

# Plastic Recycling Project

## Monrovia, Liberia, West Africa

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<b>Implemented by:</b>	Green Cities Inc., Russel Avenue, Sinkor, Monrovia, Liberia
<b>Main Focus:</b>	Production of School Supplies out of Plastic Waste / Raising Awareness & Prevention Self-Sustaining Recycling Processing with Value Chain for Plastic Waste in Urban Liberia Reduction of Youth Unemployment & Opening of Income Generating Opportunities
<b>Project length:</b>	4 Years (2018 – 2021)
<b>Total Costs:</b>	US\$ 588'900.- of which US\$ 153'137.- remain to be covered

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**The «Plastic Recycling Project» does pioneer work in Liberia by processing solid plastic waste and bringing the resource back into the market.**

Green Cities Inc. is a youth based social enterprise operating Liberia's first waste segregation and recycling center called Green Center. This center was constructed by Global Communities with funding from the Bill and Melinda Gates Foundation in 2012. **The goal of Green Cities is to create a clean and green environment through the implementation of a waste value chain.** By collecting, processing and selling waste the local business is creating job opportunities for young people in Liberia.

In collaboration with Cooperaxion, Green Cities started in 2014 to research and pilot on how plastic could be included in the recycling process. In 2015, a plastic crusher and palletizing machine have been purchased for both film plastic, such as water bags (LDPE/HDPE) and hard rubber plastic, such as gallons (HDPE). Water bags, carrying 500ml of water, play a central role in Liberians life: they are often the only source of accessible and clean water affordable. **The high demand of such water bags produces a huge amount of daily waste; therefore, their disposal is an important environmental issue.** Green Cities started to buy collected plastic waste from sensitized community dwellers and through this trade gives vulnerable groups of society an opportunity of income. Manually the products were cut and washed. The new raw material (pellets or crushed plastic) has been sold to local companies for the production of new plastic products.

Within the new project phase, the processing will be mechanized, diversified and supplemented with the production of an end product - school materials like rulers, set squares etc. At the same time the implementers are dedicated to a public awareness of different target groups such as youth and women from densely populated communities as well as businesses like offices or hotels. A special focus lies on school children: **With school materials made out of recycled plastic they can grasp literally that «waste» has value and can be transformed into something useful.** All sensitization workshops focus on the processes of reduce, reuse and recycle of the different waste materials.

The project phase 2018 – 2021 has the following focusses:

- The **mechanization** of cutting, washing, pelletizing/crushing and production of the end products
- **Raising awareness about reduce, reuse & recycle** different waste materials: Sensitization workshops for schools, youth organizations, and markets
- The social business will be **gradually supported to become self-sustaining** and independent
- The initiative shall be **reproduced and multiplied** in other big cities in Liberia

**The «Plastic Recycling Project» will become a self-supporting waste value chain, contributing to a clean environment and generating income opportunities. With the sale of 2.5 kg collected plastic waste, community dwellers are able to buy a cup of rice, Liberians most stable food.**

## Location



Liberia, Monrovia | Green Center (production place of Green Cities) in Sinkor and two of the biggest markets in the communities West Point and Redlight

## Liberia

- At 96,320 km<sup>2</sup> (111,369 km<sup>2</sup> incl. water), Liberia is more than twice as large as Switzerland and has about half as many inhabitants (about 4.7 million)
- The Republic of Liberia was founded in 1847 by the «Americo-Liberians», previously enslaved people from the United States
- There are 16 different ethnic groups living in Liberia. The most common languages are Liberian English, Mande, Kru, Gola and Kpelle
- Liberia exports mainly rubber, iron, wood, diamonds, cocoa, coffee and gold; importing mainly fuels, machinery, foodstuffs such as rice (the staple food of Liberians)
- According to the MPI (Multidimensional Poverty Index), 83.9% of Liberians are at least 30% or more deprived and are therefore considered “poor” according to this index

Recall that 1) a person is considered poor if they are deprived in at least 30% of the weighted indicators and 2) the intensity of poverty denotes the proportion of indicators in which they are deprived:

<http://www.ophi.org.uk/wp-content/uploads/Liberia.pdf> (15.02.18)

<https://www.cia.gov/library/publications/the-world-factbook/geos/li.html> (13.02.18)

## Impressions



*Top left:* Plastics accounts for the largest share of inorganic waste in Liberia. In particular, the drinking water bags cannot be reused.

