

1. Contestant profile

▪ Contestant name:	Sylvia Gaudence Ruambo
▪ Contestant occupation:	Secondary school teacher
▪ University / Organisation	Ilala Green Volunteers
▪ Number of people in your team:	29

2. Project overview

Title:	Bringing Life to Quarry Biodiversity; Connecting Quarry, Schools & Community to Nature
Contest: (Research/Community)	Community
Quarry name:	Wazo Hill, Dar Es Salaam – Tanzania

Abstract

People spend their daily lives in cities; they drive fast cars and live in buildings that rise high above the ground. It may seem that there is no room left for nature. Workers at the quarry are among these people. The number of people who spend their time in nature is increasing. It becomes more and more popular to spend a weekend in the national parks, enjoying the nature walks; people are visiting farms to participate in various field works, the parents send their children to nature camps and themselves are happily learning about the nature. People have realized that the daily rush could be stopped in the nature. That is to say, it is the nature that comforts, teaches and connects people. Ever seen a nature centre at the quarry site, where quarry itself, schools and community are connected? Find in Tanzania at the Wazo Hill, the TPCCL site, where flora and fauna are promoted. Promotion of flora and fauna is a mean that not only protect and preserve our environment but also rehabilitates the quarry sites where biodiversity is at risk. TPCCL's efforts to rehabilitate quarry is supported with the diversity of ideas. The project has brought in ideas from students, teachers and the local community that have helped in the promotion of flora and fauna at the quarry. To promote flora, trees nurseries were made; varying form shades, fruits to medicinal seedlings. It also made an exemplary forest by planting 15000 seedlings. The flower garden was made using tires that were thrown at the quarry, thus create the recycling awareness ideas at the quarry too. To promote fauna, birds and insects habitats were made. Locally made pigeon lofts and birds nests attracted more of the different species to find their homes at the quarry. The flower garden that was named butterflies garden was made and attracts different butterflies' species. The project innovated the nature centre, where quarry, schools and community are connected. The centre will accommodate learners and communities who visit quarry to learn and thus become part of supporting rehabilitation at the quarry. The centre also serves as a recreation centre. The project has promoted biodiversity and protected nature, which in turn, protects us. *"Nature protects if she is protected."* Fresh Quote.

1. Introduction

The TPPCL utilizes limestone for producing cement. Extraction of limestone at involves excavation of the overburden red soils and blasting of the underlying limestone rock. As a result, vegetation is cleared, top soil is removed, habitats and environment are destructed, leaving quarried areas barren. TPCCL have been rehabilitating the quarried areas by planting trees. These efforts have to be supported with the different ideas innovated by people. This project was designed to serve the purpose by starting to educate schools and community about the importance of biodiversity and how they can be rehabilitated at the quarry site. It is also used as a mean to inform students and the schools at large that although we learn about how quarrying activities contribute to environmental degradation (destruction), we don't learn about the other side of the story; Quarry rehabilitation (a case study of TPCCL). The project also aimed at creating a nature centre where schools and communities can learn better about biodiversity promotion under one roof. The nature centre connects people, making them enjoying and learn to "read" the nature and understand how and why nature occurs, how nature affects our daily lives and how we can reduce the impact on it. The nature centre is where quarry, schools and community are connected. the centre also serves as a recreation place for quarry staff, communities, local and central government leaders and students. The project promotes nature education as a efficient mean of raising awareness.

1.2 Project Objectives

1.2.1 General objective: Toconnect quarry, schools and community to each other and to nature

1.2.2 Specific objectives

- To teach students about biodiversity and how best to preserve and protect it.
- To educate the surrounding community about the importance of conserving environment, especially quarry sites
- To contribute to the efforts done by the TPCCL under UVIKIUTA in the promotion of flora and fauna at the quarry sites.
- Establishment of a nature centre: the area that can serve as a learning centre for visitors and for recreational activities for visitors and TPCCL staff.

