

SUSTAINABLE ENVIRONMENTAL PRACTICES AND POLICIES (SEPP)



THIRD QUARTERLY NARRATIVE REPORT

**Reporting Period
February 1, 2004 – April 30, 2004**

Date: May 28, 2004

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INTRODUCTION:

The YMCA of the USA and the YMCA of Lebanon signed a cooperative agreement on July 15th, 2003 with the U.S. Agency for International Development to undertake an integrated environment program initiative aimed at improved environmental practices and policies for management of solid and water waste in rural Lebanon.

The environment program will directly benefit 56 communities throughout the country by establishing **four solid waste treatment centers**, processing waste from 56 villages, and **nine waste water treatment centers**, treating water from 12 villages covering the Bekaa (South West), Nabatieh (Nabatieh), and the South (Jezzine). In addition, the YMCA will conduct a **comprehensive environmental educational program** focused on building the knowledge base on waste management practices and strengthening capacity in municipalities and local communities for sustainable environmental management. The YMCA of Lebanon is providing technical resource material and practical solutions to waste management in rural areas in an effort to influence and forge a sound national environmental policy.

This report covers the monitoring and executional phase of the program period extending over the third quarter (February 1, 2004 - April 30, 2004). Key activities during this period included the monitoring of the projects that had started in the second period of the program such as sewer networks, studying and installing the best fit technology for the wastewater treatment plant in the targeted community, preparing the environmental impact assessment of the projects, building the capacity of a team to implement the awareness campaigns, and discussing the lessons learned from old projects of wastewater and solid waste treatment facilities.

During this period, no new contract agreements were signed between the YMCA and municipalities due to the upcoming municipal elections (May 2004). The elections posed two challenges for the project:

- § Mayors and the membership of municipal councils may change partially or completely, and thus the new contract agreements may be affected.
- § Election campaigns dominated civic life all over the country and had the first priority of importance.

Through the Sustainable Environmental Practices and Policies Program (SEPP) the YMCA has gleaned important knowledge about effective practice working with municipalities in the fields of education/information-sharing, application of relevant technology and appropriate standards in sustainable service provision and maintenance through local municipal government structures. In each project site, the YMCA has effectively engaged in negotiation with different village groups to ascertain local level concerns on solid waste treatment and to develop and implement effective environmental management practices with key stakeholders. This participatory process has on occasion caused delays in the original execution dates but in all cases has positively influenced the ownership and sustainability of each project on the local level. Most recently negotiations and a new agreement is being developed between the Rihan and Jezzine with regards to identification of a site for the development of a solid waste facility.

The activities carried out in the Sustainable Environmental Practices and Policies program are grouped into three components:

1. **Dissemination of knowledge** on environmental management practices.
2. **Physical infrastructure development** for solid and waste water management.
3. **Engaging in dialogue and influencing policy** on environmental management.

The current quarterly narrative report describes the activities achieved to date.

COMPONENT 1

Dissemination of knowledge

On Environmental Management Practices

What was achieved?

The YMCA partnered with ECODIT to promote better environmental management practices. ECODIT has conducted the following:

1. Field visits to the treatment facilities for solid waste and waste water.
2. Two workshops in Rachaya and Nabatieh areas.

Both workshops focused on the results of the solid waste and wastewater management facilities and addressed similar topics with regards to management of solid waste management facilities and wastewater treatment plants.

The topics covered were:

- Institutional setting
- Use of Technology
- Costs
- Project impact
- General recommendations

Details of these achievements were provided in the first and second quarterly reports.

Activities in process

ECODIT is preparing a detailed report on:
Lessons Learned in relation to the YMCA's Solid Waste Management (SWM) Facilities

Preliminary Outline

1 Introduction

- 1.1 Report Background
- 1.2 Report Objectives
- 1.3 Methodology
- 1.4 Report Organization

2 SWM Facilities by YMCA

- 2.1 Old Program (from – to?)
- 2.2 SEPP Program (from – to?)

