
ENVIRONMENT
ACADEMY

WE ARE A COMMUNITY BORN MOVEMENT

Using science, media, and deep collaboration
to make transformation happen

Teams of community members led all of the
achievements made, science conducted, and
actions taken in the Environment Academy (EA).
Experts only backed them up.

Our Reason

We live in the most worrying and consequential times in human history. This is not an exaggeration.

Environmental breakdown is threatening the basis of civilized society. Efforts by government, industry, development aid, and mainstream academia are not enough. All are too embedded in the models that got us into this mess.

We created EA as a pleading response for an honest alternative. It's time to rethink who creates solutions, how science and knowledge is used, and how everyone is engaged.

We need transformation. And we believe that visionary residents in hard hit communities have what it takes to make it happen.

Our Vision

We empower communities most affected by environmental breakdown to choose their own goals, strategies, and projects for driving systematic solutions. We believe transformational change is possible and it starts locally with our air, water, and life.

Our Mission

We deeply engage communities most affected by environmental breakdown with diverse experts, diaspora, authorities, and the general public in a solution making process. We use collaborative science, mentorship, constant interaction, and widely popular media to back groups of community members in taking on obstructions to a healthy, productive, and sustainable life for all.

AUB American University of Beirut

Nature Conservation Center | NCC
مركز حماية الطبيعة

صار الوقت
IT'S ABOUT TIME

IMPACT LEBANON

29
short-term green jobs created

60
community run meetings with municipalties and
- 12 with heads of municipal unions
- 6 with heads of qazas
- 4 with members of parliament

150
households surveyed

150
community teams applied

80
community members trained in solution co-creation

15
appearances on national television

200
days of water quality changes monitored

3
water network maps unlocked and digitized

10
expert mentors shared their knowledge for 1.5 years in over 200 sessions

175
pages of water data and analysis presented to authorities

0
community teams dropped out despite unbelievable challenges in 2020-2021

3
municipal waste characterizations completed

3
community waste generation assessments completed

20
members of the diaspora supporting EA for over 1 year with their expertise

2
land rehabilitation assessments conducted

Over **500K**
views on EA videos

Over **3500**
followers, 71% of which are women

55
water quality tests completed and communicated

3
appearances on international media


5
awareness campaigns conducted with over 1200 people
1000
public school students improved their environmental citizenship and received reusable water bottles and reusable lunch boxes
1
first of its kind social contract instituted between the community, municipality, and agricultural cooperative
350
native wild fruit trees planted with harvest returns going to communities
3
community urban green public spaces designed
2
community green spaces developed and 1 village trail created
4
evidence based safe water supply solutions created by communities and proposed to authorities
150
low-cost locally built composters operating at households
12,000m²
of land ruined by waste dumping and wildfires restored
2
solid waste open dumps cleaned and closed
140
waste sorting bins distributed
US$ 100'000
from crowdfunding
1
community run and funded complete solid waste management operation integrated
US$ 28'000
from grants
3
agreements made with solid waste facility operators for recyclables and rejects
4
safe water coolers and dispensers secured for 2 public schools
30
corroded water taps replaced in public school bathrooms
US$ 30'000
from public and private sector contributions
US$ 100'000
from AUB-NCC

FANAR

Local Issue

More than 12 tons/day of unsorted waste is dumped near residential buildings or goes to a landfill

The Municipality: More than 5 meetings were held where the project was presented and the implementation strategy agreed upon

Why the team took action:

After watching Dr. Najat Saliba on “Sar el Waet” inviting people across Lebanon to participate in EA, I immediately called some of my friends and asked them if they are ready to team up with me to make a change in our community. They accepted the challenge and the journey began.

What EA provided to the team:

EA excited us to organize and connected us with expert mentors from Lebanon and across the world. EA gave us the tools, means, and backing to develop our local solution and achieve it.

“We’ve been waiting for such an initiative for years. Thank you for giving us hope in real change. People like you deserve to become the leaders of our country”

- Community member

Implementation

- **Stage 1**
  Study the town to find the best pilot neighborhood
- **Stage 2**
  Understand the population's level of knowledge on sorting at the source
- **Stage 3**
  Prepare a household campaign to reduce, reuse, and sort waste at the source
- **Stage 4**
  Find a collaborating sorting facility to receive recyclable materials
- **Stage 5**
  Establish a separate collection system for recyclables to gain the confidence of residents in the recycling procedure
- **Stage 6**
  Raise funds with the "Sar el Waet" program
- **Stage 7**
  Refine household campaign materials and purchase sorting bins
- **Stage 8**
  Communicate with heads of building committees that have been selected to improve ownership of the solution
- **Stage 9**
  Provide each head of building committee and household with campaign material and two sorting bins for each building
- **Stage 10**
  Collect and deliver recyclables and constantly follow up with participating households

