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NGO LBI Report: LBI Greenbelt Movement for promoting mainstreaming of Biological Diversity in Kenya (Aichi Target 1, 5, and 14)

Aichi Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Aichi Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Aichi Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable

-.*Excerpted from CBD*

1. Introduction

In order to involve more people in activities that contribute to biodiversity conservation, various groups of people need to deepen their understanding of the value of the biodiversity. Biodiversity has a cultural value, a value as a component of the living environment, and an economic value (CBD, 2016). The existence of diverse life forms is in itself valuable. Deepening understanding of the various values of biodiversity is important. Civil society can contribute to achieving Aichi Biodiversity Targets (Aichi Target) by conducting education activities and initiating community collective environment actions on biodiversity. The education activities could include: holding nature observation meetings for employees, their families and local residents; conducting in –house education; and organizing hands-on experience events for planting trees and the conservation of community natural scene (CBD, 2016). It is important for civil society to disseminate information about their activities to the public.

NGO Little Bees International (LBI) started aid actions in Korogocho, an urban informal settlements of Nairobi, Kenya in 2013, facing many devastating challenges such as poverty, violence and health issues that have remained unresolved. In order to address such serious community issues, LBI has taken environmental oriented approach based on 3R (Reuse, Reduce, and Recycle) to reform the community because environment conservation is the basis for human well-being. Korogocho that is the targeted area of LBI actions is the third largest slum in Kenya with 200,000 people forced to live under the World Bank poverty line of USD 1.25 per day. Korogocho means “useless” in Swahili.

Korogocho originally started as a waste site of Nairobi, the capital of Kenya, but in the 1980s poor and vulnerable people began to settle in from downtown areas in Nairobi. Therefore, it has been categorized as a discriminated area for years with the stigmatized area, and many people from Korogocho are struggling to get jobs and to put food on the table for themselves and their families. Residents of this informal settlements also suffer from HIV & AIDS, and a lack of security, and many children have no access to education. The main reason for the situation is lack of opportunities for education, employment and training especially for women, youth and girl students.

LBI is named after the symbol of diligent 'bees' in eco-system service, hard-work and collaboration corroboration of individuals by Korogocho people. LBI, officially registered NGO in Kenya as well as in Japan, contributes to empower the people for a better future with hope. LBI's mission is to promote the empowerment of disadvantaged and marginalized women, children and youth in urban informal settlements in Kenya to relieve poverty through the promotion of education, quality healthcare and sustainable development initiatives with environment oriented approach in the mainstreaming of Biological Diversity in community development.

For the women, LBI is organizing a women's group, Korogocho Smart Women Group, consisting of single mothers and HIV-infected women, to promoting income generating green activities through a recycling project, school bags production by utilizing waste materials produced from the adjacent factory, with tangible and practical training programs for improving capacities of qualities. In 2016, we have over 40 members.

For the children, the education project of LBI is to manage the community school, Amani (Peace) Education Center in Korogocho. The center has been providing the opportunity for quality education for the street children and orphans under the initiative of Michael Otwera, the head teacher and the board of LBI. The center is a driving force to support planting the seeds of hope for the vulnerable children that are left behind in Korogocho with various programs such as the feeding program, distributing textbooks, desks and chairs, sponsorship for girl students for advancing education and constructing a school project.

For the environment, LBI is taking an environmental approach to solutions based on Aichi Target 1, 5 and 14 funded by Global Environment Fund for sustainable development through environmental education and collective environment actions following the Greenbelt Movement of Prof. Wangari Maathai, a Nobel Peace Laureate, as a model platform. We also coordinate an environment seminar to cultivating awareness for environmental matters on climate change and biological diversity among community people with the educational training programs for Community Environment Workers (CEWs) as community environment leaders.

2. Environmental Background in Korogocho.

Korogocho slum is one of the largest informal settlements of Nairobi, Kenya. Its residents consist of more than thirty ethnic groups while most are from the kikuyu, luo and luhya people.it has about 200000 to 220000 people on 1.5 square kilometers of land owned by the government of Kenya. The slum has 9 villages i.e. korogocho A, korogocho B, Grogon A, Grogon B, Gitathuru, Kisumu, Ndogo, Ngomongo and Nyayo (LBI, 2016).