3 Lessons Learned During Planning

- 3.1 Successes
 - 3.1.1 Demand-driven projects
 - 3.1.2 Partnerships with municipalities
 - 3.1.4 Project co-financing
 - 3.1.5 Estimation of capital costs
 - 3.1.6 Selection of appropriate technology
- 3.2 Challenges
 - 3.2.1 Inconsistency between projects and national programs
 - 3.2.2 Limited technical and financial capabilities of municipalities
 - 3.2.3 Maintenance and operation costs not honored

4 Lessons Learned During Construction

- 4.1 Successes
 - 4.1.1 Development of draft legislations
 - 4.1.2 Selection of different contractors for different tasks
 - 4.1.3 Choice of land
- 4.2 Challenges
 - 4.2.1 Execution without permits
 - 4.2.2 Separate supervision over contractual works
 - 4.2.3 Nature of land to excavate
 - 4.2.4 Underestimation of environmental assessment
 - 4.2.5 Choice of mechanical systems

5 Lessons Learned During Operation

- 5.1 Successes
 - 5.1.1 Decentralization of waste management solutions
 - 5.1.2 Higher rates of waste diversion
- 5.2 Challenges
 - 5.2.1 Power consumption not accounted for in budgets
 - 5.2.2 Variable commitment of workers
 - 5.2.3 Limited waste legislation
 - 5.2.4 Ineffective municipal supervision
 - 5.2.5 Maintenance contracts not honored
 - 5.2.6 Source segregation programs not sustained
 - 5.2.7 Financial performance of SW facilities not monitored
 - 5.2.8 Poor management capabilities of municipalities
 - 5.2.9 Intermittent power supply
 - 5.2.10 Low-grade compost
 - 5.2.11 Downtime of equipment
 - 5.2.12 Accumulation of compost and recyclables (unreliable market outlets)
 - 5.2.13 Disposal of trash

6 Cross-Cutting Recommendations

COMPONENT 2

Physical Infrastructure For Solid Waste Water Management

The YMCA proposes to build 13 waste facilities in the country through the Sustainable Environmental Practices and Policies Program. The YMCA will develop 4 solid waste treatment centers involving 56 villages and 9 waste water treatment centers involving 12 villages. More than 56 communities and 1,953,500 persons will benefit directly from improved waste practices (i.e., safer disposal and treatment of solid waste and wastewater and protection of natural resources, including water and soil). The YMCA's proposed facilities will also transform part of the waste stream into valuable by-products such as compost (a high-value soil conditioner) and treated wastewater (an important source of irrigation water in summer).

The YMCA has identified a new technology that will be applied to manage larger amounts of daily solid waste. This technology will use:

- Concrete rows to accumulate all sorted organic waste.
- Ventilation pipes and electrical blowers to provide air for the composting system.
- Turner system for mixing the compost to become homogeneous, fluffy, and mature.
- New equipment for the measurement and registration of compost temperature and humidity.

Although the YMCA is seeking and promoting new composting technologies, as above, for domestic solid waste, some community leaders have refused to proceed in these projects due to negative perceptions of the potential impacts (i.e. smell, fumes, leachate, misoperation, cumulation of solid wastes of other villages, etc.). The YMCA still works with local leaders to identify alternate sites and to explain the importance and impact of waste sorting, waste reduction and management. Videotapes were prepared to facilitate the presentation of techniques and management of solid wastes. This process may cause a temporary delay in Jezzine and Rihan solid waste management facilities.

The YMCA applies ongoing technological enhancements in order to best address specific concerns which may arise from each project site and to ensure that the SEPP program accesses the latest research and improvements in technology.

Solid Waste Treatment Centers (4 centers)

1. CHKEEF CENTER (60 TONS/DAY)

The Chkeef Municipalities Union (CMU) is the major partner in the project implementation. The Chkeef Municipalities Union approved and provided a piece of land in Zawtar el Gharbieh to build a solid waste facility capable of treating 60 tons per day.

