, Sri Lanka, Environmental law

I. INTRODUCTION

According to Food and Agriculture organization of United Nation (FAO), a land area is considered as a forest when it is larger than 0,5 hectares with trees higher than 5 meters and with a crown cover exceeding 10 percent. Importance of a forest cannot be

underestimated. Forest provide habitants for millions of species and has a close relationship with water cycle, soil, climate etc. Even though the importance of forests is immense, forest are being destroyed due to the expansion of civilization and agriculture etc. This kind of removal of trees in large scale is called "deforestation". Causes for deforestation are varying from country to country over time to time in response to cultural social and economic conditions. Deforestation differs from the Forest degradation as in forest degradation it gradually reduces the biomass which is a change with in the forest.

Sri Lanka is an island and one of the Bio Diversity hot spot, according to the International Union for Conservation of Nature¹. Sri Lankan definition relating to forests is little bit different. It is defined as "a minimum land area of 0.05 hectares with a minimum tree canopy cover of 20% and a canopy height of 3 m"². Forests in Sri Lanka have been classified into 5 categories namely National heritage wilderness areas, conservation forests, reserved forests, village forests and other state forests. As a developing country timber plays a significant role in country's economy. Sale of timber is a part of the national economy to raise revenue. According to Central Bank of Sri Lanka statistics, in 1998 the Sri Lankan forestry sector contributed about SL Rs 15 billion to the national economy, which is 2 % of the total gross domestic product (GDP). In early 1800's forest percentage of Sri Lanka was 70% but it has been gradually reduced approximately up to 29% in 2015³ and 9% of this 29% is primary forests (the most bio diverse and carbon-dense form of forest.). According to FAO, from the end of 2005 Sri Lanka become the fourth among countries which have worst deforestation rates in primary forest (Bangladesh, Bhutan, Brunei, Cambodia, East Timor, India, Indonesia, Laos, Malaysia, Maldives, Myanmar, Nepal, Pakistan, Philippines, Singapore, Thailand, and Vietnam.)⁴ which lost 1% of its forest each year. Therefore concerns about deforestation have been

¹ (IUNC, 2014)

² (Sara Lindström 2011)

³ (Sri Lanka UN-REDD Programme 2015)

⁴ (Kariyawasam and Rajapakse)

grown in Sri Lanka. During the colonial period of Portuguese, Dutch and English, forests were cut down due to the developments in commercial agriculture⁵. When the British left about 100 years later the forest cover was down at about 50 percent of its former extent.⁶ After the independents, timber production got increased and become a mean to fuel. Economic and industrial developments due to these development projects such as Mahawelli project which was implemented with the objective to irrigate large areas of the dry-zone in the northeast had accelerated the deforestation. This project has replaced 2 430 km² of the forest. Not only because of development had projects, also because of security reasons government had to remove forest areas during the civil war period. In that period forest was strategically removed to provide less cover for the enemy.

Main four reasons for deforestation in Sri Lanka are Encroachments due to agriculture, gem mining and settlements, Infrastructure development projects, Commercial agriculture ventures and several localized drivers like cattle grazing, cardamom cultivation and forest fires⁷.

In this research paper researches will aim to discuss domestic and international laws implemented in Sri Lanka, steps taken to protect forest resource, environmental impacts due to deforestation in the country and why deforestation has become a major environmental issue and finally international measures taken by Brazil which inherits world most biologically diverse land "Amazon" and steps taken by the world most powerful country, USA to protect their forest resource will be analyzed and solutions will be recommended by referring in to steps taken by these countries in order to reduce the rate of deforestation.

II. DOMESTIC AND INTERNATIONAL LAWS OPERATE IN SRI LANKA

99.5% of forests in Sri Lanka belongs to the government, management and protection of the natural forests of the Sri Lankan government fall under two governmental ministries; The Forest Department (FD) and the Department of Wildlife Conservation (DWLC). Before 1970 total requirement of timber was obtained from natural forests.⁸ In some years back main task of forest department had been the production of timber, but now it had been converted in to the environmental conservation. Ever since the