2. About the Site

TPCCL is a subsidiary of the Heidelberg Cement Group which is located at Wazo Hill, Dar es Salaam, Tanzania. It is the largest cement producing company in Tanzania. TPCCL is committed to rehabilitate the already quarried areas by planting trees through UVIKIUTA. TPCCL also produces seedlings (fruits, medicinal and shade trees) and distribute them to institutions (schools, government, religious institutions, local communities) for planting.

2.1 Team Members

29 people (2 teachers, 20 students from 4 schools and 7 community environment committee members).

2.2 Targeted Population

- **Schools:** Four schools from 4 municipals were involved , namely Msimbazi , and Benjamin Mkapa secondary schools (Ilala), Boko secondary school (Kinondoni) & Keko sec school (Temeke).
- **Community:** The surrounding community of Basihaya street, Chasimba suburb.

2.2 Stakeholders Involved

- Local community

3. Activities

To achieve the stated objectives, the following activities were carried out:

Activity # 1: Education to raise awareness

Education was given to schools, community and the youth around the quarry to raise awareness about biodiversity promotion and protection in our environment. Awareness raising was done into 2 major areas:

3.1.1 To schools: The targeted schools were given education about the quarry and how the quarried areas are rehabilitated. Schools are taught about how quarrying contributes to environmental destruction, but do they know about the other part of the story (quarry rehabilitation)? No! as a teacher, we do not teach them about quarry rehabilitation. This was an opportunity of teaching students with the case study of TPCCL.

3.1.2 To the community : community members and youth group from the same community were given a non-formal education about the environmental conservation and protection. Community was taught about environmental conservation as a mean to earn an income (bee keeping, fruit trees planting, trees nurseries for sale).

Activity # 2: Quarry visiting

Seeing is believing! Schools and community members visited the quarry. They saw the extracted area and innovated ways to rehabilitate. Community members were able to witness the damage caused by them at the already rehabilitated areas where trees are cut, stones extracted and the digging of the red soil for the flowers nurseries business. The visiting was a beginning of a paradigm shift, where environment conversation will be used as a mean to earn an income rather than environmental destruction.

- i. Students saw how rehabilitation is done and proposed ways that can add to TPCCL efforts.
- ii. Community members were given the pre-project questionnaires to fill (summary attached). Community learnt how rehabilitation is done at the quarry and the safety measures taken to protect the surrounding community, which at first they were not aware of.

Activity # 3: Promotion of Flora

To ensure survival, existence and rehabilitation of the local flora, the following was done:

- **Establishment of multi-purpose trees nursery:** 3,000 seedlings were made and placed at the botanical garden in the nature centre.
- **Establishment of the butterflies' flowers gardens:** these were made as a mean to promote flora, fauna and beautifying the quarry site. Two types of flowers gardens were made:

- i) Ground garden: Soil was filled at the targeted area and flowers were planted.
- ii) Tires garden: 10 used tires picked at the quarry were used to plant flowers. The use of tires also served as a recycling lesson, where used items at the quarry can be reused for other purposes.

NB: Tree nurseries and butterflies flowers gardens were placed at the learning centre and made a beautiful botanical garden.

- **Tree planting:** The exercise was done to 3 areas, quarry site, schools and community as follows:

i. Quarry tree planting: schools and communities planted trees at the quarry separately. Schools planted 1,000 seedlings at the quarried area. Species planted were Adasonia digitata (100), Sena siamea (300), pongamia pinata (300) and Peltophorum pterocarpum(300). Community planted 500 seedlings to the area where destruction was done by them. They planted 50 Adasonia digitata, 150 Sena siamea, 150 pongamia pinata and 150 Peltophorum pterocarpum. Making a total number of 1500 seedlings planted.

ii. Schools tree planting: Schools were given shades and fruits trees to plant in their schools. Each school was provided with 30 carica papaya, 20 citurs fruits & 50 shade seedlings and were planted in their schools.

iii. Community tree planting: 100 carica papaya, 50 citrus fruits & 100 Annona muricata seedlings were planted.