Neighborhood Pilot

Solution Achieved

- **ENVIRONMENTAL ACADEMY**
  Provided 50 bins, 300 flyers, 120 posters, 300 printed charts, pickup signage, and a cell phone
- **MUNICIPALITY**
  Secured a small truck with a driver and two workers to collect recyclables
- **FANAR TEAM**
  - Designed household sorting campaign materials
  - Defined the neighborhood pilot
  - Created and implemented collective actions with heads of building committees

Total Affected by program

20 Buildings

100 Households

400 Residents

1.5 tons total

15 weeks

70 kg per week

Recyclables kept from landfill

Growth plan

Step 1
Expand the community team and number of neighborhoods involved in sorting and recycling

Step 2
Secure sorting bins for involved neighborhoods

Step 3
Provide a truck with a larger carrying capacity for more frequent collection of recyclables

Expansion and coverage of all neighborhoods

« We received many calls from residents in various Fanar neighborhoods, requesting us to collect their recyclables »

Secondary sorting centers that were involved or consulted during project development:

LIVE LOVE RECYCLE · L'Ecomite Vert · aec arcenciel.org engage in development · biclean · CEDAR ENVIRONMENTAL

Local Issue

Water contamination is damaging the community's livelihoods, banana crops, and causing health impacts for the residents in some cases

DAMOUR

Why the team took action:

EA is a one of a kind opportunity for us to tackle a long standing environmental problem in our community with the support of experts from AUB and the diaspora.

Our team of 7 young Damour community members have always been locally active working from our heart to improve our village where we can. But EA gave us the applied science skills, capacity, and confidence to take on a huge and complex environmental problem that previously felt out of reach.

"My family and I were at first hesitant and weren't sure that your team would be able to achieve such an ambitious goal. But when we saw you on the ground surveying households, testing our water, and doing your best to solve the water problem, we changed our mind and became ready to help make this solution a reality in any way possible."

-Community member

Achievements

FIRST
Digitized all material received from the municipality including; water network maps, two years of daily pumping data, chlorination schedules, and engineering specifications for the public water supply

SECOND
Characterized and digitized the hydrogeology of the area and mapped potential sources of contamination

THIRD
Surveyed households across the community on their domestic water situation, physical water quality indicators, and history of any issues faced with domestic water quality

FOURTH
Conducted dozens of water quality tests on source water and household water, thoroughly investigated the state of the public supply well, gathered over 200 days of daily measurements for three different parameters, and analyzed and visualized all resulting data

FIFTH
Synthesized all data, analysis, and visualizations into a comprehensive report, developed a partnership with an engineering firm to inform on potential solutions, and gave the municipality a comprehensive picture of the water quality situation along with multiple evidence based recommendations on best fit treatment and policy solutions to improve local water quality

66
households surveyed on their water quality situation

3
evidence based water treatment solutions developed

100+
pages of data analysis presented to the Municipality

248
days of water quality monitoring

Contributors

EMCO Engineering

Mahmoud Tabsh for Engineering and Trading

Proposed solution

Comprehensively investigate water sources, the water supply network, household water quality, citizen perceptions, and potential sources of contamination to develop the first holistic picture of Damour's water quality situation, inform suitable solutions, and collaborate with authorities to apply the proposed policy and treatment measures

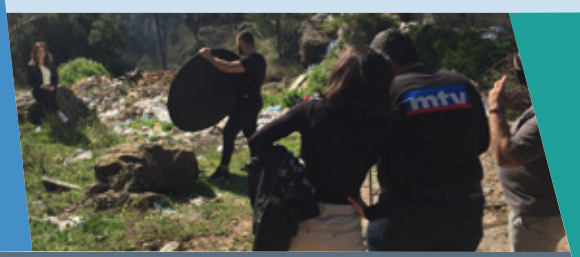
Growth plan

Build the ownership of the Municipality over all the collected data and appropriately communicate the results with the community

Build the consensus of all stakeholders on the best fit solution and finance the installation of the centralized water treatment system to improve community water quality

Local Issue

The remote village of Btebyet has only 50 households and no municipal public authority. The residents were stuck open dumping their solid waste in the most beautiful and ecologically sensitive location; a waterfall along the Beirut river that lies at the entrance of the village



BTEBYET

Why the team took action:

The beauty of Btebyet's valley of pine trees once inspired famous poets but times have changed. A part of the Beirut river that runs through the community has become very contaminated. We were eager to transform our community and do our part in reducing pollution entering the river. EA gave us the chance to do so.

