



Armenia Renewable Resources and Energy Efficiency Fund

REPORT ON SOCIAL MONITORING CONDUCTED IN 11 SCHOOLS INVOLVED IN UHP PROJECT



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The purpose of the report

This report aims to present the summary of the results obtained from social monitoring conducted in 11 schools involved in Urban Heating Project. It includes the description of used methodology, tools, tools' pre-testing, obtained results and recommendations for improvement.

The report could be useful not only for assessment of the social aspects of the project but also for identification of some aspects of quality improvements for similar projects.

Brief background

Within the scope of Urban Heating Project energy efficiency solutions were piloted 11 schools from yerevan and marzes, with the resulting benefits of increased comfort and/or reduced energy bill in these schools.

The heating system rehabilitation and energy efficiency solution were implemented in all 11 schools and the Fund was interested in social aspects of the mentioned project implementation.

The purpose of social monitoring

R2E2 Fund was interested in social aspects of project implementation, to be more specific to reveal behavioral changes, user satisfaction issues and awareness on energy efficiency measures.

R2E2 Fund was going to use the results of social monitoring for improvement of quality of provided services within the scope of similar projects.

The description of used methodology, participants' involvement and tools

Since almost all technical data (quantitative data) were available and the Fund were more interested in behavioral impacts, user satisfaction and awareness aspects it was decided to use focus group discussion method. It is an effective way to gather qualitative data with targeted group. Focus group is a formal session facilitated by the moderator with expertise in getting a group to share opinions and experiences in order to determine how a certain group members view a particular issue.

Based on the fact that focus group discussion results can be skewed if a dominant person in a group influences opinions of the rest of the group, and taking into account that teachers somehow can have an influence on students' opinion the focus group discussion was conducted with two separate groups: group of students and group consisting of teachers, deputy directors, person responsible for operation and maintenance of heating system and nurse.

For each group separate guides for focus group discussion were developed.

Guide for teachers and administrative personnel (see Annex 1) involve the following domains:

- General attitude of personnel toward implemented works
- Concerns of personnel for maintenance and operation of established heating system and energy efficiency measures
- Behavioral changes among students due to the project implementation
- Identify the need for organization of energy efficiency trainings in the school.

Guide for students (see Annex 2) involves the following domains:

- General knowledge about the ways used for school heating
- General knowledge about the energy efficiency means
- General attitude of students toward the implemented works, current comfort level in classrooms and behavioral changes due to the project implementation
- Identify the need for organization of energy efficiency trainings in the school.

Under each of the listed domains several open ended questions to address the topic were developed. Moderator asked the questions in stated order and probed with more in-depth follow up questions to clarify and confirm the responses. Assigned person recorded responses, which provides an opportunity to go over the responses in great detail.

In addition to the focus group discussion method the short questionnaire for director were developed (see Annex 3) and pre-tested. The questionnaire aimed to disclose some numbers for attendance rate, mortality rate, user satisfaction issues as well as recommendations to improve the project. The questionnaire consists of 10 questions, from which last 2 questions are open ended and aimed to reveal user satisfaction and any recommendations for project improvement.

Pre-testing

Pre-testing of monitoring tools shows, that in general tools are well structured, comprehensive and informative. It is suggested to change the definition of questions number 4 and 5 in questionnaire for director, to be more specific, instead of asking % of compulsory lessons, to ask the number of school events, because compulsory lessons are proposed by the State and should be conducted in any case, whether the comfort level is satisfactory or not.

There is no other recommendation to improve the tools.

Selection of schools

From all 11 schools 4 schools were randomly selected for social monitoring. For random selection of the schools a lot was organized with the participation of 4 representatives from R2E2 Fund and minutes of the lot are attached to the report.

Since the obtained results were repeated there was no need for additional schools involvement.

About 66 participants were involved in the social monitoring and the summary of obtained results is presented below.

Summary of results obtained form interview with directors

Four directors from selected schools were interviewed and the summary of interviews is presented below.

The directors were very satisfied with energy efficiency actions implemented in the schools. They mentioned the huge positive impact that the program have on students and teachers.



*Photo: R2E2 Fund.
Interview with Artik school number 8 director Pargev Kurghinyan*

In comparison with 2009-2010 heating season for 2010-2011 heating season the attendance rate were increased in average for 10% for all schools involved in social monitoring.

In comparison with 2009-2010 heating season for 2010-2011 heating season the number of different events increased in average for 13% for all schools involved in social monitoring, due to the fact that currently the schools have comfortably heated classrooms, corridors, halls.

