

I. Introduction:

Three Science Centers, which are fully funded by the Gelfand Family Charitable Trust, have undergone formal inauguration in the month of October 2011. Of the three science centers, Foka Science and Engineering Center which operates under the auspices of Bishoftu City Administration is well organized and has been operational for more than a year and a half. At the moment it is supporting the other two Centers to organize and launch their program. The second Science Center is located in Tigray Region and operates under the auspices of Kalamino Special High School. The Center has four laboratories of which two laboratories are partly equipped. The third Center is Addis Ababa Science Technology Engineering and Mathematics Center. This Center is located in Akaki- Kaliti Woreda and operates under the auspices of the Ethiopian Electrical Engineer's Society. The Center is organized in a building which was formally intended to house an institute for higher level technologists.

An extension of the Science Center Program is an outreach program undertaken by two Universities, Bahirdar University and Axum University. In addition Gondar University is figuratively involved in the same program.

II. Purpose of the report

1. To give high lights on the achievements of Foka Science and Engineering Center Based on its annual plan.
2. To provide information on the status of Kalamino and Addis Ababa STEM Centers.
3. To provide information on the status of Bahir Dar and Axum Universities Outreach programs.
4. To reflect on some of the achievements and set-backs of the undertaking.

III. Highlights of the achievements of Foka Science and Engineering Center

At the beginning of the current academic year the Center had drafted a plan of action (See Annex 1) which specified the different activities that the Center need to under take in line with its goals. The draft of the plan was presented to Mr. Gefand at the conclusion of his visit during the last week of

October. Moreover the same plan of action has been subjected to team scrutiny and is still undergoing review every fifteen days.

This part of the report outlines the achievements of the Center based on the draft plan of action.

1. **Basic Training:**

As per plan for this period of time on the action plan , the Center has launched its basic training program for the levels grade 7-8. Based on the advice of the Education Office, the Center screened 120students from a list of students exceeding 400 students from ten primary schools. Despite disruptions caused by holidays and examination the program is being implemented starting January 2012. Soon the first round training will be completed and second round will be launched in the second week of March.

2. **Student Project work:**

Student project work is the second but major component of the Center program. In order for this program to thrive and be sustainable it has to be carefully crafted and be integrated with the other Center Programs. Thanks to the contribution of Kimberly Kamborian the center has already acquired very useful materials which would be adopted to develop its own guide. At this stage the Center is conducting a series of brain storming sessions to prepare detailed plan for the outreach program.

3. **Science fair competition:**

Science fair competition is a continuation of the student project. But since it has additional features such as screening, exhibiting, defending, evaluating and prize award it needs to be planned separately, At this period of time no activity is undertaken with regard to this program.

4. **Internship program:**

According to plan internship program for Foka teachers was planned to take place in March with preliminary activities in the preceding two months. But presently there seems to be a change of plan.The Education Office has secured budget support through Abeba and they are carrying out their training program, which somehow has short circuited the Center's effort to put the laboratories on a better footing through successive training and mentoring activity.

5. **Provision of technical assistance to Universities with outreach program:**

The second strategy devised by Mr. Gelfand for the advancement of science and engineering is through the introduction of enriched science and mathematics instruction at the level of primary and secondary education with emphasis in practical work in the laboratories.

The implementers of the program are Universities who are believed to have rich human and material resources. With this as a central point, three partners have been brought on board by Mr. Gelfand to execute the programs for two years period. Of the three Universities Axum and Bahirdar Universities have been chosen by the Ethiopian Electrical Engineers Society. Moreover the Society has contributed a lot, and still is, in convincing the Universities to embark on the undertaking.

The three partners in this program are :

- Gondar University ,
- Bahirdar University, and
- Axum University

Though, Gondar University was the first one hand picked to implement outreach program and has received substantial material assistance, it seems to be at a loss as to how to start the program. The other two Universities are seriously committed to the program.

The support provided by Foka to the two Universities so far are:

- Drafting and reviewing project document for the outreach program,
- Conducting on site observation and conducting panel discussions,
- Providing technical assistance and advice on request.