*Top center:* The waste is often deposited in the middle of the communities, as here in Soniwein directly between the hospital clinic and the market. Very rarely these local deposits are cleaned.

*Top right & bottom left:* Individuals, youth organizations, marketers or companies can sell plastic films and hard rubber plastic per kilo to Green Cities.

*Bottom middle:* The plastic is processed into pellets (foil plastic) and crushed chaff (hard rubber) by the team of young adults from which new products are created:

- Hard rubber gallons are crushed (white chaff) and sold to other companies who fabricate new products such as bottles.

- Plastic water bags are washed, dried and pelletized (greenish/gray pellets) and can either be sold as pellets or Green Cities can produce new products directly from the foil plastic, such as school materials.

*Bottom right:* This initiative is accompanied by raising awareness courses for various target groups on reduction, reuse and recycling of “waste”.

## 1. Context

Since the founding of the Liberian Republic, its past and history of the slave trade have had an influence on Liberia's society up to this day. It is common that the «Americo Liberians» are more privileged than native groups. This was also one of the reasons for the civil war from 1989 to 2003 which consequences are still noticeable today. During the civil war the population in the capital Monrovia quadrupled. The infrastructure did not, and still cannot cope with this concentration of people, therefore the majority of its inhabitants still lives without electricity, water supply and without primary sanitation services. The massive spread of the Ebola-Virus (2014/2015) was a direct result of a long unattended structural problem. However, the non-functional health system is only one aspect of the inadequate infrastructure in Liberia.

According to the charity organization WaterAid America, 3.7 million people in Liberia don't have access to adequate sanitation and 1.3 million people have no access to safe water. As a result, more than 700 children die every year from diseases related to poor sanitation and water access<sup>1</sup>. This could even be worse if there were not the drinking water bags. At a price of 5 LRD<sup>2</sup> for one water bag of 500ml, most Liberians consume up to three water bags on a daily basis. The investment needed to start producing water bags is very low and the market has a great demand. Yet the water quality cannot be guaranteed to a certain standard<sup>3</sup>. The water production market has no state monitoring or control. In this context, many pop-up and self-proclaimed factories all over the country contribute to the badly controlled water production, consequently risking people's health and profiting from the poor national water access and service; a business that is harming people's health. That these water bags are still the safest way of access to water for most Liberians living in Monrovia, is known to the people of Liberia, the Liberian state and international presence in the country. However, no governmental measures or standard has been set to control the quality, production and price of water; and certainly not the disposal of water bags. Most parts of the metropolis do not have an organized waste disposal. Incineration- or recycling sites do not exist in Liberia and the country lacks policies around this fundamental issue. Through the Emergency Monrovia Urban Sanitation Project (EMUS), sponsored by the World Bank, the waste of bigger dumpsites in town is being transported outside of town to a land fill. These transports are unreliable and do not resolve the waste problem of Monrovia. The challenges of dumpsites and landfills are that they contaminate the rainwater and because of the lacking sanitary situation, there is a high risk of infectious diseases which vastly spread in these kinds of conditions. The EMUS project focused exclusively on collection and disposal. The challenge facing this project is how sustainable it will be now that the support of the World Bank ended by the end of 2017.

In this context Green Cities initiated the «Plastic Recycling Project». On a local level it challenges the waste management issue in Monrovia. With a waste value chain Green Cities engages for a clean environment, a sustainable handling of resources, raising public awareness and creates job opportunities for young adults.

<sup>1</sup> <http://www.wateraidamerica.org/liberia>

<sup>2</sup> 1 USD is equal to 160 LRD (Feb. 2019)

<sup>3</sup> A "water bag"-machine imported from China costs between US\$ 1,800-2,800 – it fills and seals between 1,500 and 2,000 bags per hour - For further information about water production issues and controlling see: Liberia: "We are upset as water producers", 27 February 2017, All Africa, link: <http://allafrica.com/stories/201702240796.html>

## 2. Project Partner and Collaboration

The Green Cities began in February 2012 as the nation's first waste separation, awareness and recycling center with the goal to give value to the plastic water bags and transform this waste into raw and reusable material to manufacture new products.<sup>4</sup> At the same time, Green Cities helps families to generate income by buying used plastic bags or gallons from anyone who collects and brings this waste to their center. In that sense Green Cities takes this major social responsibility of cleaning and transforming a specific waste (the result of a failed water supply). Yet, despite its obvious importance, the initiative faces the same issues as other profit orientated companies in Liberia – electricity is poor and instable, there is neither governmental support, nor tax reduction or financial credits.