Activity # 4: Promotion of Fauna

The following activities were carried out to ensure survival, existence and rehabilitation of the local fauna:

i. The insects

Insects aerate the soil and pollinate blossoms. Some insects feeding on dead animals and fallen trees, thereby recycling nutrients back into the soil. The following was done for the insects:

- ▶ **Creation of insects habitats:** the grand insects hotel was locally made using dry grasses, tree stems and branches from the quarry. Millipedes, ants, frogs and worms are some of the insects available at the grand hotel which has mezzanine, ground and a first floor.
- ▶ **Butterflies' garden:** These gardens served as a mean to attract butterflies because of its beautiful flowers. Different species of butterflies are now seen at the nature centre.

ii. Birds

Birds are fun to look at, birds sing wonderful songs, birds fertilize flowers. Bird watching provides stress relief for human. For the birds, the following was done:

- ▶ Pigeon habitats: Pigeon lofts was made and installed at the nature centre roof. The lofts served 4 pairs of pigeons who then attracted more from the local community to come and make their natural nests. 2 pairs of pigeons bred.
- ▶ Locally made bird nests which attracted different species of birds to come together and live in the area. Local birds are seen around the nature centre, making the area more beautiful.

Activity # 5: Establishment of a nature centre

This is the place where quarry, schools and communities are connected to each other and to nature. It is a cultural hut, built with traditional and modern materials. It can accommodate 15 people. The nature centre is surrounded by all activities done by this project; tree nurseries, butterflies gardens, grand insects hotel, and birds' nests. A botanical forest of 1500 trees planted by schools and community is closer to the nature centre. Nature centre is where quarry visitors can be educated (instead of being educated under the tree shade) about nature and environment. It can also serve as a recreation centre. Nature centre, is the interpretive centre, visitor centre, relaxation centre and environmental education centre. It is built for people in order to enhance their environmental awareness and connect them with the special place where the centre is build.

4. Discussion

During implementation of the project, pros and cons were observed through experiences gained. Discussion is made hereunder;

4.1 The pros

1. Schools were able to get education about visited quarry and learn how to promote biodiversity. The knowledge that can never be taken away.
2. Community was able to innovate activities to earn income through opportunities available on environment without destruction. (selling of tree nurseries and fruits) .

3. Nature centre of its kind at the quarry site, where biodiversity promotion is live. The nature centre that connects biodiversity. A place where quarry, community and schools are connected to each other and to nature! This is more than wonderful for a single unit to provide all these.

4. Quarry sites has been a place for the recreational activities.

5. Developmental activities that involve land degradation turned into land rehabilitation.

6. scholarship to attend to an exchange program: Through non-formal education that was provided in the communities and the extra curricula activities done at schools, the project member (Sylvia Ruambo) has been awarded a scholarship to attend a 2 weeks' exchange program to Germany (1st - 14th September, 2018) to accompany Tanzanian young social workers to share and learn experiences of working with communities and ways of imparting education in a non-formal way (invitation on attachment 2). The program is organized by Global Network of Religion for Children (GNRC) Tanzania & dock Europe e.V Germany (Perspektiven wechseln program).

4.2 The contra

1. Community members being reluctant in joining the rehabilitaton efforts.

2. Schools visiting at the quarry was very expensive because the bus hired had to bring in students and take them out. The bringing -in process is too long and bureaucratic, causing waiting charges,

3. The project could not get many votes because observers were mainly public schools students (who, in our country) are not allowed to possess smart phones, but also due to family economic status, have no access to computers or internets.

Community members involved are from the lower income families. Many are jobless, especially youth, thus lack access to smart phone or any other means of accessing to internets.

4. Pigeons could not be retained at the quarry, despite being provided with food and shelter. The lofts are now used by other species of birds who have breed into hundreds.

5. Limited fund: the fund provided to carry out project activities was limited. This has caused the use of extra money to accomplish the project goals.