A contractual agreement between the YMCA and CMU representatives was signed. The YMCA made a public announcement in U.S. newspapers for the Solid Waste Treatment Facility tender and offers will be submitted on June 30, 2004 to the YMCA’s offices either in the U.S. or in Lebanon. Municipal elections will take place on May 23, 2004 and thus the YMCA team will have time to introduce this project to the new mayor and municipal council in order to initiate implementation right after the tender opening.

Village Served	Number of Households	Number of Individuals	Altitude (m)
Nabatiye	5,714	40,000	400
Harrouf	1,285	9,000	400
Jibshit	1,428	10,000	400
Zawtar ElGharbiyeh	360	2,500	400
Zawtar El Charqiyeh	365	2,550	400
Kfartebnit	995	6,950	400
Nabatiye El Fawqa	1,121	7,850	400
Qaaqayat ElJisr	821	5,750	400
Habbouch	1,400	9,800	400
Zoubdin	475	3,350	400
Mayfadoun	760	5,300	400
AlKfour	575	4,000	400
Kfarrouman	1,355	9,500	400
13 Villages	16,654	116,550	

2. RACHAYAH CENTER (15 TONS/DAY)

Three essential meetings were held with the municipalities and the local communities in Rachaya. Two technical presentations were given to inform the interested parties of the benefits of the technology and the need for sound environmental practices.

The Rachaya Municipality Council (RMC) offered three pieces of land in Rachaya village to build a solid waste treatment facility of 15 tons daily capacity. YMCA engineers selected one of these sites, taking into consideration the prevailing parameters: the speed of wind, distance from the nearest house, its relative location to the surrounding villages, the type of soil and its topographical site (hills, valleys, etc.). The RMC bought the land (13,000 m²) and a contract agreement between the municipality and the YMCA was signed. The YMCA made a public announcement in U.S. newspapers for the Solid Waste Treatment Facility tender and offers will be submitted on June 30, 2004 to the YMCA's offices either in the U.S. or in Lebanon. Municipal elections will take place on May 23, 2004 and thus the YMCA team will have time to introduce this project to the new mayor and municipal council in order to initiate implementation right after the tender opening.

Village Served	Number of Households	Number of Individuals	Altitude (m)
Rachaya	1,200	7,000	1,250
Ayha	500	3,000	1,250
Mhaidseh	300	1,800	1,200
Daher El Ahmar	500	3,000	1,150
Ain Atta	400	2,400	1,400
Tannoura	200	1,000	1,000
Ain Harcha	200	1,000	1,050
Beit Lahia	100	600	1,000
Kfarmichki	160	1,000	1,250
El Houche	100	600	800
AlAakaba	350	2,100	850
Kawkaba	170	1,000	1,000
Majdel Balhis	240	1,500	1,350
Bakkifa	160	1,000	950
15 Villages	4,580	27,000	

3. JEZZINE CENTER (20 TONS/DAY)

Initially, this new center was not included in the original proposal; however, due to the division of the Rihan facility into 2 centers, the YMCA identified a new center in Jezzine to treat the solid waste of the Jezzine area. The mayor of Jezzine proposed a piece of land in the Jezzine area, however the land was located close to Kfarhouna village. This fact raised high complaints from the Kfarhouna community and altered the proposed site. The YMCA tried to find new land in other villages in the Jezzine area before the end of March 2004, but unfortunately no other land was secured. The YMCA tried to find an appropriate site with the local communities, but with municipal elections dominating local agendas, all trials and negotiations were postponed until the end of June 2004.