In comparison with 2009-2010 heating season for 2010-2011 heating season the morbidity rate decreased in average for 9% for 3 schools involved in social monitoring. Unfortunately in one of the schools there is no decrease of morbidity rate: 2009-2010 heating season morbidity rate were 9% and for 2010-2011 heating season – 13.4%. Director of the mentioned school did not see any correlation between improved heating and morbidity rate and has some other explanations for morbidity rate increase, not related to school heating conditions.

The directors also mentioned that energy efficiency actions implemented in the school somehow helped to reach the requirements for qualitative education, and they will recommend other schools to be involved in the project.



*Photo: R2E2 Fund.
Interview with Mughni school director Mushegh Galstyan*

As a recommendation, directors suggested to conduct construction works in summer, in order to avoid many organizational problems related to parallel implementation of construction works and educational process.

Summary of results obtained from focus group discussion with teachers and administrative personnel

30 representatives from different schools formed groups to participate in 4 focus group discussions. The groups consist of teachers, deputy directors, persons responsible for operation and maintenance of heating systems, parents and nurses. The summary of the results is presented below, by domains.



*Photo: R2E2 Fund.
Focus Group discussion in Mughni school*

Domain 1: General attitude toward implemented works.

Participants mentioned that they are very satisfied with the quality of conducted works. Classrooms are very comfortable and students come to school with pleasure. The students and teachers enter the classes without coats and the appearances of teachers are more representative, which is very important component of educational process. Besides, as a result of entering class without coats students from elementary classes significantly improve handwritings.



*Photo: R2E2 Fund.
Focus Group discussion in Vayk college*

Participants stated that parents of children are grateful for implemented works and sent their children to school, without having any doubt that child could get cold or have some flu. Due to the implemented works the sport hall became more comfortable and attendance to the physical activity classes increases, which is very important for students' physical and psychological health.

Participants noted that due to the comfort level increase teachers and students are more devoted to the educational process. The students progress increase, so there is huge attitude change among students and teachers. In some schools, due to the comfort level increase, they organized Sunday school for students.

Comfortably heated schools stimulate teachers and students for different events organization. School personnel did not avoid events organization in winter. Moreover, in previous heating seasons one of the schools rent some hall outside of the school to organize winter events, which cost money, currently due to the project implementation, the winter events are organized in school, thus the school have some financial savings.

Participants noted that the operation of heating system is satisfactory. For one of the schools it was stated that even with the operation of only one boiler provides there is an opportunity for entire school to be heated, with proper comfort level.

From organizational, comfort level, communicational and health perspectives participants mentioned only privileges, no disadvantages. Due to the implemented works the schools increased the comfort level, students are in better health, the number of school events increased, students attendance increased, students' progress increased.



*Photo: R2E2 Fund.
Focus Group discussion in Mughni school*

Moreover, participants stated that in comparison with 2009-2010 heating season they feel more comfortable and secure due to 3 main reasons: 1) improved health of students and teachers, 2) decreased risk for emergency situations (fires, intoxications, injuries and so on) 3) improved mood, students and teachers are more active and enthusiastic.

From financial perspective participants mentioned that there are financial difficulties related to the heating of all site of school, although the constructed heating system have an opportunity to cover all sites, but gaz is too expensive for school. In another school they mentioned that for 2009-2010 heating season the expenses for electricity were equal to AMD 367 000, with very low comfort level, for 2010-2011 heating season the expenses for gaz were equal AMD 590 000, with good comfort level. But the concern is related to weather changes, the 2010-2011 heating season was not cold, but for cold winters the school can not afford gaz heating.

The participants from school located in Artik suggested while planning the school budget Government to take into account the geographic location of school, because the heating season stated by local governance bodies did not coincide with actual heating needs for Artik. They

recommend keeping larger budget for schools similar to Artik geographic location. Another financial difficulty for Artik school is related to the number of students. Since the number of students is small the budget for school is also small and the school can not cover gaz expenses, and provide heating with appropriate comfort level. Although the school administration expects that with heating system establishment the number of students will increase, but still using gaz for school heating will be serious financial burden.

Below presented the photos from focus group discussion in Artik school. The focus group was conducted in April 14, 2011 and the school was not heated. It was cold and students and teachers have to enter the classes in coats.



*Photos: R2E2 Fund.
Focus Group discussions in Artik school number 8*

The participants mentioned that construction works (noise, dust) did not harm educational process, but participants from some schools suggest starting construction works in summer, in order to avoid many organizational problems related to parallel implementation of construction works and educational process.