5 Values added by the project

The project was meant to add values to the quarry, society and the biodiversity. The values added are presented basing on the categories:

5.1 Value added for the Biodiversity

i) Increased area for biodiversity to interact with each other: the tree planting exercise aspired to make a performed botanical forest. Trees planted deliver shade, condition soil, food for humans and animals, as well as habitats for birds and insects, thus increasing area for living organism to interact with each other.

ii) Increased insects habitats and interactions: Insects have found a place where they can settle and breed freely. Flowers which were previously not available at the site are now available, thus attract more insects such as butterflies.

iii) Increased birds habitats: More birds were attracted with the boxes and the lofts installed at the nature centre. The goal of every living organism is to create offspring for the next generation. Birds have found a safer place for hatching without interference from monkeys.

iv) Nature balance: Birds are integral parts of food chains and food webs. Birds eat plants, insects and small animals. Birds and bird eggs, in turn, serve as food for animals. The feeding relationships among all the animals in an ecosystem help prevent any species from becoming too numerous. Birds play a vital role in keeping this balance of nature

iv) Increased fertilizer: bird droppings can be used as fertilizer. These droppings have a high content of nitrogen, phosphate, and potassium, three nutrients essential for plants growth.

iv) Pollination: Insects and nectar-feeding birds act as pollinators. Without their assistance, most plants cannot produce fruits and seeds. The fruits and seed are food source for biodiversity. Pollination also leads to the production of seeds that will create more plants blossom.

v) Natural pests control system: Number of birds have increased at the quarry. Birds eating insects is the natural way of controlling pests, which in turn makes the plants flourish.

vi) Establishment of a nature centre: A centre which accommodates biodiversity. A centre where biodiversity is promoted, from local flora to local fauna.

5.2 Value added to the society

i. Value added to the community

- i. Knowledge gained by people through the project that can never be taken away by anyone.
- ii. Nutritional values from the fruits trees (papaya) that they now eat, sell, and produce more seedlings for sale.
- iii. Income generation: Community can now raise income by selling fruits (papaya), generate more seedlings and sale. Community also have created their own trees nursery which they will sell seedlings and gain an income.
- iv. Community members (youth) can be enrolled as ancillary workers at the UVVUKIUTA (Quarry rehabilitators)
- v. Community challenges such as rain water flowing from the industry to their community were addressed.

ii. Value added to schools

- i. Knowledge that can never be taken away by anyone.
- ii. nutritional values from fruits trees (Papaya), fresh air and shades (after trees grow).
- iii. Behavioral change.

5.3 Value added to the quarry/ company

- i. Rehabilitation of the local flora and fauna at the quarry, adding value to quarry and nature
- ii. Community vandalism of the company environment was agreed to end.
- iii. Creation of the nature centre: Visitors who come to visit TPCCL for the purpose of learning, rehabilitating, tree planting or tree collection were accommodated under the tree. The Nature centre can accommodate 15 visitors. All that is required for rehabilitation learning are on the nature centre. the centre is painted with attractive yet educative drawings, have birds nests, botanical gardens and grand insects house. With its beautiful view, the centre can also serve as a recreation area.
- iv. 45 Reflectors were left for visitors to wear when visiting quarry rehabilitation area. The rehabilitation offices have few, which can not serve the population of 50 people who visit the sites.
- v. Increased interaction of biodiversity through tree planting, birds and insects habitats, trees nurseries and botanical gardens.
- vi. Flowers garden which at first was not available at the quarry.
- vii. Waste management: The used items such as tires can be re-used as garden, chairs, tables, depending on the needs instead of piling them at the industry waiting for being disposed.
- viii. Industry staff can have a place to reduce work stress; at the nature centre.

5.4 Value added between biodiversity, industry and the community

- i. Bond between TPCCL, schools and community in the promotion of biodiversity.
- ii. Establishment of a bumps to reduce the water speed form the quarry to the community destructing environment and community infrastructure.
- iii. Quarry, community and schools are connected to each other and to nature!