"What happened in the village was a dream for us and you made it come true. We are all going to fight to keep it true. Yes our solution is for a small village but it's high quality. We became an example for other villages in the area and they all wish they had a similar solution running in their communities. Thank God we are so lucky. We promise you that we will remain responsible. We won't let this project fail."

- Community member

Implementation

- **Stage 1**
  Collected data on where households are taking or dumping their waste
- **Stage 2**
  Assessed the quality of waste generated and characterized the entire community's solid waste
- **Stage 3**
  Designed and built community consensus for the solid waste management plan
- **Stage 4**
  Built and distributed composters
- **Stage 5**
  Procured and distributed bins for sorting at the source
- **Stage 6**
  Carefully conducted a behavioral change campaign with all residents
- **Stage 7**
  Developed a continuous community fund for the solid waste operation
- **Stage 8**
  Secured partnerships with a neighboring landfill and recycling facility
- **Stage 8**
  Ensure the composting process remains effective and regularly collect recyclables and rejects from households

Solution Achieved

- Cleaned up and closed down a 6 years old open dump on the banks of the Beirut river
- Developed and successfully implemented a community funded integrated solid waste management operation in a community devoid of a municipality
  - Organic waste: 100 compost bins are effectively being used by households
  - Recyclables: Regularly collected from all households and delivered to recycling facility
  - Rejects: The reaming 20% of waste is sent to a neighboring landfill
- Excited numerous public authorities and residents of the region to conduct integrated solid waste management

Quantity of waste diverted from the open dump every month

7.5 m^3 organic waste

4 m^3 recyclables

3.5 m^3 refuse

1 open dump cleaned and closed

Collaborators

- Members of Parliament
- Mount Lebanon Governor
- Head of the Union of Upper Matn Municipalities

Partners

biclean — Biclean Bickfaya

Btekhnay Municipality

Local Issue

Rapid urbanization comes at the expense of the environment and public space for people to enjoy time outdoors. The only public space in Mazraat Yachouh was previously used as an open solid waste dump and the surrounding forest was severely burnt by the huge wildfires in 2019.

MAZRAAT YACHOUH

Why the team took action:

With more than 25,000 residents and a huge industrial zone, our community doesn't have even one green public space.

After the forested area in the community was severely burned, we decided to rehabilitate the area and secure it as a public green space in an attempt to stop future solid waste open dumping, increase community contact with nature, and reduce the risk of wildfires by improving community vigilance over the forested area.

"We are here to support you with all our expertise to accomplish this environmental project in Mazraat Yachouh. We need this in our village and I'm ready to provide you with any assistance you may require"

- Community member

MAZRAAT YACHOUH

Implementation

Stage 1
Identified community needs along with the perceived impacts of both solid waste open dumping and the wild fires that hit the village in 2019

Stage 2
Used the identified needs and impacts to inform the first plan for the public green space

Stage 3
Co-developed the plan with AUB-NCC experts and the diaspora mentor

Stage 4
Secured a cherished partnership with the Lebanon Reforestation Initiative (LRI)

Stage 5
Through multiple meetings, workshops, and consultations with community members and key stakeholders, developed a comprehensive rehabilitation map and plan with the guidance of LRI

Stage 6
Conducted a large awareness campaign on our plans and upcoming actions that informed and excited the community

Stage 7
Rallied the community and collaborated with LRI to implement the plan to rehabilitate the hard-hit community green space

Solution Achieved

- Removed dozens of severly burnt trees that were a safety hazard to visitors
- Protected all the emerging seedlings with fencing and agreements with community members and shepherds to stay clear of the new growth
- Created a small hiking trail on the site
- Planted native trees that the community desired
- Created multiple short-term green jobs
- Built a fence on the cliff of the community green space as a safety precaution

7'000m²
rehabilitated

25'000
residents benefited

300
native trees planted

10
short term jobs created

Growth plan

Establish a biking trail in the community green space

Introduce new benches and renovate swings to further increase community visitation to the green space

Encourage the muncipality to help maintain the site and stop future open solid waste dumping

Collaborators & partners

EA and the Mazraat Yachouh team greatly thank the USAID-funded Livelihoods in Forestry (LiF) project implemented by the Lebanon Reforestation Initiative (LRI) NGO through the Firewise® program

USAID FROM THE AMERICAN PEOPLE

EBBA
PUBLIC SCHOOL

Local Issue

The solid waste sorting plant was closed in Nabatieh (Al-Kafour) in 2016 and each village began open dumping their solid waste

- No prior exposure to proper waste management, waste reduction, or recycling activities in the community
- Despite its capacity to introduce improved solid waste management to the community, the Ebba Public School faces a lack of funding and an increase in the number of registered students
- Providing quality education is particularly difficult during school closure amidst the COVID-19 pandemic and economic troubles from Lebanon's financial crisis

Why the team took action:

We wanted to grow the impact of the Youth Group in our village and engage our community in creating real action on the social and environmental issues that we live through. EA was the perfect opportunity to do this.