Beside many positive aspects, the participants mentioned some minor malfunctioning, as for example, in some classrooms the installation of windows was not perfectly done. The other weakness is related to partial renovation of classrooms, for example the wall with newly installed window is renovated, but the other parts of the classroom are not renovated. Another recommendation was related to ventilation of classrooms. In parallel with heating system establishment and windows and doors replacement it was suggested to establish ventilation system for fresh air in the classrooms.

One of the schools suggested involving in the project not only the main school building, but also library, cafeteria, administrative department which were not in the main building. The mentioned

sites are heated with electricity and it is impossible to reach the required comfort level. Thus, for winter period student can not use library and other sites outside of main building.

Domain 2: Concerns of personnel for maintenance and operation of established heating system and energy efficiency measures.



Participants mentioned that they do not have any major concern related to maintenance and operation of established heating system and energy efficiency measures, yet they did mention one minor imperfection. It is related to the fact that a person who is responsible for operation and maintenance of heating system receive remuneration only for heating seasons, so for summer he did not get any payment. Thus, he is trying to find some new job in other institutions and the school loses qualified personnel. For secure maintenance and operation of established heating system participants from one of the schools suggested to use the experience that they have in their school. School administration put some signs above radiators to pay attention for accuracy in maintenance.

Photo: R2E2 Fund.
Sign for students to pay attention for accuracy in maintenance in Vayk college

Teachers mentioned the sign persuade students to be more careful with radiators and pipes and it helps to safe schools' furniture and equipment.

Domain 3: Behavioral changes among students due to the project implementation

Participants noted that there are huge positive changes in the behavior of students. Students are more devoted to the education process, the attendance increases, due to which students' progress improved. In comparison with last winter the outflow of student to other schools stopped. One of participants quoted the words of a student "we do not want to go home, in the school we feel more comfortable". Due to new heating system installations the schools have comfortable classrooms and halls for different events' organization, as a result of which student actively participate in various school events. Students feel more protected, they feel that the Government takes care of them.

Domain 4: Identify the need to organize energy efficiency trainings in the school.

Participants mentioned that energy efficiency is very important issue for Armenia, but it is a bit early to organize trainings for students on this issue. However, some important elements of energy efficiency could be included in the curriculum of basic courses.

Summary of results from focus group discussion with students

32 representatives from students formed 4 groups to participate in the focus group discussions. The group consists of students from VII, VIII, IX and XI classes. The summary of the results is presented below, by domains.

Domain 1 : General knowledge about the ways used for school heating



Students noted that schools are differently heated in the cities and villages. In villages the majority of schools use kerosene, which is not safe and could be the reason for fires, intoxications, injuries. In cities the gaz is used for heating, which is much secure and students feel more comfortable in classrooms. Students stated that since the gaz resources restricted it is necessary to start using natural energy sources, as for example sun energy, water energy, wind energy.

*Photo: R2E2 Fund.
Focus Group discussion in Mughni school*

Domain 2: General knowledge about the energy efficiency means



*Photo: R2E2 Fund.
Focus Group discussion in Mughni school*

Students noted that energy efficiency is really very important for such small country as Armenia. As an example of energy efficiency means they mentioned the construction of hydroelectric stations, using the sun and wind energy. In addition, students mentioned windows and doors replacement (they make a gesticulation; show replaced windows and doors), which is also an effective energy efficiency mean. In addition students noted that energy efficiency somehow is related to behavioral changes, for example they should turn off the light leaving the room, not turn on the light in day time, use sun light.

Students from Mughni school, mentioned that they have special reservoir for water heating with sun energy, they use the heated water for washing hand after physical activity classes.

Domain 3: General attitude of students toward the implemented works, current comfort level in classrooms and behavioral changes due to the project implementation



*Photo: R2E2 Fund.
Focus Group discussion in Vayk college*

Students stated that they are thankful for the heating system construction works conducted in their school. They come to class with pleasure, and do not want to go home, because it is cold in their homes. In comparison with last winter (2009-2010 heating season) it is much more comfortable in classrooms and corridors, and the important thing is that at the present they may open the windows for fresh air, while last winter, due to the insulation of windows with plastic they cannot have fresh air in classrooms.



*Photo: R2E2 Fund.
Focus Group discussion in Vayk college*

Moreover, students mentioned that attendance to the school and students' progress increase. Several students mentioned that last winter they often have flu, and missed classes; while this winter none of them had flu. In comparison with last winter the oil is not used for heating and it is much clearer in classrooms. In addition, while using oil for heating, in windy weather they often interrupt lessons to open the windows and freshening the class, due to oil smog.

Students also mentioned that in previous winter physical activity classes were conducted in the school yard or in other classes not adapted for physical activity classes. Currently they have good

well heated sport hall and attend the physical activity classes with pleasure. The same issue was mentioned for computer classes.