With the support of international organizations, the facility was built right behind Nancy Doe Jorkpen Town Market in the center of Monrovia. Today the social business is called Green Cities and represents a collection point, warehouse and production facility for recycling products. It employs 14 young adults and works with over 10 youth organizations in different districts of Monrovia.

Apart from plastic, Green Cities recycles several other materials such as aluminum, electronical waste, batteries and green waste. A serious engagement which is essential for the Liberian environment. Anyone can bring waste products to the center and receive compensation per kilo depending on the material. A kilo of aluminum is bought at 40 Liberian Dollars (LRD), a kilo of scrap metal for 10 LRD, a kilo of plastic (HDPE and LDPE) for 25 LRD<sup>5</sup>. In 2014 Cooperaxion and Green Cities initiated the purchase of the two kinds of plastics. The products are stored, depending on the material also processed and resold in large quantities to companies that can either reuse it (e.g. glass bottles) or produce new goods from it. Since commissioning the new machines in 2015, they have either been shredded or melted into pellets. It was found that there is a demand for these products within Liberia and neighboring countries.

The following companies have already bought or are interested to buy products form Green Cities: In Liberia: Dura Plast Inc., Milla Group, Anaco. In Guinea: Topaz, SOS Miskines, Toplast. In Ghana: ZoomLion. In Nigeria: Tongda Limited, Wecyclers, Recycling Points.

Green Cities will establish itself thion four pillars in the area of (plastic) recycling:

- Production of raw materials for industry (pellets and chaff)
- Washing plastic films for the industry
- Manufacture of end products for private consumers or institutes (e.g. schools)
- Sensitization of various target groups: schoolchildren, youth organizations, marketers, business (e.g. offices or hotels)

## 3. Project Goal

The «Plastic Recycling Project» of Green Cities contributes to a relevant and sustainable waste management in Liberia in cooperation with the local population of Monrovia. Because of the high consumption of water bags plastic waste is a consequence which results of the lack of clean water access. Green Cities has made it their duty to recycle and reuse this waste profitably in the densely populated communities of Monrovia, thus creating a new market for those waste products. The project contributes to a clean environment and helps with the conscious use of resources through sensitization workshops

<sup>4</sup> Other engagements of Green Cities are production of organic fertilizer, paper-recycling, collection, sorting, storing and selling of other recyclables such as aluminum and metal cans, metal, glass, electronic wastes

<sup>5</sup> 1 USD is equal to 160 LRD (Feb. 2019) / 1kg of rice costs around 240 LRD because of high inflation. Collecting plastic for half a day (approximately 10kg), 1kg of rice can be bought (4cups)

for different target groups on reduce, reuse and recycle – for a sustainable solution. At the same time, jobs are created for young adults as well as income opportunities for the community inhabitants collecting the waste. A locally anchored and by Liberians operated initiative boosts the local industry, creates job opportunities, contributes to peace preservation and is committed to social change.

#### 4. Results & Activities

The «Plastic Recycling Project» has constantly developed over the last years. 2016 a crucial amount of recycled raw material could be sold back into the plastic industry. 2017 many important contacts were established including a trader in plastic machinery who could supply the washing line for foil plastic within West Africa including technical support. At the same time the project initiative and its new opportunities for waste management had been presented in various occasions and to different target groups. Not all planned milestones could be implemented last year, though the project is on track and has developed well despite the difficult infrastructural, political and economic basic conditions. In order to install a sustainable system for combating the waste issues in Liberia, this project phase focuses on the following results that will be tackled with the corresponding activities.

