

ENVIRONMENTAL IMPACTS OF GLOBALIZATION IN TANZANIA: Assessing its effects and measures taken by the Government of Tanzania

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Accepted 9 February 2018

Globalization has massively affected developing countries both positively and negatively. More horribly, the negative effects tend to be more than the positive effects. This study analyses the negative effects of globalization and as well as the efforts taken by Tanzania Government to maintain good harmony with the environment. Rich countries have imposed development projects to the countries which were not prepared technologically to fit with such projects for sustainable development. Apart from environmental problems, globalization has brought conflicts, destroyed cultures of Tanzanians as well as producing less innovative generation. Tanzania has slightly not passed the period for innovation for its own development, instead, most things were imposed and hence the generation is less innovative to bring positive ideas and technologies to protect the environment. Surprisingly, the developed countries are not concerned with imposing technology to protect environment from their activities since they are just concerned with “more and more and even more” profit from these developing countries. Although the country cannot wind back the clock, but it can invest much in scientific researches to one university specifically for real or serious innovation for sustainable development and not “political” innovation. More importantly, the country need to include in the Would-Be-New Constitution express clearly and elaborate provisions providing the mandate for protection, conservation and management of the environment in Tanzania to the government and citizens rather than depending on an Environmental Management Act of 2004

KEY WORDS: Environment, Tanzania, Globalization, Pollution, Forest, Animals, Plants, Deforestation, Innovation, Colonialism, Technology, Sustainable development and Education

Cite this article as: PHARLES S, ANDRE C (2018). ENVIRONMENTAL IMPACTS OF GLOBALIZATION IN TANZANIA:

Assessing its effects and measures taken by the Government of Tanzania. Int. J. Polit. Sci. Develop. 6(1) 1-15

INTRODUCTON

Tanzania is a developing country listed among the lower income level countries by World Bank (World Bank Review 2017), with the population of 57,3110,019 (World Population Review 2017). The country shares its borders with Kenya, Uganda, Rwanda, Zambia, Malawi, Mozambique, Burundi and Democratic Republic of Congo. In the Eastern side, the country is demarcated with Indian Ocean where activities like fishing and marine transportation take place. In The Western side, Tanzania shares the boundary with Democratic Republic of Congo through Lake Tanganyika (the African Great Lake), the second oldest freshwater, largest and deepest in the world (Core Knowledge 2016:24). In the Northern part the country shares boundaries with Kenya and Uganda through Lake Victoria. The country has the richness of minerals which makes Mining activities unavoidable. Also the country has many factories from countries like China and India (Lunogelo, 2013:7). Thus, from all these in the introduction, environmental issues in relation to globalization should be seriously discussed since economic activities like fishing, transportation, industrial production in connection with neighboring countries or other far countries are serious contemporary matters.

Historically, environmental historiography of Tanzania can be traced back and divided into pre-colonial, colonial and post-colonial era. Due to the long history of Africa with slave trade and colonialism the environmental history is deep, complex and even non linear. In Tanzania and Africa in general, environmental history drew heavily on archival research, oral history and detailed field investigations of environmental practices and their outcomes (Kwashirai, 2003). In pre-colonial era, Tanzanian's traditional land use practices and activities such as farming and pastoralism very less affected the environment. Things started to get worse from Slave trade era whereby Oman Arabs involved in creating large areas for slave markets by deforestation, as well as paving ways for Forced marches of the

captives over long distances to Arabia, Persia, Islands of Reunion, Mauritius and in the Indian to work in Plantations during the 16-18th century. Furthermore, slave trade caused environmental destruction from wars and slave raids. Burning of villages as a way of threatening and capturing humans. Later the Arabs were joined by Europeans who opened plantations in different regions. Plantations caused deforestations and land degradation where by large plantations such as clove in Zanzibar, Sisal in Tanga and Morogora regions were created. Additionally living organisms were in danger from various activities such as the business of Ivory. Some scholars argue that during colonial era there environmental control existed, however in the real sense there controls were not there to undermine colonial development, but to facilitate. Such as protection of wildlife and control of soil erosion were with the high intention of protecting colonial governments (German East Africa and British East Africa) interest as a way of segregating and reducing competition among indigenous on exploiting the natural resources. Plantations and mining activities in colonial era like in Mwadui Shinyanga (Commonly known as Williamson Diamond Mine or Mwadui mine started in 1940 by a geologist Dr. John Wiliamson) destroyed the environment in Tanzania. Likewise during colonial era animals were in danger due to the fact that colonial governments protected game reserves and national parks for their interests, either transporting them to other areas from their original habitats for commercial activities because they were only after profit. Also some tribes like Maasai who had tremendous amount of wealth, were forced to sell their livestock especially cattle for obtaining cash to pay tax. Lastly, colonial governments didn't care much on the implementation of policies for proper migration of people and hence informal settlements of cities within cites were created (Michael, 2012)