6. DELIVERABLES

- i. **Creation of a nature centre:** the nature centre created can accommodate only 15 people, while visitors come in groups of at least 40 people.

In order to build and nurture the nature centre that the peoject have established, recommendation is made to expand the centre to its left and right sides without necessarily breaking the original one. The nature centre can be used while expansion process continues.

Estimated costs to expand the centre (In Tanzanian shillings)

No	Item	Unit cost	Freq/amount	Total
1	Timbers	12,000.00	24	288,000.00
2	Nails	2,000.00	2	4,000.00
3	Paintings	5,000.00	6	30,000.00
4	Roofing tents	20,000.00	3	60,000.00
5	Installation of wooden chairs	25,000.000	4	100,000
5	Labor charge	120,000.00	1	120,000.00
6	Contingency	10%	-	60,200.000
	Total			662,200.00

ii. Man-made forest: The forest made was an exemplary forest. It consists of 1,500 trees only. With more trees planted, the forest can increase, thus increase more area for biodiversity to interact.

Recommendation is made to expand the forest because there is enough area to do so. The exercise should serve as a forest making and not as a tree planting exercise.

The perfect timing for this exercise is during the rainy season. Casual workers can be employed or visitors who come for tree planting can do this activity. No costs if visitors will be engaged.

iii. Botanical garden: The garden has included few species. Recommendation is made to have more species, especially of flowers, to make the site more beautiful and attractive to insects such as butterflies.

The ideal time of extending the botanical garden is any time of the year, during the learning tour of the students and others at the quarry to see how rehabilitation is done. They can be taught by doing, thus adding to the number of species and nurseries.

Estimated costs for flowers

Flowers prices vary depending on the species. The cost can also not be fixed depending on the number of flowers to be purchased. The prices vary from 3,000.00Tanzanian shillings to 5,000.000 for each flower.

iv. Community involvement: The project has involved one community. The results are visible; community have engaged fully in the project, especially the creation of the nature centre. Involvement of the community have helped addressing community issues that are concerned with the TPCCL. The results are visible, change of perception towards TPCCL and the ending of vandalizing environmental infrastructure of the industry. Recommendation is made to involve more surrounding communities. This can help them gain knowledge and income, at the same time safe guarding the environment at the quarry areas that borders with communities. Community can be involved when UVIKIUTA or the TPCCL are recruiting casual workers for environment or any other industrial works. This will cement the bond between them.

v. Improvement of environmental infrastructures: Recommendation is made to creates bumps that can reduce the rain water speed. Rain water comes from the quarry flows to the community causing damages. It also destruct the already rehabilitated areas by sweeping away the soil. Trees fall down, soil is washed away, causing soil erosion to the quarry rehabilitated sites. Bumps can be crated as many as possible to all water paths at the quarry that flows to the community. This will help solve the problems between quarry site and the community.

The perfect timing for this is before the rainy seasons. Community members can be involved. They are ready to be engaged on TPCCL activities that have benefits for them. This will also reduce the labor charge costs.

7. Presentation of Findings, Discussion and conclusion

7.1 Project Findings and discussion

The project has found out that, with the efforts between the industry, communities and schools, rehabilitation is possible. It also has found out that, quarry sites are places not only for quarrying activities and single rehabilitation activity (tree planting), but also for other rehabilitation activities that can promote biodiversity. These include flora, fauna, pollination, nature balance as well as fertilizer production.

The project also found that insects are the the greater risks of disappearing especially during the dry season. The grand insects' hotel that accommodates different insects species has added values to biodiversity. Insects find a better place for them to live. Insects are pollinators. They are also food for the birds and other small animals who have found the rehabilitated area the better and safer place to live. It was revealed that birds are not only pollinators, but have another roles to play; keeping nature balance, and beautifying the quarry areas with their colors and the songs they sing.