##### The time-consuming Washing and Drying of the collected Plastic Waste is mechanized

With this mechanization, the processing can be accelerated, the quality increased and finally the recycling process of the used plastic films will be financially self-supporting. Bigger production makes it possible to buy more waste from the streets of Monrovia. The regular processing of large quantities enables to negotiate with additional customers. In 2017 a machine for cutting, washing and drying for mainly plastic films was delivered from Nigeria. The following activities are necessary now:

- Installation and commissioning of the new machine, including electrical installations and water treatment, as well as testing phase until the machine is adjusted correctly
- Rent additional storage space, at the central processing facility and also decentralized in the different communities
- First deliveries / sales of the newly manufactured products, promote the new products to potential new customers and offer the washing service to wash dirty films for other industries

##### The Collected Plastic Waste will be transformed into a New End Product

For a reliable business model, it is important to not only depend on other plastic product producers and compete directly with virgin<sup>6</sup> plastic. Therefore, the injection molding machine for the production of end products offers a suitable supplement for the recycling initiative. At the same time, it is a perfect correlate to illustrate the recycling process. In particular, the focus here is on the youngest generation, the children of Liberia. When they use school materials such as rulers or set squares and learn how they were produced, they can easily understand the process of recycling. There is already an agreement with the Ministry of Education to supply and inform schools in Liberia. The used machine was bought in Switzerland and already transported to Liberia. For the 2018-2021 phase, Green Centers aims are:

- Ordering a mold for the desired end products (school materials such as ruler etc.)
- Construct a building enhancement to place the machine, installation and commissioning
- Test phase: Geometrical set delivery and awareness raising workshops in 2 or more public school classes; evaluation and improvement of products before wider outreach and supply
- Further marketing via retailer

<sup>6</sup> Virgin plastic is newly-manufactured plastic that has not yet been made into a product, is therefore the opposite of recycled plastic.

### Awareness Campaign – Various Actors are involved in the recycling Process

The recycling initiative is more and more known in Liberia and attracted great interest. Various companies and youth groups have already become convinced partners. The employees of Green Cities are regularly invited to hold workshops on the new opportunities in waste management. In these workshops the focus is not only on plastic waste but on all the common waste materials. The courses provide a sustainable approach to diverse resources and cover all aspects of waste reduction, reusing materials and recycling. Within the latter aspect, the participants learn how and at what prices they can sell the respective materials at Green Cities or a decentralized collection point.

Once the processing and sales process is ready, a wider range awareness campaign can be launched. It targets different groups:

- In connection with the production of the school supplies, like geometrical sets, schools and schoolchildren are sensitized and motivated to deal with these resources through workshops specifically tailored to this group
- Youth groups and youth organizations from Monrovia's densely populated neighborhoods are involved in the process as "collectors" of waste products, but also as decentralized sales/purchase centers to enable participation to as many community dwellers as possible
- The biggest producers of waste are markets; therefore, marketers are trained and involved in the recycling process. Liberian markets have a strong structure and good multiplier effect. With workshops and simple infrastructure, sustainable waste management is fostered. In cooperation with the Liberian Market Association (LMA), facilities are installed to enable the correct collection, separation and transportation of waste
- Specific trainings can be implemented for companies such as hotels, private and public offices, and in many cases Green Cities offers to pick up the waste in bulk for free

### The (financial) Independence of Green Cities is gradually being implemented

In 2014 Green Cities started with plastic recycling, this has brought a number of new challenges that are not yet self-sustaining. In order to be able to sustainably and meaningfully continue this specific process of plastic waste processing, the initiative still needs decisive support for the time being.

With the mechanization of the most relevant processing, a gradual withdrawal of external support paves the way for an independent (financial) operating.

- With the mechanization of the production, larger sums are achieved through sales which will be reinvested into the recycling initiative. At the same time there is also an attempt to build up a local support network, which could contribute financially as needed.
- Together with the project manager of Cooperaxion, it will be defined how the current and future revenues are to be distributed (e.g. company capital, social commitment, innovation and awareness, ...)
- The participation of Green Cities in the planned budget costs will increase gradually from 2018 and 2019 around 10 to 15%, 2020 about 45% to 2021 85%, and from the beginning of 2022 on, full independence will be sought.

### The Recycling Initiative will be Reproducible in other Cities in Liberia

The concept and framework conditions created by the «Plastic Recycling Project» in Monrovia will be reproduced and multiplied in other cities in Liberia by means of a franchising system. This way carbon emissions can be reduced because of less transportation of collected material to Monrovia, rather than bringing the waste to the local centers. Larger parts of the country can benefit from the recycling of

plastics, the positive effect on the environment can be increased, more jobs created and income generated.