Village Name	Number of Household	Number of Individuals	Altitude (m)
Jezzine	2,000	12,000	950
Bkassine	450	2,250	900
Benawti	150	2,000	800
Almidan	160	1,000	800
Alharf	50	300	850
Qaytouli	600	3,000	800
Machmouchi	65	300	950
Sabbah	85	425	1,000
Saydoun	150	750	700
Rimat	50	250	800
Hidal	75	375	800
Snayyah	75	500	800
Haytoura	125	750	1,000
Bteddine Loukech	150	750	750
Roum	600	4,200	1,000
Azour	150	750	1,000
Homsieh	100	600	1,000
Wadi Jezzine	100	600	750
Aarayeh	100	600	700
Kfarhouna	600	3,500	1,200
20 villages	5,835	34,900	

4. RIHAN CENTER (10 TONS/DAY)

Implementation of the Rihan solid waste management facility was intended for Rihan village. However, complaints from the Rihan community altered the initial proposed plans. The mayor of Kfarhouna village proposed to find a piece of land for the project, but this also failed due to community complaints. Aramta’s mayor, in turn, contacted the YMCA to propose that he would try to find the necessary land, but found that he was also unable to find a site. The YMCA attempted to find a solution with the local communities, but municipal elections dominated local agendas. Accordingly, all negotiations have been postponed until the end of June 2004.

Village Served	Number of Households	Number of Individuals	Altitude (m)
ElRihane	1,000	7,000	1,350
Mlikh	200	1,000	900
Soujoud	400	2,400	1,000
Aychiyyeh	150	750	600
Srire	90	550	900
Kotraneh	40	200	1,000
Aaramta	700	5,000	1,200
Lwayzeh	300	2,400	650
El Jarmak	100	600	550
9 Villages	2,580	16,900	

In the mean time the YMCA team is negotiating with the mayors and mokhtars of the local villages of Jezzine and Rihan Areas to find other sites that are far away from any community to avoid any local complaints against the project. A location called Toura Mountain has been provisionally located as possibly the best site for such a project, as it is located a distance from any community, at a midpoint between Jezzine and Rihan areas, and is large enough to accommodate the solid waste management process for both areas. The YMCA team held a meeting with the municipal councils and involved more local environmental persons from the communities to exchange opinions and experiences in order to find the best location for this project with the minimum side effects or disadvantages to the community.

Waste Water Networks and Treatment Centers

All centers will be designed taking into strict consideration the fact that all of these villages are summer resorts. This means that the number of residents increases during summer months and thus the wastewater flow increases proportionally.

A. SOUTH LEBANON CENTERS (5 CENTERS)

1) Wadi Jezzine Center:

VILLAGE NAME	WADI JEZZINE
Range of population served (capita)	600-1200
Forecast population served (capita)	1500
Altitude (m above sea level)	750
Wastewater treatment plant (m ³)	150
New sewer network length (m)	2000

The project consists of installing 2000 meters of sewer network and building a treatment plant of 150 m³/day capacity. The Mayor prepared and submitted all the topographical plans and maps for the sewer network, manholes, and the land for the treatment plant. Following this, the contract agreement between the YMCA and the municipality has been signed and the sewer network has been completed (2000m). A contract agreement between the contractor of the treatment plant and YMCA was signed. The Environmental Assessment was completed and civil works (excavations) initiated.



2) Jezzine Center:

VILLAGE NAME	JEZZINE
Range of population served (capita)	6000-8000
Forecast population served (capita)	12000
Altitude (m above sea level)	950
Wastewater treatment plant (m ³)	1000
New sewer network length (m)	0

The project consists of building a treatment plant of 1000 m³/day capacity. The Mayor started negotiations with the Council of the South to raise funds in support of the project. The municipal elections postponed the negotiations until the end of June 2004.

3) Snayyah Center:

VILLAGE NAME	SNAYYAH
Range of population served (capita)	400-500
Forecast population served (capita)	600
Altitude (m above sea level)	800
Wastewater treatment plant (m ³)	60
New sewer network length (m)	2040

The project consists of installing 2040 meters of sewer network and building a treatment plant of 60 m³/day capacity. The Mayor prepared and submitted all the topographical plans and maps for the sewer network, manholes, and the land for the treatment plant. The contract agreement between the YMCA and the municipality has been signed. The sewer network has been completed (2040m). A contractual agreement between the contractor of the treatment plant and the YMCA was signed. The Environmental Assessment was completed and civil works (excavations) initiated.