After the colonial era under Mwalimu Nyerere the country started various projects to rescue environment

and its people's economic and social life. Such as creation of Ujamaa villages in 1967 Tanzanians could share a similar approach to physical planning to avoid mismanagement and misuse of land. Other policies were started such as emphasizing people to plant trees. In short, there were very few gluttonous economic activities to destroy environment. In 1977 The National Constitutional which is the Tanzanian supreme law to which all other laws must conform came into being. It states about environment protection, although some scholars and Law practitioners demand for more and clear constitutional statements over environment protection and management. Tanzania constitution of 1977 through its amendment in 1984 Article 14 provides for the Right to life. Judges relied on the provisions of Article which was interpreted to give a judgment on the right to live in a clean and healthy environment. Due to the fact that article 14 of the Tanzania constitution had contradictions on environmental protection and management, courts in Tanzania had to look for guidance from other commonwealth countries in the search for justification to provide litigants with reliefs in the course of environmental litigation (Massawe,2012). This also faced various problems since countries differ in some legal matters. Then, in 2004, in order to fill the constitutional gap over environmental laws the drafters of Environmental Management Act (EMA) of 2004, introduced a provision in the Act providing for the "right to a clean and healthy environment". Currently, this Act is regarded as an Act which states clearly on environmental protection and management in the country.

Current situation of globalization and environment

It is the naked truth that, Globalization has both positive and negative impacts in all aspects where it happens to exist. Since Globalization involve the process of interaction and integration among the people, companies, and governments of different nations. The process is driven by international Trade and investment which is

aided by information technology (Sunny Levin Institute, 2016) Therefore, this process has effects on environment, on culture, on political systems, on economic development as well as on human physical well-being in societies around the world. A very important aspect of globalization was added by Horst Köhler (2001) the Managing Director of International Monetary Fund. During the Conference on Humanizing the Global Economy, he added that, it is an increasing free flow of ideas which influences the prevailing of Globalization. He says that "Globalization is the process through which an increasingly free flow of ideas, people, goods, services, and capital leads to the integration of economies and societies—is not simply being imposed upon us. It is the product of forces for change that are deeply embedded in human nature—the desire for a better life, for new and better ways of doing things, and for expanded horizons and freedom of choice". In short the effects may be categorized; socially, politically, as well economically. When we talk of economic effects of Globalization we are, and indeed in high percentage, referring to the effects on our environment.

Tanzania as a developing country has severely been affected by globalization. Massive effects can be traced back from the years of 1980's; this can be connected with the fall Socialism in Tanzania. Some scholars also add that the fall of USSR in one way or another fueled Tanzania to completely move from Socialism to Capitalism and indeed to the open market system. The following are the effects of globalization in country Tanzania:

Air pollution from excessive emission of carbon dioxide gas due to existence of industries and very old cars. Most industrialized countries now relocate industries in developing countries (McAusland, 2008). Tanzania is a developing country where there are so many industries from countries like China, USA and India. These industries work 24hours a day while producing carbon dioxide gas which is harmful to human health, animals

and the planet in general. Residents of Pongwe in Tanga region have been complaining that the Pongwe Cement Industry has been producing so much dirty air like carbon dioxide gases (Kamatiya Utafitina Uchambuzi Tanzania 2004:13). The residences complained to have breath and chest problems due to air pollution from industries. With respect, old and over used cars from developed countries contribute a lot in air pollution in Tanzania. Only in the city of Dares Salaam it is estimated the total number of imported used cars to Dar es Salaam between 500,000 and 800,000 a year (Shewere, 2013:55).

Water Pollution from Industrial chemicals and fishing through chemicals. Globalizational technologies have resulted to people being able to buy chemicals for easy fishing to get money to feed their family as they are frustrated with the weak economy (Kamatiya Utafitina Uchambuzi Tanzania 2004:11). Chemicals from Industries also have been reported to be a big problem by residents of Kigoto and Ibanda in Mwanza Region Northern Tanzania (Kamatiya Utafitina Uchambuzi Tanzania 2004:13). Chemicals from Industries pollute their water sources which, as a result, people suffer from various stomach diseases. (Figure 1)

Poor plants growth and poor crop cultivation due to overuse of natural resources which in turn causes weather changes. About 76% of Tanzanians rely on agriculture for livelihood (Faura, 2016). Establishment of factories caused emission of greenhouse gasses like carbon dioxide which cause global warming. Recently, in 2017 there have been cases of deaths of many livestock like cows, goats, sheep and donkeys due to the absence of grasses in some areas like Kishapu Shinyanga, Morogoro and Rorya Musoma (Mwananchi 13 January 2017). Animals die, likewise, people suffer from hunger and starvation.