Through the project, it was revealed that, TPCCL had been in a conflict with the surrounding communities, including Basihaya. Communities invaded the previously quarried area, turning it into residence. Efforts by the TPCCL and the government to secure the area were in vain. Houses were built, with more than 10,000 residents. People from the community continued to extract quarries at the already quarried areas, causing environment degradation. Stopping them caused a conflict between quarry and the community. As a result, people started to vandalize the TPCCL infrastructure, cutting trees on the rehabilitated area, extracting quarry and stealing seedlings just to mention a few. The project has helped to revive the relationship between the two, which in turn can help protect and preserve biodiversity at the quarry.

It was found out that, although UVIKIUTA rehabilitates the site, although there is a museum at the site, learning activities, recreational activities and adventure have no places at the quarry sites. Quarry is seen as a working place, rehabilitation is considered as a task to be performed by authorities at the quarry, and visiting quarry site is not considered as a valuable thing that benefits the industry, communities and biodiversity. The establishment of a nature centre provides the citizens the opportunity to participate in the nature preservation, conservation and exploration processes from early childhood to the old age. The project have revealed that, quarry sites can be turned into places with beautiful views, where people are connected with nature and learn or reflect about environment.

7.2 Conclusion

The project has the idea of promoting nature education centre as efficient mean of awareness raising. Awareness was raised to schools and the community. It was later on raised to youth group from the community around the quarry. Through raising awareness, community people including youth, have changed their negative perception towards TPCCL. Vandalism practices have been eliminated. What is needed by the community is being involved in the TPCCL activities that do not require professionalism for them to earn an income.

Promotion of biodiversity that was done by the project has the visible effects; more birds are seen at the rehabilitated areas, flowers grow, which in turn causes the butterflies to increase. This is the evidence that more effort is needed to ensure the survival of the biodiversity and the sustainability of the practices that were done. The project has become to an end, but does not mean the end of activities. More activities are required as recommended by the project to ensure the survival of the biodiversity at the quarry sites. Project members are ready to take part on any activities concerning biodiversity promotion at the quarry through hands on activities at the quarry, schools and communities. Raising awareness to other communities surrounding the quarry as well as education to schools is what the project team is ready to do.

Project tags

This will be used to classify your project in the project archive (that is also available online)

Project focus:

- Beyond quarry borders
- Biodiversity management
- Cooperation programmes
- Connecting with local communities
- Education and Raising awareness
- Invasive species
- Landscape management
- Pollination
- Rehabilitation & habitat research
- Scientific research
- Soil management
- Species research
- Student class project
- Urban ecology
- Water management

Flora:

- Trees & shrubs
- Ferns
- Flowering plants
- Fungi
- Mosses and liverworts

Fauna:

- Amphibians
- Birds
- Insects
- Fish
- Mammals
- Reptiles
- Other invertebrates
- Other insects
- Other species

Habitat:

- Artificial / cultivated land
- Cave
- Coastal
- Grassland
- Human settlement
- Open areas of rocky grounds
- Recreational areas
- Sandy and rocky habitat
- Scree
- Shrub & groves
- Soil
- Wander biotopes
- Water bodies (flowing, standing)
- Wetland
- Woodland

Stakeholders:

- Authorities
- Local community
- NGOs
- Schools
- Universities

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**Einladung zum Deutsch-Tansanischen Fachkräfteaustausch „TUKO PAMOJA-
PERSPEKTIVEN WECHSELN“, Teil I in Hamburg**

In der Zeit vom **01.-14.10.2018**
Frau **Sylvia Gaudence RUAMBO**
geb. am/ in: **27.08.1973 in Dar es Salaam**
Pass Nr. **AB619061**

Sehr geehrte Frau Sylvia Gaudence Ruambo,

im Namen des **Internationalen Bildungszentrums dock europe** mit Sitz in Hamburg, laden wir Sie herzlich ein zur Teilnahme an unserer Weiterbildung „**Deutsch-Tansanischer Fachkräfteaustausch „TUKO PAMOJA- PERSPEKTIVEN WECHSELN“, Teil I**, die vom 01.-14.10.2018 in Hamburg stattfinden wird.