- Analysis of the situation in the largest cities of Liberia and development of a franchising concept
- Information and visits of potential partners
- Contractual agreements, trainings and material allocations for franchisees
- Evaluation and possible adaption of the concept

## 5. Monitoring and Evaluation

The continuing revision of the project activities and verification of the achievement of the set result indicators are key issues of the project implementation. The focus of all different aspects is that in the mid- and long term the project becomes self-sufficient and does not need external financial support or accompaniment anymore.

### Reporting

- Quarterly narrative and financial reports are being prepared by Green Cities CEO and shared and discussed with the project coordinator of Cooperaxion.
- Yearly narrative and financial reports will be prepared by Green Cities and Cooperaxion to share with stakeholders, donors and for other prospective.

### Monitoring

- Twice per year the project coordinator of Cooperaxion will visit the project site to see the activities and achieved results and note her analysis after each visit for the attention of the board, donors and other prospective.
- The taskforce composed by different stakeholders on ground will have quarterly meetings to follow up on the planned activities and intended strategies and report its findings to the Green Cities CEO who will share it with Cooperaxion.

### Consulting

- For specific challenges on environmental issues and the solid waste management an expert consultant can be included on a mandate basis from either a local or international institution to be recommended.

### Evaluation

- At the end of each year the project activities and progresses are evaluated collectively and the further procedure will be defined. If there are bigger deviances from planned milestones, the project planning has to be adopted realistically.

## 6. Chances and Challenges

Green Cities is pioneering with the «Plastic Recycling Project». Internationally, the issue of waste management is known, and also in Liberia the consciousness is growing. Green Cities has worked with ministries, key organizations and markets in recent years and is well connected. Its employees are invited as experts to network meetings, and CEO James Mulbah has been appointed environmental consultant by the then vice president. Several companies including the largest plastic products manufacturer in Liberia are interested in the recycled material of Green Cities. This enables the company to become independent from external investors in the medium to longer term. The multi-award-winning project coordinator and his strong team of young adults form a solid foundation for this social and successful business.

Green Cities is a breath of fresh air for the Liberian youth. All fourteen young members of the crew know all the steps of waste collection, cleaning and recycling. They are equally prepared to offer the initial awareness and collection workshops. James Mulbah invites and includes several members of the team to join him in a meeting with the vice-president or any minister. It is important to acknowledge the team effort and the empowerment of all members at Green Cities. As always when pioneering, not all the ways are paved. Even though several other initiatives have started to work in this field, also under comparable conditions, the recycling of dirty plastic films remains a new approach. In addition to all the challenges a new startup faces, the frame conditions for small entrepreneurs in Monrovia make the task even more difficult. Despite the significant role of Green Cities, managing the side effect of a lack in water supply and treatment, public awareness and income generating for young adults, with currently no profit in plastic recycling - Green Cities is still perceived as a private company to the eyes of Liberian institutions and some eventual donors. This causes a challenge on finding financial support locally and internationally. The recession and the (still) missing or inadequate infrastructure in Liberia remain main issues of the growth of Green Cities, some of which are difficult to estimate.

In January 2018, a peaceful handover of former President Ellen Johnson Sirleaf to newly-elected President George Weah took place. We are yet to find out when the uncertainties of the entrepreneurs settle and the reinvestment in Liberia's economy resume. At the same time, these framework conditions offer great opportunities for a small company that can make a decisive contribution to the positive development of the country in this fragile situation.

## **7. Resources and Budget for the Project Phase 2018 - 2021**

The budget on the next page shows what approximately will be needed for the activities planned in order to reach the specific outputs. It has been updated with the effective expenditures made 2018 and slightly adopted for the following years according to the progress of the project. Additionally, the local implementing partner Green Cities is contributing by its own means: It provides the already existing infrastructure in the currently used recycling plant. This includes machines for crushing and pelletizing, working space and office rooms, as well as electricity installments and generators. This project builds on several years of experience and acquirement of knowledge. The partners have a strong network with local and also international stakeholders, are connected with ministries, institutions and organizations working in similar areas. Due to marketing engagements Green Cities is known by many companies, associations, community organization and private people. The wider team working for Green Cities, but not directly included in the plastic recycling area, offer additional resource of more workforce in busy times. Moreover, the team members voluntarily spread the knowledge of prevention and waste management in their private circles. The participation of self-financing will be increased gradually depending on the capacities. 2018 the local contribution had to be spent on unforeseen and could not cover what was planned.