Deforestations from creating space for factories and other infrastructures. Due to globalization some areas have been changed into different usage. For example from Chinese and Oman investments a large area in Mbegani

Bagamoyo which occupies 9,800 hectares has been deforested to change its usage. In implementing the project, primarily, the former President of Tanzania Dr. Jakaya Mrisho Kikwete met with the former President of People's Republic of China Hu Jintao to discuss about the Chinese investment in a Special Economic Zone (SEZ) in Tanzania as a key initiative to stimulate trade and employment creation. From the proposal, the Zone would include an international airport, a deep seaport, factories and satellite communications equipment, and the total value of the investment would be an estimated US\$ 2 billion (Johnson et al., 2009:3) After long discussions, contracts came into being with various agreements, projects envisaged in the Special Economic Zone area include the development of industrial parks (US\$120 million), establishment of tourism parks (US\$70 million), free port facilities (US\$90 million), a free trade zone (US\$70 million), science and technological parks (US\$50 million), an international business center (US\$70 million), and construction of industrial sheds (US\$20 million)

In March 2013 the President of China Xi Jinping visited Tanzania where he witnessed the signing of a number of bilateral agreements on Economic, Trade and Cultural Cooperation. Likewise, the delegation from the Sultanate of Oman led by the Minister for Transport and Communication, Sheikh Abdullah Al Saadi, visited Tanzania to witness the laying down of the foundation stone for the SEZ project. Thus, this 'Globalizational' project will be developed under tripartite agreement of the government of Tanzania, China Merchants Holdings International (CMHI) from China, and State Government Reserve Fund (SGRF). Constructions of the 190 industries led to deforestations.

Deaths and migration of some animals to other areas caused by deforestation and construction activities. When a country agrees business collaboration with other countries in establishing some projects, obviously, there are some areas which will be affected since the projects never get constructed on air. Thus, the places which

Economic Structure as % of GDP 2014 Estimate

Source: NKC Research

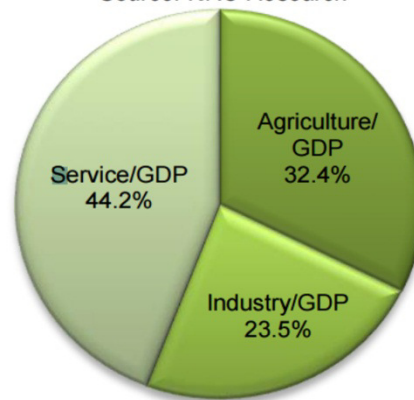


Figure 1. Level of Industries Presence in Tanzania

Source: Faura M.H (2016)

used to be the habitat of certain kinds of animal species will not be favorable to these living organisms because of deforestation anymore. Tanzania is a home to about 20% of Africa's large mammals (National Environmental Report, 2014). From the deforestation in Mbegani-Bagamoyo areas some living organisms like snakes and other couldn't survive. The building of tarmac road from Mwigumbi Kishapu to Maswa in Shinyanga region has some environmental effects. The road is being deviated from the original road and hence mountains and some areas with forests are being destroyed. In many mountains in Shinyanga region, is a home for various living organisms like Hyena and snakes the same also applies to the new standard gauge railway construction project from Dar es Salaam region to Kigoma and Mwanza covering 1088kilometers and 1145 Kilometers respectively. Furthermore, cutting down of tree for other needs like Timber and minerals disturbs animals' life. A good example is found in Gombe National Park Kigoma region, Chimpanzees is one of the endangered species. (Environmental report: 2014:19)

International animal business, poaching, and hunting through modern technology has resulted to the

disappearance and reduction of animal species. Undeniably, science and technology which indeed facilitates Globalization in Tanzania has resulted to existence of illegal hunters and fishermen. They use modern technology to capture the species. Likewise, international business like animal selling business have big effects on Tanzanian animals. Up to 2011 (Before the Tanzania's Government banned Wildlife exports) there were more than 180 companies licensed to export wildlife to zoos in US, Europe and Asia. Several cases have been reported in Tanzania like the smuggled 152 animals and birds worth \$110,000(Euro 66,700) in 2010. Among the stolen wildlife included 68 gazelles, 2 Impalas, 4 ground hornbills, 2 lappet-faced vultures and four giraffes (The Citizen Dec 1, 2013). The Wildlife were transported from Kilimanjaro International Airport to Doha Qatar in November 2010 by the Qatar Military Cargo Plane aircraft C17 under registration MAA/MAB. Moreover, several other related cases were reported at the Mwalimu Julius Kambarage Nyerere International airport in Dar es Salaam.

There have been various cases of illegal fishing which cause the unbalanced diversity of living organisms on