The students noted that construction works (noise, dust) did not have significant negative influence on education process, because they often change classes, to be far from the construction works.

In conclusion, students noted that in comparison with last winter 3 important changes took place: 1) clear classrooms 2) it is much more secure 3) school discipline and students' progress increased.

Domain 4: Need to organize energy efficiency trainings in the school.



*Photo: R2E2 Fund.
Textbook for energy
efficiency records*

Students mentioned that they would like to have energy efficiency classes in the school, because they find it interesting and useful. They mentioned that for future generations energy efficiency will be more important. Meanwhile they mentioned that classes should be organized for students above VII class.

In Mughni school, students have energy efficiency classes organized by local NGO and Norwegian Society for the Conservation of Nature. Students mentioned that they attend the classes with pleasure, and have some special notebooks (see picture) to feel in the daily volumes and expenses for energy consumption and etc. It was obvious that students from the mentioned school are well informed on energy efficiency issues.

Annex 1. Guide for focus group discussion with school administrative personnel and teachers

Oral consent: include the description of the purpose of discussion, duration, importance of participation, anonymity and confidentiality issues.

Name of the school: _____

Names of the participants: _____

Contact numbers: _____

Domain 1

Purpose : To reveal general attitude of personnel toward implemented works

1. How would you characterize the works conducted in your school? What did you appreciate most of all? What would you do differently?
2. Could you please define any financial, organizational, comfort level, communicational, health privileges?
3. Could you please define any financial, organizational, comfort level, communicational, health disadvantages?
4. Did the conducted works somehow damage the educational process (noise, dust)? If yes, what would you suggest to do in order to avoid it?
5. In comparison with 2009-2010 heating season (clarify, last winter) did you feel more comfortable or less comfortable? Why, please list 3 more significant reasons?

Domain 2

Purpose : To reveal concerns of personnel for maintenance and operation of established heating system and energy efficiency measures

1. Do you have concerns for appropriate maintenance and operation of established heating system and energy efficiency measures?

Domain 3

Purpose: To reveal general behavioral changes of students, from the perspective of director, teachers and other school personnel.

1. Did you notice any positive changes in behavior of students; did they become more devoted to education process?

Domain 4

Purpose: Identify the need for organization of energy efficiency trainings in the school.

1. Will you be interested in energy efficiency trainings to be organized in the school?

Thank you for participation

Annex 2. Guide for focus group discussion with students

Oral consent: include the description of the purpose of discussion, duration, importance of participation, anonymity and confidentiality issues.

Name of the school: _____

Names of the participants: _____

Contact numbers: _____

Domain 1

Purpose : To reveal general knowledge about the ways used for school heating

1. In your opinion how your school is heated?
2. Which sort of resource the school uses?
3. Which sort of resource is better to use for school heating? Why?

Domain 2

Purpose: To reveal general knowledge about the energy efficiency means

1. In your opinion what is energy efficiency?
2. What was done in your school to improve the energy efficiency?

Domain 3

Purpose: To reveal general attitude of students toward the implemented works and current comfort level in classrooms.

1. Did the conducted works somehow damage the educational process (noise, dust)? If yes, what would you suggest to avoid it?
2. In comparison with 2009-2010 heating season (clarify, last winter) did you feel more comfortable or less comfortable? Why, please list 3 more significant reasons?

Domain 4

Purpose: Identify the need for organization of energy efficiency trainings in the school.

1. Will you be interested in energy efficiency trainings to be organized in the school?

Thank you for participation

Annex 3. Questionnaire for director of the school

Oral consent: include the description of the purpose of interview, duration, importance of participation.

Name of the school: _____

Name of the director: _____

Contact number: _____

1. How satisfied are you with energy efficiency actions implemented in the school?
 - a) Very satisfied
 - b) Satisfied
 - c) Somewhat satisfied
 - d) Not satisfied at all
2. What was the attendance rate for 2009-2010 heating season?
3. What was the attendance rate for 2010-2011 heating season?
4. What was the number of school events (% of conducted compulsory lessons) for 2009-2010 heating season?
5. What was the number of school events (% of conducted compulsory lessons) for 2010-2011 heating season?
6. What was morbidity rate in school for 2009-2010 heating season?
7. What was morbidity rate in school for 2010-2011 heating season?
8. Did the energy efficiency actions implemented in the school somehow helped to reach the requirements for qualitative education?
 - a) Yes
 - b) No
9. Would you recommend other schools to be involved in the project? Why?

10. Would you like to give any suggestion for changes or improvement?

Thank you for participation