Plastic Recycling Project Monrovia, Liberia	Budget in USD															
	Budget vs Expenditures 2018 (in USD)						2019			2020			2021			
	Total Budget	local budget	local expenditures	external budget	external expenditures	total expenditures	BALANCE	Adjusted Budget	local contribution	external contribution	Total Budget	local contribution	external contribution	Total Budget	local contribution	external contribution
<b>1 Construction &amp; Installation</b>	<b>32'882</b>	0		32'882	<b>29'970</b>	<b>29'970</b>	<b>2'912</b>	<b>10'000</b>	0	<b>10'000</b>	0	0	0	0	0	0
Construction of Building Enhancement	9632	0		9632	14'382	14'382	-4'750	0	0	0	0	0	0	0	0	0
Connection of Electricity in the Buildings	4750	0		4750	2'734	2'734	2016	0	0	0	0	0	0	0	0	0
Installation of New Machines	6000	0		6000	7'883	7'883	-1'883	0	0	0	0	0	0	0	0	0
Installation of Water Supply System	7500	0		7500	4'971	4'971	2'529	0	0	0	0	0	0	0	0	0
Mold for Endproduct	5000	0		5000	0	0	5000	10'000	0	10'000	0	0	0	0	0	0
<b>2 Maintenance</b>	<b>4'500</b>	0		<b>4'500</b>	<b>4'406</b>	<b>4'406</b>	<b>94</b>	<b>3'520</b>	500	3'028	<b>3'520</b>	2'640	880	<b>3'520</b>	3'520	0
Generator Maintenance	2500	0		2500	2'333	2'333	167	1'600	250	1'350	1'600	1'200	400	1'600	1'600	0
Machinery Maintenance	2000	0		2000	2'073	2'073	-73	1'920	250	1'670	1'920	1'440	480	1'920	1'920	0
<b>3 Electricity / Fuel / Water</b>	<b>8'540</b>	540		<b>8'000</b>	<b>8'994</b>	<b>8'994</b>	<b>-454</b>	<b>16'540</b>	540	16'000	<b>32'540</b>	24'540	8'000	<b>64'540</b>	64'540	0
Fuel & Electricity for processing (Generator&LEC)	6000	0		6000	5'908	5'908	92	12'000	0	12'000	24'000	18'000	6'000	48'000	48'000	0
Fuel for collection (car)	2000	0		2000	2'546	2'546	-546	4'000	0	4'000	8'000	6'000	2'000	16'000	16'000	0
Water Supply	540	540		0	540	540	0	540	540	0	540	540	0	540	540	0
<b>4 Storage Space</b>	<b>10'000</b>	2'500		<b>7'500</b>	0	0	<b>10'000</b>	<b>12'000</b>	2'500	9'500	<b>2'000</b>	1'000	1'000	<b>2'000</b>	2'000	0
Rent for Storage Space	5000	1000		4000	0	0	5000	7000	1000	6000	2000	1000	1000	2000	2000	0
Construction of Storage Space	5000	1500		3500	0	0	5000	5000	1500	3500	0	0	0	0	0	0
<b>5 Supplement Payment for Plastic</b>	<b>13'500</b>	0		<b>13'500</b>	<b>13'468</b>	<b>13'468</b>	<b>33</b>	<b>27'000</b>	6'000	21'000	<b>27'000</b>	20'250	6'750	<b>27'000</b>	27'000	0
HDPE (2018:35t, 2019: 70t)	6300	0		6300	6'513	6'513	-213	12'600	3'000	9'600	12'600	9'450	3'150	12'600	12'600	0
LDPE (2018:30t, 2019:70t)	7200	0		7200	6'955	6'955	246	14'400	3'000	11'400	14'400	10'800	3'600	14'400	14'400	0
<b>6 Awareness / Sensitization</b>	<b>16'500</b>	1'300		<b>15'200</b>	0	0	<b>16'500</b>	<b>16'500</b>	2'800	13'700	<b>3'500</b>	2'500	1'000	<b>1'500</b>	1'500	0