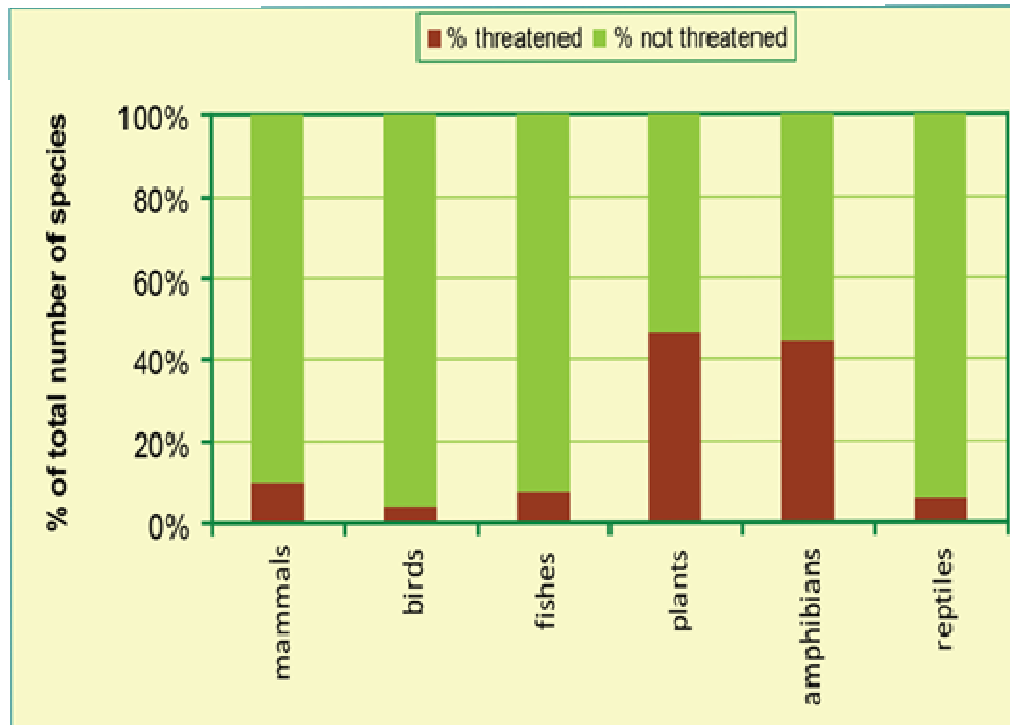


Figure 2. Biodiversity diagram in Tanzania
(National Environmental Report 2014)

earth. According to the European Union (EU) sources, Tanzania was reported to be losing fortune due to illegal fishing. The number of ships illegally scooping fish stocks from Tanzania Territorial water at 70 had been regularly reported. The pirate fisherman reported to be caught in 2009 targeted tuna, kingfish, lobsters, and prawns. A well-coordinated operation, mounted jointly by Tanzania and South African forces at Exclusive Economic Zone (EEZ) of Tanzania did a good job. They caught a pirate ship with 36 People of different Nationals led by two Chinese citizens, the Ship Captain Hsu Chin Tai and the Ship Engineer Zhao Hanqing. The Ship had 296.5 Kilograms of various fish species. The Suspects were sent to Kisutu Resident Magistrate's Court in Dar es Salaam for further legal procedures. The illegal fishing distorts the balance of various fish species in water bodies. The ecosystem requires biodiversity balance and when it is distorted some living organisms are in danger

(National Environmental Report 2014). (Figure 2)

Destruction of water sources in various areas due to tourism activities. Tourism activities have positive and negative effects. However, negative effects are more serious since they result to high transaction cost when it comes to safeguarding or protecting the environments back. For instance, Zanzibar is the area which is severely affected by Tourism as a result of Globalization. Water sources are destroyed in Zanzibar for making luxurious hotels for tourists. Almost the 194 luxuries hotels in the island do not employ water conservation strategies or wastewater management (Rotaraou, 2013:03). Another example of destruction of water sources is in Kishapu Shinyanga. Mountains which are sources of water, are being sprouted and blasted for paving a way (road) from Mwigumbi Kishapu Shinyanga to Maswa district. (Figure 3)