Buddhism was introduced to Sri Lanka, Sri Lankan kings had imposed sets of restrictions and obligations for the people to avoid any misuse of forest lands. Today starting from the constitution of 1978, Sri Lanka has significant amount of legislatures relating to environmental protection enacted by the government. Under the Constitution there is no mechanism available to protect environment but under the chapter VI, "directive principles of state policies and fundamental duties" it specifically recognized the duty of the state to protect, preserve and improve the environment for the benefit of the community in the Article 27(14) and in the Article 28 it has imposed a duty on citizens to protect nature and conserve its riches. Basically protection for environmental related issues is provided by national environmental Act No.47 of 1980. It provides for the enactment of various regulations against development activities that are deemed to pose threats to the environment. The Environmental Impact Assessment (EIA) process deserves a special mention in its role as an inhibitor of deforestation and degradation. However the history of environmental policy and law in Sri Lanka goes back much further in history. In 1848, the Timber ordinance No.24 was introduced for the purpose Reservation of forests largely for timber production. In 1873, Hooker advocated the protection of natural forests above 5000 feet as climatic reserves and in 1938 a law was passed prohibiting the removal of forest above 5000 feet. The corner stone of present law related to forest, Forest Ordinance No. 16 of 1907 (Amended by Act No.13 of 1966) was enacted for the purpose of protecting forests and their products in reserved forests and village forests, again for the controlled exploitation of timber. In 1990, the National Policy for Wildlife Conservation was introduced with the prime objectives of sustaining the ecosystems and ecological processes and the preservation of genetic diversity. The government also introduced a logging ban which was implemented in all natural forests all around the country under the Forestry Sector Development Program. Apart from the government organization there are Non-Governmental Organization to create environmental awareness of value of trees and forest Ruk Rakaganno is such an organization which is registered under the central environmental authority. When looking into provision of the above mentioned Acts, it is clear that cutting down forest for timber production is not banned in Sri Lanka. Timber is needed to produce products which are required to our

⁵ (Sri Lanka UN-REDD Programme 2015)

⁶ (Sara Lindstrom 2011)

⁷ (Sri Lanka UN-REDD Programme 2015)

⁸ (Sara Lindstorm, 2011)

day today life. Further wood can be sustainably produced, if it comes from well-managed forest, including plantations grown on previously cleared land. Sri Lanka had ratified international conventions and agreements relating to environmental protection they are convention on Biological Diversity, Ramsar convention which is with the mission of "conservation and wise use of wet land through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world", Kyoto protocol which sets it party state internationally binding for emission reduction targets but it should be noted that no climate policies currently exist to reduce emissions from deforestation or forest degradation in developing countries., United nations World Heritage Convention, United Nations Framework Convention on Climate changers, the Convention on International Trade in Endangered Species of Wild Fauna and Flora and United Nations Convention to combat desertification.

When referring to these local and international instruments, it is clearly manifested that rather than focusing on deforestation they had concern about illegal logging, protection of bio diversity and climate changes etc. It is clear that deforestation is a root cause for loss of bio diversity and climate changes and most of other environmental issues even though there are laws to regulate illegal timber logging those laws are not sufficient enough to control the rate of deforestation.

III. IMPACTS OF DEFORESTATION

Major environmental issues in Sri Lanka are loss of bio diversity, deforestation, air, water and soil pollution marine pollution etc. among these issues deforestation becomes significant due to its inseparable impact on other major environmental issues. Forests play major role in carbon cycle, trees absorb carbon dioxide from the atmosphere and release oxygen to the atmosphere and helps to keep global climate in balance. Forests are the major carbon dioxide storage center but, when trees are cut down all the stored carbon dioxide is released back into the atmosphere, carbon dioxide is a greenhouse gas which comparatively has a higher ability to absorbs much heat than other gases in the atmosphere. Deforestation is one of the main causes which enhance the greenhouse effect which imbalance the local and regional climates.

Trees also help to balance the water cycle by regulating the water level in atmosphere. Most of the rivers and

streams in Sri Lanka are originated from the central hill. Trees and forested areas plays important role in determining local climate and precipitation and maintaining the soil conditions that determine stream flow and even area evaporation rates. Therefor loss of a forested area will effect on how the water cycle transfers water between the ground and atmosphere.

Further forest provide habitat for wildlife and also for indigenous tribes who are depending on them. Sri Lanka is a home for 3,210 flowering plant species, and out of that flowering plants and species 916 are endemic. Unfortunately due to the reasons like deforestation biological wealth in the country is in a threat. Surveys had found out that 17 of Sri Lanka's frogs have disappeared in the past decade and another 11 species face imminent extinction unless their habitat is protected. As above mentioned loss of bio diversity is a major environmental issue in the country and one of main reason for this issue is deforestation.

Forests work as an anchor topsoil to the ground. The dense forest vegetation act as a natural shield that decreases splash erosion during intense rainfalls while dispersing the droplet energy and covering the ground in a layer of protective leaf litter.

Apart from the environmental implications deforestation in Sri Lanka has caused ill effects such as flooding, landslides and soil erosion. When considering about these fact it is clear that the implementation of new law is an immediate necessity to mitigate this environmental issues.

IV. RECOMMENDATIONS

Deforestation and degradation are complex problems not only to Sri Lanka but to countries all over the world. Government of Sri Lanka with International Environmental organizations has taken several steps to address the problem over years by establishing national parks, reserves and sanctuaries. As an example Sinha raja Forest Reserve, which was established in 1978 to protect the nearly extinct tropical lowland rain forest, was flagged as a World Heritage Site in 1988. Deforestation rate of the southern mountainous regions in country is comparatively low when comparing with the northern part of the country due to the nature of environmental protection in that area. Though there are laws relating to the environmental protection there insufficiency is clearly manifested when comparing deforestation rate in Sri Lanka.