Für diese Zeit erhalten Sie eine Unterkunft, Verpflegung, Transportkosten vor Ort, eine Kranken-, Unfall- und Haftpflichtversicherung. **Für diesen Aufenthalt erklären wir hiermit die Kostenübernahme gemäß §§66-68 Aufenthaltsgesetz.**

Ich bitte Sie, unter Vorlage dieses Schreibens bei der Visaabteilung des Deutschen Generalkonsulats in Dar es Salaam einen Antrag auf Erteilung eines Visums für den oben genannten Zeitraum zu stellen.

Mit freundlichen Grüßen


Meike BERGMANN
Vorstand dock europe e.V.

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Hamburg, 16.07.2018

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Project questionnaires & results

1. Pre-project questionnaire

Participants: 7 environment committee members from the Basihaya community.

Chairman: Dr Kona – contacts – 0715 281 416

1. Questions

- i. Can you explain your experience with the TPCCL?
- ii. Have you participated on any activities concerning TPCCL?
- iii. Is TPCCL concerned with community issues?
- iv. What does your community benefit from the existence of TPCCL?
- v. What are the effects of TPCCL to you community?

2. Results

- i. 5 out of 7 participants said they perceive the existence of TPCCL as a chaos.
- ii. 7 out of 7 participants said they have never participated on any activity.
- iii. 4 out of 7 participants said they have never heard of it. 3 said they heard that the industry gave mosquito nets to few people in their community.
- iv. 7 out of 7 confirmed to have not benefited from the industry.
- v. 7 out of 7 participants confirmed to have witnessed effects such as floods due to water that flows from the industry, dusts, red soil that is carried away by water goes to human habitats and destroy their gardens.

3. Remarks

Results show that, people from the community have a negative perception towards the existence of TPCCL. This is because of the community having a conflict with the industry. The already quarried area was invaded by people and made the area as their legal habitats.

Complains about the dusts and water that flows from the industry and the soil that accompany rain water is another barrier. Community complains about this problem and they have been complaining to the industry but no measurements have been taken.

Additional question was posed on whether they are ready to volunteers in the rehabilitation process at the quarry. 5 out of 7 said they are not ready. 1 was ready, and 1 said he is not sure.

2. Post-project questionnaire

1. Questions

- i. After the project, what do you have to say about your experience with the industry?
- ii. After participating on the TPCCL environment activities, what have you gained?
- iii. Is TPCCL concerned with community issues?
- iv. What does your community benefit from the existence of TPCCL?
- v. What are the effects of TPCCL to you community?

1. Results

i. 6 out of 7 have confessed that they perceived negatively about the industry but after the experience during the project, they have changed their perceptions. 1 was not available during the post-questionnaire session.

ii. 6 out of 6 participants, have gained knowledge about environment conservation, how to preserve environment and gain an income out of environment.

iii. 5 of 6 participants said that so far, the industry is not concerned much with the community.

iv. All participants said that they are sure of benefiting more from the fruits, medicinal and shade trees which are distributed to institutions that need them. They have benefitted from papaya trees which now are sold, eaten and generate more seedlings.

v. The effects are rain water and soil.

2. Remarks

After being trained about safety measures taken by the industry, participants understood about the dust. At first they believed that industry produce dust that affects them, but in reality, the industry takes measures to control. The dust seen is the dust that is coming from around the environment.

Participants were able to participate voluntarily to the project from the day they were inducted and trained. Only 1 participant dropped out.

Participants have requested the industry to involve them on any activities that can enable them gain an income. This is because after the training and the project, it was agreed that the practices of cutting down trees, quarrying and extracting red soils should end. The whole community was discussing this at the meeting held, and decided that youth who are doing this should be trained on the impacts.

Youth were trained and all agreed to stop vandalizing the infrastructure of the TPCCL. To enable them earn an income, training on how to use environment to earn an income while conserving.