Land degradation caused by mining activities done by

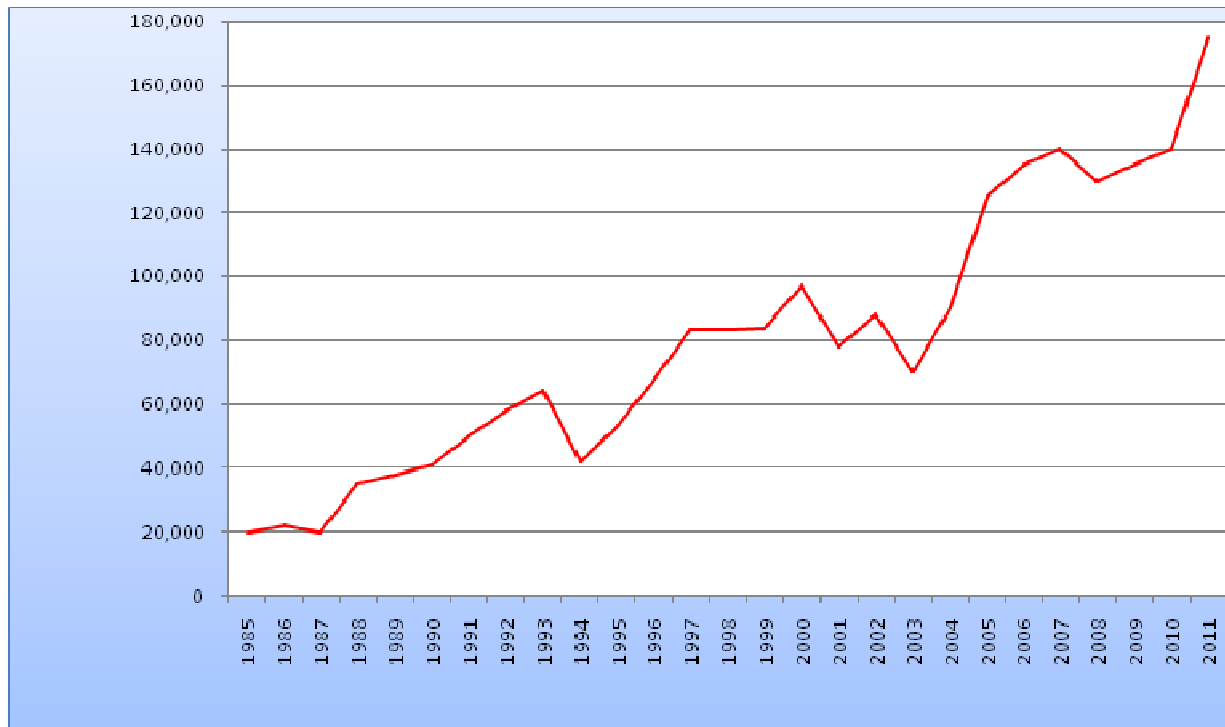


Figure 3. Tourist arrivals in Zanzibar (1985-2011) (Source Rotaraou, 2013:03).

multinational companies. Tanzania is the land with full of minerals. The country has more than eight large scale mines and other several small scale mines (Tanzania Investors guide 2015.9). Mineral investors continue to exploit different areas with mineral reserves like Gold (2,222 tones), Diamonds (51mil. tones), Coal (5bil. tones), Tanzanite (12.6 mil. Tones - The only found in Tanzania all over the world), Uranium (160mil tones), Graphite 158.2mil tones, Iron Ore (126mil tones), Copper (13.7mil. tones) Rare Earths (101 mil. Tons) and many others (Tanzania Inverstors guide 2015.17). Mining activities have destroyed lands in respective areas. Mining activities in Mwadui Shinyanga, Musoma and BulyanhuluGeita are good examples of globalizational effects from these multinational companies. A study done at Bulyanhuluriver, showed that Mining activities done by Bulyanhulu Gold Mine Company causes pollution of the river's water and that it was harmful for human consumption (Nkuli, 2008). In Tanzania, it remains clear

that, most of the large-scale mining companies comply with national rules and regulations of the mining sector but they are reluctant to go beyond compliance because this is not a legally binding requirement. The mining companies argue that they pay all the required taxes and royalties to the government and therefore it is the government's responsibility to return some of the mining revenues back to the local communities for development (Pallangyo, 2005:67). including environmental protection. *Ice melting due to weather changes which also causes disappearance of unique organisms.* Increasing in temperature due to weather changes affects humans and everything on earth, this can be proved by the reduction of ice on the highest Mountain in Africa, mount Kilimanjaro. Tanzania has extensive diversity of species with at least 14,500 known and confirmed species and is among 15 countries globally with the highest number of endemic as well as threatened species (National Environmental Report, 2014). Global warming is caused

by many factors. The causes are divided into two groups, natural causes and man-made causes (Hofstrand, 2013). Human activities Like cutting down trees for charcoal, firewood and furniture as well as Factories that are found in Moshi Kilimanjaro are the causes of the increase in carbon dioxide gas. Factories produce a lot of carbon dioxide gasses, trees inhale carbon dioxide gas, in the absence of tree then carbon dioxide gasses is nowhere to be absorbed than going up the sky. Water vapor (H₂O) and carbon dioxide (CO₂) are the two largest contributors to the greenhouse effect. Greenhouse gases are present only in trace amounts, but can still have a powerful warming effect due to their heat-trapping abilities and their long residence time in the atmosphere (NOAA, 2005:2). Glaciers are home to some of the most unique organisms and ecosystems on Earth. For example, the tiny ice worm spends its entire life on ice, roaming over glaciers at night, feeding on glacial algae, and occasionally being snatched up by a hungry snow bunting. The physiological adaptation that allows these worms to survive at 0°C remains unknown, and because these worms disintegrate at temperatures over 5°C, their secret may be lost as temperatures rise and their glacial habitat melts away (Combes et al., (2009:02)) However, I must point out that, there has been a long debate to whether human activities are causing the melting of ice or natural factors causes it . Doug Hardy, a glaciologist from the University of Massachusetts at Amherst, in his study he says the nearby Indian Ocean has warmed the ice of Mount Kilimanjaro. There is too little data to blame the ice loss on increasing atmospheric temperatures. It is entirely reasonable that, yes, the glaciers are going away on Kilimanjaro in response to global warming, but the link is via Indian Ocean-driven circulation patterns rather than via a warmer atmosphere (Hardy, 2007)

In respect, however, some scientists say the increase in carbon dioxide gas has no effect on the increase of temperature. Robinson and others, in their study concluded that there are no experimental data to support the hypothesis that increases in human hydrocarbon use

or in atmospheric carbon dioxide and other greenhouse gases are causing or can be expected to cause unfavorable changes in global temperatures, weather, or landscape. There is no reason to limit human production of CO, CH, and other minor greenhouse gases as has been proposed (2007:89)