Different countries have used different methods to regulate deforestation depending on national

capabilities, deforestation patterns and forest characteristics.

BRAZIL

It is important to examine the measures taken by Brazil to protect Amazon rain forest which is the most biologically diverse place on the Earth. Since 1970, over 600,000 square kilometers of Amazon rainforest have been destroyed.⁹ In 2002 Brazil launched tropical forest conservation project known as ARPA (Amazon Region Protected Areas). Brazil announced a national plan to reduce its deforestation rate 80 percent by 2020 and later made this commitment part of its national law.

Between 2005 and 2010, Brazil nearly met its goal a full decade ahead of schedule. Data from 2009–2010 showed that Brazil's area of deforestation, which averaged 19,508 square kilometers (km²) per year during the baseline decade of 1996–2005, had dropped 67 percent, to just 6,451 km². UCS analysis of this change, using a formula for converting deforested area to CO² emissions based on the work of the research institute IMAZON, estimated a reduction in Brazil's global warming pollution of nearly 1 billion tons but balancing economic growth with the preservation of Amazon has become a challenge for the Brazil. Unfortunately in 2015 rate of deforestation rose again, nearly two million acres of the forest from August 2015 to July 2016 were cut down. That is a jump from about 1.5 million acres a year earlier and just over 1.2 million acres the year before that, according to the estimates of Brazil's National Institute for Space Research.¹⁰

Implementing laws alone cannot stop the deforestation government need to do their part, starts with cracking down on corruption and ensuring fair enforcement of forest conservation rules. Corruption fuels illegal logging and unsustainable forest management.

USA

In the United States, laws like the Endangered Species Act, the Wilderness Act, the Lacey Act and the Roadless Rule had helped to protect their forests resource and stop illegal wood products from entering in to the U.S.

marketplace. Under the Roadless Rule, United States Department of Agriculture adopted this final rule to establish prohibitions on road construction, road reconstruction, and timber harvesting in inventoried roadless areas on National Forest System lands. The intent of this final rule is to provide lasting protection for inventoried roadless areas within the National Forest System in the context of multiple-use management.¹¹

Further according to the Intergovernmental Panel on Climate Changers (IPCC) some countries monitored about the deforestation rate by examine the carbon emission rate.

*"Several developing countries, including India and Brazil, have systems in place for national-scale monitoring of deforestation. While well-established methods and tools are available for estimating forest carbon stocks, dedicated investment would be required to expand carbon stock inventories so that reliable carbon estimates can be applied to areas identified as deforested or degraded through remote sensing. With sound data on both change in forest cover and on change in carbon stocks resulting from deforestation and degradation, emissions can be estimated using methods described by the new IPCC Inventory Guidelines"*¹²

When there is a monitoring method countries can estimate deforestation rate daily even provision wise then they can pay much attention to the land areas which have higher deforestation rate and then they can find solutions.

Apart from the government intervention public also need to play active role to mitigate this major environmental issue. Companies can make an impact by introducing "zero deforestation" policies that clean up their supply chains. That means holding their suppliers accountable for producing commodities like timber, beef, soy, palm oil and paper in a way that does not fuel deforestation and has a minimal impact on the climate. Such attempts have been taken by companies like Nestle and Mac Donald's. Nestle had agreed to stop purchasing palm oil from sources that destroy Indonesian rainforests.¹³ Companies can

⁹ (Rhett Butler, 2017)

¹⁰ (Hiroko Tabuchi, 2017)

¹¹ (Roadless areas convention,2001)

¹² (IPCC, 2006)

¹³ (Greepeace,2010)

maximize the use of recycled wood, pulp, paper and fiber in their products.

When a tree is cut down another can be planted in the same place. Then it will control the loss of the tree which is cut down. Those who are engaged in agriculture field can participate in putting a dent in deforestation by rotating crops. It is suggested to replace the habit of

V. CONCLUSION

Forest is the most biological diverse biome on the planet we call Earth. It is home to an abundance of organisms that depend on it for food, shelter, etc. If we destroy it, we will inevitably lead numerous species into extinction which disrupts large ecosystems which in turn leads other species into extinction. The biosphere of Earth will be severely damaged if we remove the ecosystem. We still have quite a lot of forests in our country, but we need to be wise to manage the forest. If we are smart enough to send a man to the moon and build skyscrapers, we should be smart enough to find a sustainable way to work with the environment and stop cutting down trees. There are too many things to be sacrificed for this earth such as trees, soil, air and animals so think again if you want to make a business that need a forest to be sacrificed this world is crying already.

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using different portions of land each year with using the same portion of land to plant different crops. This practice has proven effective in maintaining soil fertility. Farmers may also embrace many other options, such as high-yield hybrid crops and hydroponics, which relies on a method of growing plants using mineral nutrient solutions instead of soil.

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