Transport+Food for Participants (105 x 20.-)	2100	0		2100	0	0	2100	2100	0	2100	0	0	0	0	0	0
Training Center Rent (8 days at 150.-)	1200	0		1200	0	0	1200	1200	0	1200	0	0	0	0	0	0
Facilitation fees (3 pers at 400.-)	1200	0		1200	0	0	1200	1200	0	1200	0	0	0	0	0	0
Communication (8 days at 25.-)	200	0		200	0	0	200	200	0	200	0	0	0	0	0	0
Media engagement (1x)	500	500		0	0	0	500	500	500	0	0	0	0	0	0	0
Stationary	800	800		0	0	0	800	800	800	0	0	0	0	0	0	0
Flyers and Awareness Material	2000	0		2000	0	0	2000	2000	500	1'500	1'000	1'000	0	0	0	0
Simple Bins for Collection in Markets	2500	0		2500	0	0	2500	2500	0	2500	0	0	0	0	0	0
Marketing, Samples, Presentations, ...	6000	0		6000	0	0	6000	6000	1'000	5'000	2'500	1'500	1'000	1'500	1'500	0
<b>7 Recruitment / Trainig Franchising Partner</b>	<b>0</b>	0		<b>0</b>	0	0	<b>0</b>	<b>0</b>	0	0	<b>12'500</b>	0	12'500	<b>3'000</b>	3'000	0
Situation Analysis, Conceptualization	0	0		0	0	0	0	0	0	0	3'000	0	3'000	0	0	0
Information, Recruitment, Visiting	0	0		0	0	0	0	0	0	0	1'500	0	1'500	0	0	0
Training of Franchising Partner	0	0		0	0	0	0	0	0	0	5'000	0	5'000	0	0	0
Follow up, Monitoring, Evaluation	0	0		0	0	0	0	0	0	0	3'000	0	3'000	3'000	3'000	0
<b>8 Management and Administration</b>	<b>27'158</b>	7'660		<b>19'498</b>	<b>31'406</b>	<b>31'406</b>	<b>-4'248</b>	<b>24'440</b>	9'540	14'900	<b>24'940</b>	22'812	2'128	<b>24'940</b>	24'940	0
Rent for Office Land Space	540	540		0	540	540	0	540	540	0	540	540	0	540	540	0
Business Taxes to Government	1'800	1'800		0	1'800	1'800	0	1'800	1'800	0	1'800	1'800	0	1'800	1'800	0
Health and Safety Materials	852	852		0	852	852	0	852	852	0	852	852	0	852	852	0
Detergent for Cleaning	300	300		0	300	300	0	300	300	0	300	300	0	300	300	0
Coordination & Staff (100.-/mt)	1'200	0		1'200	1'200	1'200	0	1'200	0	1'200	1'200	1'200	0	1'200	1'200	0
Sensitization & Promotion Manager (90.-/mt)	1'080	0		1'080	0	0	1'080	1'080	0	1'080	1'080	1'080	0	1'080	1'080	0
Processing & Production Manager (90.-/mt)	1'080	0		1'080	1'080	1'080	0	80	0	80	80	80	0	80	80	0
Accountant/Office Manager (100.-/mt)	1'200	0		1'200	1'200	1'200	0	1'200	0	1'200	1'200	1'200	0	1'200	1'200	0
Driver (90.-/mt)	1'080	0		1'080	1'080	1'080	0	1'080	0	1'080	1'080	1'080	0	1'080	1'080	0
Security (100.-/mt)	1'200	0		1'200	1'200	1'200	0	1'200	0	1'200	1'200	1'200	0	1'200	1'200	0
Field Manager (90.-/mt)	1'080	0		1'080	1'080	1'080	0	1'080	0	1'080	1'080	1'080	0	1'080	1'080	0
Field Supervisor (80.-/mt)	960	0		960	960	960	0	960	0	960	960	960	0	960	960	0
Recycling Technician (80.-/mt)	960	0		960	960	960	0	960	0	960	960	960	0	960	960	0
Plastic Cleaner 4p (80.-/mt)	3'840	0		3'840	3'840	3'840	0	5'640	1'880	3'760	5'640	5'640	0	5'640	5'640	0
Plastic Collectors 2p (80.-/mt)	1'920	0		1'920	1'920	1'920	0	5'640	1'880	3'760	5'640	5'640	0	5'640	5'640	0