Concentration of people in one small area causes existence of unstructured settlements which results to disasters like floods and death. Due to globalization, economic activities have been centered in just few parts which make people to migrate finding jobs. Dar es Salaam is regarded to be the much affected region due to globalization. A lot of factories and modern infrastructures like roads and international airport are found in Dar es Salaam region. Many people tend to migrate to this city finding jobs in factories and hence they end up living in restricted areas. Every year a number of people are reported to be affected by floods. The areas which the city preserved as open spaces for other activities or to allow the flow of water to Indian ocean are now occupied by people. The people's settlements block the water passage to Indian Ocean due to having many houses built without special permission from Land Specialists or other government officials. Since 2011 massive floods have been experienced in the city which cause death as well as leaving many others homeless (Keyyu, (2012). Dar es Salaam is a small area but with a lot of people According to the 2012 National Census the people who were living in Dar es Salaam were 4,364,541, moreover the number in this year 2017 is more higher due to the fact that, there is a Net Increase of 1 person every 18 seconds(World Population Review: 2017) The area is just 1,300 square kilometers (Wilison, 2004), it is among the most highly populated areas of Tanzania (with, Government Primary Schools 377, Private Primary Schools 286, Government Secondary Schools 138, Private Secondary Schools 186, Hospitals 42, Health Centres 58 and 436 Dispensaries (Regional Commissioner Office Website:2017). (Figure 4)



Figure 4. Unplanned settlements/buildings in the Overpopulated Area of Dar es Salaam (Photo by Sunbird, 2016:15)

How the Country reacts on the issues?

Regarding the internationally accepted environmental protocol, Tanzania has been trying hard to implement environmental protection and management policies under the very serious President, Dr John Joseph Pombe Magufuli. The president also chose a serious and full of energy gentleman Honorable January Yusuph Makamba to be the Minister for Environment.

The Government of the United Republic Tanzania is seriously working in a responsible way to solve environmental problems. Increasingly, however, still, it faces so many challenges. As Cleary defined in the book *Globalization and World Politics* by Professor Zhao Shurong (2017:317), environmental governance refers to the process of decision-making involved in the control and management of the environment and natural resources, through application of all its four principles. The key principles are i) Embedding the environment in

all levels of decision-making and action, ii) Conceptualizing cities and communities, economic and political life as a subset of the environment, iii) Emphasizing the connection of people to the ecosystem in which they live, and, iv) Promoting the transition from open-loop/cradle-to-grave systems to closes-loop/cradle-to-cradle systems.

The Division of Environment in the United Republic of Tanzania was established in 1991 under the Ministry of Natural Resources and Tourism. In 1995, it was transferred to the Vice President's Office to give it the requisite priority and attention on promoting management environmental agenda. It is entirely responsible for the overall environmental policy and regulation, formulation, coordination and monitoring of environment policy implementation in Tanzania. Furthermore, this division in the Vice President's office is responsible for coordination of national and international matters related to environmental conservation and

management. Sector Ministries, National Environment Management Council (NEMC) and Local Government Authorities are the institutions formulated intentionally with the enforcement role in environmental management. The National Environment Management Council (NEMC) came into being in 1983 when the Government enacted the National Environment Management Act No. 19 of 1983. NEMC was established with a broad mandate in response to the national need for such an institution to oversee environmental management issues and also implement the resolutions of the Stockholm conference (1972), which called upon all nations to establish and strengthen national environmental Councils to advise governments and the international community on environmental issues.

The enactment of Environmental Management Act No. 20 of 2004 (EMA, 2004) by Parliament in October 2004, repealed the National Environmental Management Act No.19 of 1983 and re-established NEMC. EMA 2004 provides for a legal and institutional framework for sustainable management of the environment, prevention and control pollution, waste management, environmental quality standards, public participation, environmental compliance and enforcement. Furthermore, it gives NEMC mandates to undertake enforcement, compliance, review and monitoring of environmental impacts assessments, research, facilitate public participation in environmental decision-making, raise environmental awareness and collect and disseminate environmental information. Thus, NEMC vision is to excel in sound environmental management in order to assist the nation fulfill its aspiration for sustainable development while its mission is to ensure protection of the environment and sustainable use of resources for enhancing the quality of lives of the people of Tanzania.

Further, Tanzania has ratified several of the Multilateral Environmental Agreements. During the 1992 UNCED held in Rio de Janeiro, Tanzania, together with other countries, made a declaration to abide by the principle of sustainable development

The government is signatory and has acceded to a number of other international and regional environmental treaties (Pallangyo, 2007:29) as follows:

- ◆ Convention on Biological Diversity ratified on 8 March 1996;
- ◆ Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region and Related Protocols ratified on 1 March 1996;
- ◆ United Nations Convention to Combat Desertification ratified in April 1997; • United Nations Framework Convention on Climate Change ratified in April 1996;
- ◆ The Vienna Convention on the Protection of Ozone Layer and Montreal Protocol on Substances that Deplete the Ozone Layer acceded on 7 April 1993 and 16 April 1993 respectively;
- ◆ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal acceded on 7 April 1993 and, • Bamako Convention on Ban of the Import into Africa and the Control of Transboundary Movements of Hazardous Wastes within Africa ratified on 7 April 1993.
- ◆ Bamako Convention on Ban of the Import into Africa and the Control of Transboundary Movements of Hazardous Wastes within Africa ratified on 7 April 1993.7