Korogocho is characterized with environmental issues as defects of waste management and disposal of solid wastes. As a centre of population and human activities, there is consumption of natural resources from both near and distant places. Previously the Korogocho slum was experiencing problems with its vulnerable garbage collection and disposal systems and breakdown of sewages. These days, the waste disposal has been a major issue in the area in terms of ensuring sound waste management and open sewages for sustainable development. There are also issues of poor housing lack of basic infrastructure services as clean water and sanitation. Pollution has been basically from the domestic wastes which contribute to poor environment and dirty the river environment around the area.

The Korogocho environment is mainly characterized by the following:

- Solid waste management. The area has lots of solid wastes that are thrown everywhere within the area. There is the largest dumping site just beside it making the residence of korogocho less concerned about waste management.

- Air pollution. Korogocho residents are exposed to be the high risk of air pollution borne disease. such as respiratory malfunction, asthma and tuberculosis. Dust and smell are the major contributes of air pollution in the area. Dust that pollutes the air comes from the unpaved roads, unpaved pedestrian accesses and open spaces. This dust can highly lead to respiratory effects, eye infections, food and water contamination and also body irritation. Air pollution by smell results from garbage, pit latrines, waste waters, scattered human wastes, polluted water ways and stagnant waters. This smell can lead to respiratory effects, discomfort, irritation, vomiting, loss of appetite and also headaches.

- Noise pollution. This pollution is contributed by several factors as blacksmith activities, loud music from electronic shops, and noise from bars and from religious gatherings.it can result to hearing problems, headaches, disruption from sleep and discomfort.

- Water pollution. It results from solid wastes, water drainages, overflowing pit latrines, human

waste and siltation. Water pollution leads to water borne diseases and smelly water.

- Safety and security situation. When you are a visitor or a new person in this area you do not feel safe, there are so many idlers just staring at you. There are crimes that are well known of the area as petty theft, burglary, rape, robbery and also murder cases. Youths are victims of dwelling in these criminal activities.

3. LBI "Mottainai" Greenbelt Movement (GBM)

"Mottainai", originally from Japanese indigenous philosophy, means to show respect for the resources around you, and to use them for not wasting with a sense of gratitude (Taylor, 2015). The concept is closely associated with the conservation practices that are most commonly recognized as the three R's – reduce, reuse, and recycle – with a fourth R for respect. Professor Maathai that was impressed by the concept founded and promoted the Mottainai campaign in Kenya to prevent contaminating waste plastic with the natural environment. Under the outstanding leadership and initiative of Professor Maathai, GBM's campaign has successfully impact on government policy for change against the adequate production and sustainable use of plastic materials that are un-recyclable. Professor Maathai said "When we plant trees, we plant the seeds of peace and seeds of hope." (The greenbelt movement, 2016).

Why does LBI promote Korogocho Greenbelt Movement? The reasons are following:

- To improve the living condition of the Korogocho residents
- To prepare sustainable integrated plan for upgrading Korogocho slum
- To implement concrete improvements to ensure visible impacts.
- To mitigate climate change by planting trees and also enrich biodiversity.

Deforestation and forest degradation contribute around 17 percent of global greenhouse gas emissions. To keep global temperature rises to within 2 degrees of preindustrial levels, we need to reverse the trend of deforestation and engage in large scale reforestation. Planting trees is a simple solution to mitigating climate change while enriching biodiversity (UNEP SBCI, 2009). The UNEP SBCI report (2009) stated that trees absorb CO2, reduce soil erosion, produce life-giving oxygen, provide habitat for wildlife, and are a legacy for future generation. Under the patronage of Professor Wangari Maathai, the billion tree campaign is raising awareness of the interdependence of humankind and the planet's ecosystems, as well as the links between tree planting and climate change mitigation, the restoration of biodiversity, air and soil quality, and food security (The greenbelt movement, 2016).