Feeding for Staffs 14p (300.-/mt)	3'600	2'000		1'600	3'600	3'600	0	3'600	2'000	1'600	3'600	3'600	0	3'600	3'600	0
* Office material, Internet, Miscellaneous	4'466	2'168		2'298	9'794	9'794	-5'328	3'828	2'168	1'660	4'328	2'200	2'128	4'328	4'328	0
<b>Subtotal local direct Projectcosts in USD</b>	<b>113'080</b>	12'960		<b>100'120</b>	<b>88'244</b>	<b>88'244</b>	<b>24'837</b>	<b>110'000</b>	21'880	88'120	<b>106'000</b>	73'742	62'258	<b>147'500</b>	126'500	20'000
<b>9 Project Control (Follow up) / Project Visit (portion)</b>	<b>4'500</b>	0		<b>4'500</b>	0	0	<b>4'500</b>	<b>4'500</b>	0	4'500	<b>4'500</b>	0	4'500	<b>4'500</b>	0	4'500
<b>10 Bank Taxes and Transfer Fees</b>	<b>1'500</b>	0		<b>1'500</b>	<b>300</b>	<b>300</b>	<b>1'200</b>	<b>1'500</b>	0	1'500	<b>1'500</b>	0	1'000	<b>1'500</b>	0	500
<b>11 Reserve for unforeseen events</b>	<b>10'000</b>	0		<b>11'281</b>	<b>10'000</b>	<b>6'875</b>	<b>18'156</b>	<b>20'000</b>	0	20'000	<b>15'000</b>	0	15'000	<b>10'000</b>	0	10'000
* Septic Tank Construction				3'255			3'255									
* Roofing of Damaged Roof				655			655									
* Construction of Center Roof Betw the 2 buildings				745			745									
* Payment to LEC for New Transformer 150KVA				1'600			1'600									
* Wire for Transformer				950			950									
* Registration of Commercial Line				1'500			1'500									
* Flower Pack at the Front of the Building				2'576			2'576									
* Outstanding Balance for Mini Truck					6'875	6'875										
<b>12 Expertise Transfer Schweiz - Liberia (in USD)</b>	<b>0</b>	0		<b>0</b>	0	0	<b>0</b>	<b>23'700</b>	0	12'700	<b>18'000</b>	0	7'000	<b>0</b>	0	0
<b>Trainin of Project Manager from Liberia</b>	<b>0</b>	0		<b>0</b>	0	0	<b>0</b>	<b>14'000</b>	0	3'000	<b>0</b>	0	0	<b>0</b>	0	0
4 weeks internship in companies in Switzerland	0	0		0	0	0	0	14'000	0	3'000	0	0	0	0	0	0
Expenses for flight, accommodation, transport, food	0	0		0	0	0	0	5'000	0	5'000	0	0	0	0	0	0
2 weeks internship in companies in West Africa	0	0		0	0	0	0	700	0	700	0	0	0	0	0	0
Expenses for flight, accommodation, transport, food	0	0		0	0	0	0	4'000	0	4'000	0	0	0	0	0	0
<b>Recyclingexperts from CH to Liberia</b>	<b>0</b>	0		<b>0</b>	0	0	<b>0</b>	<b>0</b>	0	0	<b>14'000</b>	0	3'000	<b>0</b>	0	0
Consulting 14 days (1'000.- per day)	0	0		0	0	0	0	0	0	0	14'000	0	3'000	0	0	0
Expenses for flight, accommodation, transport, food	0	0		0	0	0	0	0	0	0	4'000	0	4'000	0	0	0
<b>Subtotal Project accompany costs in USD</b>	<b>16'000</b>	0		<b>11'281</b>	<b>16'000</b>	<b>7'175</b>	<b>18'456</b>	<b>49'700</b>	0	26'000	<b>39'000</b>	0	20'500	<b>16'000</b>	0	15'000
<b>13 Administration &amp; Project Management (CH)</b>	<b>10'000</b>	0		<b>10'00</b>												