6. **Provision of technical support to Newly established Science Centers:**

Kalamino and Addis STEM are two newly established centers which were officially opened in the third week of October 2012. In line with its duty and responsibility Foka has been providing technical support to both Centers, some of which are cited as follows:

- Providing technical advice regarding organization and set up of laboratories,
- Assisting in the procurement of equipment and furniture,
- Orienting staff of the new centers on the programs of the center,
- Organizing internship program for technical staff (soon to take place)

7. Organizing Children's Program:

This program is an application of the program outlined in the Center's Program. The program targets students of the age group 7-10. So far the Center has implemented two three months activity. The first three months activity involved 41 children and the second three months activity involved 68 children .One additional virtue of the program is the involvement of parents in the program. The third three months program is on the verge of starting. The program employs two approaches to engage children in the activities. The first approach is conducting a series of science demonstrations which assist the children to give meaning to natural phenomena. Such demonstrations included the following activities.

- Bending a bone with vinegar,
- Blowing up a balloon with yeast,
- Chicken sound from a cup,
- Cleaning pennies with vinegar,
- Making a balloon rocket,
- Making a Cartesian diver,
- Demonstrations to show that air occupies space,
- Demonstrations to show that air exerts pressure, etc.

The second approach concentrates on activities which engage children in constructing some appliances related to children's toys with intentions to inspire them to engage in engineering feats.

Some of these undertakings include:

- Kite construction,
- Yoyo construction,
- Construction of paper planes,etc.

IV. Status of science centers and outreach programs

1. Science Centers

1.1. *Kalamino Center:*

As a first step to launching its program the Center has recruited lab. Experts for the four laboratories). The recruiting criteria was set in collaboration with Foka Center. The second and crucial step is to train the experts on program development and technical aspects of the four laboratories. This training, "Internship" is planned to take place starting the last week of February up to the last week of March 2012.

1.2. *AA STEM Center*

AA STEM has also recruited three Lab. Experts and a Manager. Similar to Kalamino Center, the staff will undergo training in the same period.

During the last three months, the Center has performed two important and essential activities. The first one is creating a link with the Education Office of their respective district, which is Akaki Kaliti Wareda. This has enabled them to conduct preliminary discussion on developing relevant program which is compatible with the curriculum and the academic calendar.

The second activity is the launching of children's program for the age group 7-10. This program is almost the same with that of Foka Center. Twenty students are enrolled in the program and are attending the weekly Saturday program.

2. Outreach Programs

2.1. *Gondar University Outreach program:*

Though Gondar University was the first university hand-picked by Mr. Gelfand to start outreach program it is still dragging its feet to get committed. The workshop which is going to be hosted by Bahirdar University might coax it into action.

2.2. *Bahirdar University Outreach program:*

Bahirdar University seems to be a pacemaker for the outreach program. To date it has implemented all activities as set in the action plan of the project. These are highlighted in the outline report delivered to Foka Center. (See Annex 2 for the outline report). As a testimony to their commitment, they have prepared and administered a check list to establish status of science clubs in different schools. Based on the findings of the check list they have developed a guide to strengthen the clubs so that they will be in a position to generate students of the desired caliber for the summer program.

2.3. *Axum University Outreach program:*

The University has declared its readiness to launch its program the moment it receives the Fund from TDA. So far it has established the core group which is required to organize and launch the program. It is also contemplating on strategies of making the program accessible to students of rural areas.

V. Achievements:

1. The coming into being of three centers in the three major Regions of Ethiopia.
2. Strong links established between Foka and the two other centers.
3. Minimum standard for building ,equipping and organizing of science centers established,
4. Procedure (though needs refinement) for procurement, payment and distribution established,
5. The launching of outreach program,

VI. Set-backs

1. Slowness in ordering, transfer of payment and at times even in the distribution of imported goods.
2. Reservation on the part of the logistic and finance team, which is led by Abeba, to consult Foka team when initiating projects pertaining to operation. Advising the education Office to prepare a project document and getting it endorsed without involving the Center in the process is an example.
3. Reluctance of the School Office, school management and teachers to take the initiative in program setting and implementing.