3.1 . Recommended trees for greenbelt actions in Korogocho

Greenbelt movement is a community collective green action with well selected and adequate species of trees for preserving of the biological diversity and eco-system service of the community. The loss and fragmentation of habitats are believed to have the largest impact among the factors which cause the loss of biodiversity. In addition to the protection of natural ecosystems, our immediate natural environments and even green spaces can be precious habitats for locally occurring organisms, if they are managed by taking biodiversity into consideration. Harmonization with surrounding natural environments and the creation of ecosystem networks lead to less fragmented habitats, and therefore they also contribute to achieving Aichi Target 5.

The following trees are our recommending trees for GBM in Korogocho.

- CASUARINA EQUISETIFOLIA.

A she oak species whose native extends from Burma and Vietnam throughout Malesia east to French Polynesia, new Caledonia and Vanuatu and south to Australia. It's an evergreen tree growing to 6-35m tall.

ADAPTATION

Rainfall: 700-2000mm and can do well in dry seasons..

MMT: 22 -27degrees Celsius

Soil: ph. of 5.0-7.7.all kinds of soils apart from clay.

Growth: faster.

USES

Prevents soil erosion / Acts as wind breakers / Used for shingles and fencing / The branches when harvested are said to make excellent hot burning firewood. / It's an actinorhizal plant able to fix atmospheric nitrogen.

(Albrecht, 1993, Beentje, 1994 and Noad, 1989)

- CROTON MEGALOCARPUS

Grows to 15-35m.it has a distinctive layering of branches and a rather flat crown. Has a bark that is dark grey, rough and crackling.

ADAPTATION

MAT: 11-26 degrees Celsius

MAR: 800-1900mm

Growth: faster

USES

Fodder. The seed is incorporated in poultry feeds as its protein content is high (50%) / Fuel: well dried nuts are used together with charcoal as firewood / Medicine: seeds contain up to 32% oils which have

been used favorably as medicine. / Shade: forms a flat crown and has horizontal layers of branches which make it useful in providing light shade. / Used also a fences.

(Albrecht, 1993, Beentje, 1994 and Noad, 1989)

- ACACAI XANTHOPHOLEA(fever tree)

A large tree 15-25m tall with a crown that is somewhat spreading. Its bark is smooth, slightly flaking, and yellow to greenish yellow.

ADAPTATION

Altitude: 600-2100m above sea level

Soil: sandy soils

Temperature: can tolerate several degrees of frost

Growth: faster.

USES

Erosion control: groves of this tree can be planted next to rivers and streams on the farm to curb soil erosion. / Provides shade / Fixes atmospheric nitrogen / It's a decorative tree / Used as fences / Leaves and branches are fodder for livestock.

(Albrecht, 1993, Beentje, 1994 and Noad, 1989)

- OLEA AFRICANA(Africana olive)

A shrub or a small to medium sized tree 5-10m in height. Bark is grey to brownish-blackish, smooth to rough when old.

ADAPTATION

Altitude: 800-2500m above sea level

Rainfall: resistant to drought

Temp: resistant to frost

Soil: all soils including acid soils

Growth: faster

USES

Produces hard wood timber / Fodder for livestock / Source of fuel / Medicine: the root or bark decoction is used as a remedy for malaria / Food: the main olive products are olive oil and edible olives.

(Albrecht, 1993, Beentje, 1994 and Noad, 1989)

4. Challenges on greenbelt movement, community forestry ecosystem service management and next steps in Korogocho

Ecosystem services are essential for people's lives and livelihoods, local communities and economic activities. The well-being of population is drastically and closely relied on community based ecosystem service (CBD-COP13, 2016). As the theme of CBD-COP13 is "*Mainstreaming biodiversity for well-being*", the management of ecosystem is a dominant factor affecting the chances of success in fighting poverty and in attaining human development. Long term forestry management is a key to successful community ecosystem circulation; however, there are main two constraints for sustaining sound planting trees management in Korogocho: one is security. There are so much insecurity in the area that one is too much careful of walking around for management and participatory community actions. Their mobile phones, money, cameras and other gadgets are usually snatched from them in the street. Especially, the issue of youth gangs who cannot have education and employment are social phenomena in informal settlements in Kenya. Another is pollution. The pollution of water, air and soil in Korogocho is causing biological diversity loss and the degradation of ecosystem functions. There are smells of all kinds in the area and also the dust in the area that makes the health condition of residents very uncomfortable and vulnerable.