4) Aychiyyeh Center :

VILLAGE NAME	AYCHIYYEH
Range of population served (capita)	700-1250
Forecast population served (capita)	1500
Altitude (m above sea level)	750
Wastewater treatment plant (m ³)	150
New sewer network length (m)	3588

The project consists of installing 3588 meters of sewer network and building a treatment plant of 150 m³/day capacity. The Mayor prepared and submitted all the topographical plans and maps for the sewer network, manholes, and the land for the treatment plant. The contractual agreement between the YMCA and the municipality was signed. The access road to the treatment plant site was excavated. The work in the sewer network has recently been started (125m were executed). A contractual agreement between the contractor of the treatment plant and the YMCA was signed. The Environmental Assessment is currently in the pipeline.



5) Al Ghobbatieh Center:

VILLAGE NAME	MACHMOUCHEH	BENWATI	AL GHOBATTIEH	TOTAL
Range of population served (capita)	300-400	1750-1800	200-250	2300- 2450
Forecast population served (capita)	500	2000	300	2800
Altitude (m above sea level)	950	800	700	
Wastewater treatment plant (m ³)	0	0	250	250
New sewer network length (m)	Executed	Executed	5500	5500

The project consists of installing 5500 meters of sewer network and building a treatment plant of 250 m³/day capacity. Machmoucheh has a sewer network which was previously executed and discharged in Benawati village. Benwati also has a sewer network which was previously executed that discharges in the fields without any treatment. Al Gobbattieh is part of Benwati village and has the lowest elevation site that is the best fit for the location of the treatment plant for the three villages. These villages will be crowded during the summer season due to their attractive climate at that period. The Mayor of Benwati prepared and submitted all the topographical plans and maps for the sewer network, manholes, and the land for the treatment plant. YMCA engineers studied the plans, made a detailed report, and determined the project costs. All preliminary meetings with the three villages have been completed. The Mayor of Benwati started negotiations with the Council of the South to raise funds in support of this project. The municipal elections postponed the negotiations until the end of June 2004.

B. BEKKA CENTERS (4 CENTERS)

1) Rachaya Center:

VILLAGE NAME	RACHAYA
Range of population served (capita)	4000-6000
Forecast population served (capita)	7000
Altitude (m above sea level)	1250
Wastewater treatment plant (m ³)	700
New sewer network length (m)	8000

The project consists of installing 8000 meters of sewer network and building a treatment plant of 700 m³/day capacity. The Mayor submitted the topographical plans and maps for the sewers network, manholes, and the land for the treatment plant. YMCA engineers have studied the plans, made a detailed report, and determined the project costs. The contractual agreement between the YMCA and the municipality will be signed with the new municipal council in June.

2) Alakaba center:

VILLAGE NAME	ALAKABA
Range of population served (capita)	1800-2100
Forecast population served (capita)	2500
Altitude (m above sea level)	850
Wastewater treatment plant (m ³)	250
New sewer network length (m)	2000

The project consists of installing 2000 meters of sewer network and building a treatment plant of 250 m³/day capacity. All preliminary meetings with the local community were done. The site of the treatment plant was chosen. The Mayor submitted the topographical plans and maps for the sewers network, manholes, and the land for the treatment plant. YMCA engineers have studied the plans, made a detailed report, and determined the project costs. The contractual agreement between the YMCA and the municipality will be signed after the election of the new municipal council in June.

3) **Bakka Center:**

VILLAGE NAME	BAKKA
Range of population served (capita)	600-800
Forecast population served (capita)	1000
Altitude (m above sea level)	1200
Wastewater treatment plant (m ³)	100
New sewer network length (m)	4370

The project consists of installing 4370 meters of sewer network and building a treatment plant of 100 m³/day capacity. The Mayor prepared and submitted all the topographical plans and maps for the sewers network, manholes, and the land for the treatment plant. All is set to proceed with the implementation. The contractual agreement between the YMCA and the municipality has been signed. A total of 2200 meters of sewer network has been executed. A contractual agreement between the contractor of the treatment plant and the YMCA was signed. The Environmental Assessment is in the pipeline and civil works (excavations) initiated.