The United Republic of Tanzania has been and it is still taking seriously the following initiatives;

The government enacted law to preserve environments while taking on various economic activities. Globalization through international economic activities should not be the reasons for destroying environment, for instance, the Tanzania Investment Act, 1997 stipulates that one of the functions of the Investment Promotion Center (IPC) is to

liaison with appropriate agencies to ensure investment projects use environmentally-sound technologies and restore, preserve, and protect the environment. Under this important step, IPC vets unscrupulous investors who may want to maximize profits at the expense of the environment (Pallangyo, 2007:32)

Reviewing of environmental policies for environment protection with the current situation. The policy which the Government is using was adopted in 1997. Policy has been reviewed and updated for it to have more impact on ecological conservation and management in the country. The Minister of State in the Vice- President's Office (Union and Environment) January Makamba, appeared before the media announcing that, among the things which were considered in the review were economic transformation, globalization and climate change which were not included in the first policy.

Establishment of various commissions with focus on both economic development and environment protection. For instance, Tanzania made concerted efforts to alleviate environmental concerns with a view to achieving sustainable development (Pallangyo, 2007:29). The Planning Commission under the President's Office is charged with national development planning and economic management. The main function of the Planning Commission is economic management and coordination of development activities including integration of environmental concerns in development planning.

Introduction of an environment information system that will have accurate data to inform the general public about environmental problems and measures. In dealing with environmental issues the whole public is supposed to be exposed to issues related to environment so that they can be ambassadors in environmental protection rather than leaving it to only government officials. In October 2017, The Minister of State in the Vice- President's Office

(Union and Environment) January Makamba ordered NEMC to make sure the system be ready by June this year 2018.

Effective deterrence of the use of air pollutants producers. Principle 16 of the Rio Declaration states that individual countries should endeavor to internalize their environmental costs through the use of economic instruments. The same principle also states clearly that the polluter must pay for the damage which arises as a result of his/her activities. Intentionally, nonetheless, high tax has been imposed to the old or used cars from developed countries like Japan, USA and England. Technically, the old cars due to being overused they do produce a high amount of gasses and dusts which pollute the environment. Thus, to discourage this issue the government charges less tax to modern environmental-friendly cars than to those old ones.

The national education curriculum has integrated biodiversity knowledge in the teaching and learning processes; In order to ensure meaningful and effective biodiversity conservation, there has been subjects and topics in primary and secondary schools aiming at exposing the students in environmental issues (National Environmental Report: 2014:51). Similarly, Environmental related programs are taught in various Universities in Tanzania. A good example is a programme in environmental Sciences which is offered by the college of Natural Sciences and Applied Sciences up to Ph.D. level at the University of Dar es Salaam. Likewise at Law schools there are emphasis in Environmental Law specializations. Before the year of 2000, there were very few Environmental Law experts who also got their education abroad (Massawe, 2012). Moreover, there has been continued emphasis to mainstream biodiversity conservation into relevant national development and planning frameworks, sectorial policies and strategies, and activities of non-state actors. The Government has established environmental units in all Sector Ministries

and continues to designate Environmental Management Officers at all levels of Local Government Authorities. A Special Environmental Police Unit has been established in the Tanzania Police Force in order to strengthen environmental enforcement. Biodiversity conservation has been mainstreamed explicitly or implicitly in a number of national development frameworks including Tanzania Development Vision 2025; National Strategy for Growth and Reduction of Poverty (NSGRP) (2010-2015); and National Environmental Action Plan (NEAP) (2013-2018). Relevant sectors have also taken various measures to mainstream biodiversity into their policies, strategies and plans. (National Environmental Report, 2014). Also the Science and Technology Policy, 1996 singles out the following subjects for inclusion in the national curriculum: the study and prediction of climatic and global change as a result of human activity on the environment; environmental pollution including water and air pollution with the disposal of toxic and radioactive wastes; disaster management; energy conservation; environmental conservation and enrichment; the effects of chemicals, drugs, pharmaceutical, fertilizers, etc. on biodiversity. The National Nuclear Technology Policy (2013) addresses issues of environmental protection against the effect of nuclear technology application. On the other hand, the National Research and Development Policy (2010) aims, among others, at minimizing the effects of research undertakings on the environment and promoting research that is beneficial to environment, (National Environmental Report:2014:51).

Effective monitoring of Mining activities. Mining legislation requires the mining operators that deforestation is mitigated through progressive rehabilitation programmes conducted during mine operation which include land reclamation, tree planting in reclaimed areas as well as defined closure measures. ;(National Environmental Report:2014:51)

Promotion of sustainable exploitation, utilization and

marketing of fish resources to provide food, income, employment and foreign exchange earnings. There has been effective protection of the aquatic environment through the National Fisheries Sector Policy and Strategy Statement, of 1997. The Government is also implementing Fisheries Sector Development Programme (FSDP) to ensure sustainable fisheries resources management and conservation of biodiversity.