For improving the security in Korogocho, LBI helps the children and women groups to support each other for protection they tend to stuck in the deteriorating situation due to lack of moral and financially support. In fact, LBI initiates universal quality education project for street children and orphans and promotes activities for encouraging women group to establish their own tree nursery.in this they can be able to plant more trees in the area from their own nursery. They can also sell the seedlings in the markets as a cash crop. Organizing and educating Community Environment Workers (CEWs) as community environment leaders for implementation is also a core action for LBI to ensure sound ecosystem service in the community through sharing local traditional knowledge and skills.

For the waste management, the recycling of materials greatly affect biodiversity. Addressing the issue contributes to the conservation of biodiversity. One of effective way to do this is to reevaluate the actions regarding the effective utilization of materials from a biodiversity standpoint. A reduction in the volume of waste dumped in disposal sites by taking actions for a sound material-cycle society will reduce the number of landfill sites in Korogocho and therefore reduce their impact on biodiversity. For solid waste management, the main contributors of solid wastes are the households. In local community unit such as the nine villages in Korogocho, high ridge has their individual village leader's lead in the waste management process. However, this community based service mechanism has not been fully under management since leaders are regularly reluctant to do that. Villages like Highridge, Gitathuru, Kisumu, and Ndogo has the highest individuals contributing to solid wastes. The rest have a relatively low contribution. With the intervention of the LBI programs, there have been a change in waste disposal. The scheme of the National Youth Service in collaboration with CEWs that are undertaking the waste management services have offered the residents of Korogocho job

opportunities where they are being used to clean up the area on a weekly payment. The cohorts that assemble at their respective villages based on regular schedule are provided with brooms to sweep off their area. They clean all the roads, unpaved roads and get dirt from the households. They also collect all the waste materials that may have been dropped in the small drainages and rivers in the area. This routine is carried out every day. Beside the sweeping and the collection process, they take all the wastes in the dumping site which is just across the river.

5. Conclusion

The strategic plan for biodiversity 2011-2020, “Aichi Biodiversity Targets”, was adopted at the 10th meeting of the conference of the parties to the convention on Biological Diversity (CBD-CO10) held in Nagoya, Aichi in 2010. The Aichi Biodiversity Targets are the targets that the international community should achieve in the field of biodiversity by 2020. The achievement of the targets requires activities by all parties including local governments, research institutes, companies and citizen groups, in addition to the national government. Biodiversity benefits has been being threatened by ignorance of authority and development stakeholders for long years on the full value of natural ecosystem service to us all and particularly poorest. Public and private sectors should, wherever possible, take social actions and conduct biodiversity-conscious management of green spaces within their premises, as well as promote the creation of ecosystem networks around the premises, in order to protect habitats and reduce the degradation and fragmentation of habitats. Civil society cannot afford to wait for the momentum to realize the biological diversity mainstreaming discourse. Just contributes continuous grass-roots actions to construct the way forward to the fundamental solution for sustainable environment for human-well being.

In the actual aids structure, there is a big gap in communication and collaboration between the local actions implementing bodies such as NGOs and CSOs in Civil Society and the institution formulating bodies such as UN and government agencies. Hence, LBI aims at contributing to catalyzing the communication platform to break the gap through the actual implementation for the mainstreaming of biological diversity by a bottom-up approach, in collaboration with Civic

Commission for Africa (CcfA) that is a Pan-African civil society network established in 2007 for engendering a healthy cooperation among Africa development actors in acceleration of Africa's sustainable development and SDGs Kenya Forum for monitoring the implementation process of the agenda 2030 for ensuring sound sustainable development in Kenya.

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