4) **Ain Arab center:**

VILLAGE NAME	AIN ARAB
Range of population served (capita)	600-800
Forecast population served (capita)	1000
Altitude (m above sea level)	1250
Wastewater treatment plant (m ³)	100
New sewer network length (m)	2000

The project consists of installing 2000 meters of sewer network and building a treatment plant of 100 m³/day capacity. The Aayha center was substituted by the Ain Arab center after the approval of USAID, since the Aayha mayor stated that he could not afford the local contribution for the project. All preliminary meetings with the local community have been completed. The site of the treatment plant has been selected. The Mayor submitted the topographical plans and maps for the sewers network, manholes, and the land for the treatment plant. YMCA engineers have studied the plans, made a detailed report, and determined the project costs. The contractual agreement between the YMCA and the municipality has recently been signed. Civil works will not start before the municipal election of May 9, 2004.

COMPONENT 3

Engaging in Dialogue and Influencing Policy on Environmental Management

The YMCA will dedicate significant efforts to engage in dialogue and influence policies with key stakeholders that include the Government of Lebanon, Parliament, municipalities, local NGOs and communities.

The YMCA will design and implement an ambitious and high-visibility policy dialogue to influence national policies on waste management away from current centralized solutions and approaches towards the adoption of appropriate and cost effective technologies that can be locally adapted.

Through a combination of white papers, seminars, and guided tours to selected waste management facilities, the YMCA will engage in high-level policy dialogue that will target a large number of politicians, including members of Parliament, Directors General, senior government staff and the media. The YMCA anticipates that as a result of this sustained high-level awareness campaign and policy dialogue, the GoL will eventually adopt the paradigm shift that has started to take root in different government circles and municipalities – away from centralized waste treatment technologies and approaches towards decentralized, appropriate treatment technologies and approaches for rural areas. In particular, the YMCA anticipates that the GoL will promulgate solid waste and wastewater decrees that build on the lessons-learned and policy recommendations of the YMCA team.



Meeting of Volunteers:

A general meeting with the team of volunteer trainers was held on March 29, 2004. A total of 12 volunteers participated and discussed issues regarding the training sessions for which they will be responsible. The training sessions include the following basic content:

- Updating training schedules.
- Brainstorming on training topics and methodologies for student groups (such as games, sessions, etc.) and local community and housewife groups.
- Refreshing their understanding of the information and materials that will be shared with the target population.
- Deciding how to divide students or the general community into clusters in order to be able to disseminate knowledge in a wider and deeper scope.
- Deciding what other types of pre- and post-training meetings and preparations are needed. Other meetings were held as agreed.

Materials for Training:

- The pamphlet was finalized and printed. It will be distributed to the community when the training sessions start.
- A permit was obtained from the Ministry of Health in order for the trainers to be able to enter schools, particularly public schools. The YMCA is still waiting for approval from the Ministry of Education.
- Other materials that might be needed in the training, such as materials for the games, lectures, etc., are being prepared by the training team.



Field Trips to Rachaya Region:

Two field trips were conducted to the Rachaya Region on April 22, 2004 and April 28, 2004 to assess the schools in the region that will be included in the training program. A total of 18 schools were visited and most of them were very cooperative regarding the training. The field trips included the gathering and compilation of the following information in order to complete the assessment of the schools:

- The number of students enrolled.
- The level of education provided.
- Their interior design.
- The space they can provide.
- The materials provided that can be used by trainers.
- The time during which training sessions can be held.



SUSTAINABLE ENVIRONMENTAL PRACTICES AND POLICIES (SEPP)



Kfarmeshki School



Kfarmeshki Outdoor Playground



Majdel Balhiss School



Majdel Balhiss Playground



Wadi El Azhar School



Wadi El Azhar Kindergarten Room



Lebanese Canadian Modern School



Lebanese Canadian Modern School



The library in Aiha School



Aiha Kindergarten Room



Ain Atta School



Ain Atta Kindergarten Room