Effective carry out of Strategic Environmental Assessment (SEA) for the Comprehensive Transport and Trade System Development Master Plan in 2014. Tanzania has also prepared Railway Environmental Management Guidelines and Civil Aviation Environmental Management Regulations and Guidelines. Public awareness is also carried out through different pathways including Exhibition of World Maritime Day and other relevant national commemorations.

Conservation of biodiversity by advising the government on policies related to environmental management to 53 Fifth National Report on the Implementation of the Convention on Biological Diversity participate effectively in economic empowerment and biodiversity conservation. The Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA) has formed a committee responsible for promoting integration of environmental issues into company policies and awareness raising of the business community on environmental issues, (National Environmental Report:2014:51).

Creation of favorable social-political environments and Encouraging the formulation of Non-Government Organizations by Tanzanians and Non Tanzanians. These are the groups which provide much efforts in the conservation of biodiversity. They are very instrumental in environmental advocacy at community level. Moreover, currently, there are over 100 active local and International Non-Government Organizations in the country. These NGOs are located both in Urban and in Rural areas, with

dignity and respect, they help in the creation and dissemination of environmental protection awareness among educated and uneducated citizens.

Mainstreaming biodiversity in relevant programmes. Major programme being implemented in the country have mainstreamed issues of biodiversity conservation. An example of these major programmes are:

i) Lake Victoria Environmental Management Programme (LVEMP II): This is a transboundary project designed to achieve two development/ global environmental objectives. Firstly, the project is meant to improve collaborative management of transboundary natural resources of Lake Victoria Basin and, secondly, reduce environmental stress in the targeted pollution hotspots and selected degraded sub-catchments as a means of improving the livelihoods of communities who depend on the natural resources of the Basin. The programme has two components relating to biodiversity conservation. These are water shed management and point sources pollution control. Implementation of these components ensures that biodiversity of this important ecosystem is being conserved.

ii) Lake Tanganyika Integrated Management Project: The aim of this project is to produce an effective and sustainable management system for managing and conserving the biodiversity of Lake Tanganyika and its basin. Biodiversity issues have been mainstreamed in this programme through interventions related to catchment management and pollution control through wastewater management. (National Environmental Report: 2014:53)

CONCLUSION AND SUGGESTIONS

Conclusively, it remains clear that, environmental issues offer many challenges in the contemporary world. It becomes incredibly contradictory and indeed a considerably dilemma when it comes to development

versus environmental issues. Modern societies face tradeoff between a clean environment and a high level of income, as one of the principles of economy states. Nevertheless, the most important thing to take into serious consideration is being innovative in taking care of environment during implementing economic activities. Currently, Tanzania is on the implementation of five big projects in collaboration with other countries as investors. Bagamoyo Port 22.3 Trillion TZS, Oil Pipeline from Tanga to Uganda 8 Trillion TZS, Expansion of the capacity of the Dar es Salaam port 336bn TZS, Standard Gauge Railway 2.7 Trillion TZS and extension of Mwalimu Julius Kambarage Nyerere International Airport 560bn TZS. For justifying sustainable developments, these projects need to go hand in hand with environment protection and management such as waste management, using modern machines which produce less harmful gasses and seriousness in the policy of trees planting. Additionally, among the challenges that faced Tanzania after acceding to the Rio Declaration was in the taking of necessary legislative steps to ensure sustainable development. Tanzania made strenuous efforts to alleviate environmental concerns with a view to achieving sustainable development although progress in many areas remains slow due to its citizen's economic and educational low level. Most citizens living in rural areas depend on exploiting natural resources and ecosystem services for their survival, such as cutting down trees for firewood as a source of energy for cooking. Besides, in the daily conduct of public policies, and to deal with complex and differentiated environmental issues Tanzania is increasingly challenged with the existence of a large number of committed environmental experts (both lawyers and scientists). The country is obliged to adopt more education curriculums in colleges and universities for environmental protection in relation to innovation for sustainable development. Protection is better than cure, Tanzania should know that most countries are highly developed but they suffer from environmental problems for example in most parts of China it has become normal

to walk with masks for dirty air prevention. Likewise, western countries use more money to protect the environment.

ABBREVIATIONS

Bn-Billion

CMHI- China Merchants Holdings International

CO₂- carbon dioxide Gas -Carbondioxide, Oxgen)

COSTECH- Tanzania Commission for Science and Technology

EMA- Environmental Management Act

H₂O -Water vapor -Hydrogen, O-Oxygen)

IPC- Investment Promotion Center

Mil - Million

NEMC- National Environment Management Council

NEMC-National

Ph.D- Doctor of Philosophy or Philosophiae Doctor (latin).

SEZ –Special Economic Zone

SGRF- State Government Reserve Fund

TZS-Tanzanian Shillings

UNCED- United Nation Conference on Environment and Development

URT- United Republic of Tanzania

US – United States of America

USSR-Union of the Soviet Socialist Republics

\$ - United States Dollars

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