How the team chose to act:

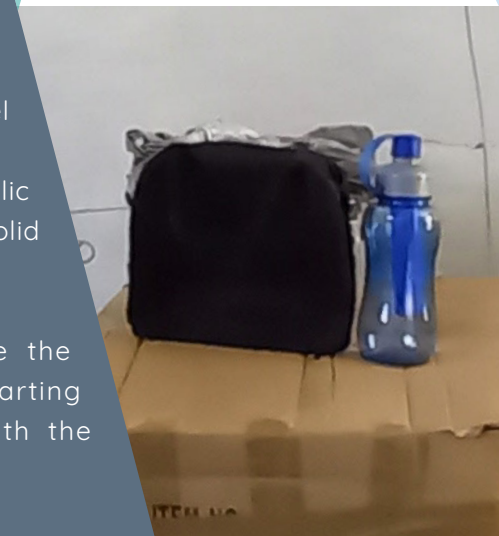
-There was a major lack of knowledge in the community on the impacts of both solid waste dumping and burning and no resources to address the issue at a municipal level

-We decided to work hand in hand with the Ebba Public School to introduce the community to improved solid waste actions

- We realized that educators and youth have the ability to champion enviornmental citizenship starting with solid waste in their school and later with the broader community

"We had the good fortune of being approached by the Ebba community team to do this solid waste project which gives us a huge opportunity to lift the spirits of our students during these difficult times and help create the next generation of environmental citizens for our village and country"

- Ebba Public School Principal



Implementation

Start

Formed a school committee (called the green team) made up of school administrators and teachers to oversee the implementation of activities in the solid waste action and awarness (SAWA) program

Act

- Co-created an action plan to improve solid waste management at schools and homes
- Integrated awareness materials and waste topics into student courses
- Utilized out-of-class activities to spread environmental awareness in an easy and enjoyable way

Watch

Monitor the impact of awareness and solid waste improvements before and after the SAWA program through:

1) Simple exams to assess knowledge and practice
2) Qualitative measurements of waste reduction in homes and schools

Award

Give recognition to the most active students and green team participants and give certificates to all participants in the SAWA program

SAWA
SOLID WASTE AWARENESS ACTION

Partner

World Health Organization
Lebanon

The EA and the Ebba public school greatly thank the WHO for their gracious support

Growth plan

- Developed a monitoring and evaluation program to ensure continuity in solid waste improvements
- Collaborate with the Municipality in taking the lessons from the SAWA program and applying them to the wider community
- Identify a local engineering firm who is able to design and install a kindergarten classroom and playground at the school

Solution Achieved

- Developed a partnership with the World Health Organization (WHO) in Lebanon
- Secured 2 safe water coolers to reduce the consumption of single use plastic bottles
- Replaced 15 corroded water faucets in school bathrooms
- Provided all students with 450 reusable water bottles and 450 reusable lunch boxes to enable reduction in single use plastic consumption
- Actively conducting a digital education and action program to improve solid waste management at homes and schools using engaging games
- Through “Sar el Waet,” secured a donation from a Ebba citizen who is now part of the diaspora to construct a needed kindergarten classroom and playground at the school

Collaborator

Ministry of Education and Higher Education

Local Issue

Due to the civil war, urbanization, and abandonment of land as residents moved to the city, the village lost many of its Carob trees. The local supply of Carob dramatically decreased and so did the heritage that came with it.

BOURJEIN

Why the team took action:

In Lebanon, we live in a world that is constantly changing and becoming more unstable each day. Our challenges are increasingly unpredictable and dire. The year 2020 was a year of crisis with the revolution, economic collapse, COVID-19, and the August 4th explosion. Priorities, assumptions, and expectations shifted. Our team, like all the Lebanese youth, felt overwhelmed, demotivated, and uncertain. But we insisted to make this project a symbol of hope especially for the younger generations who are losing their faith in everything and believe the only solution to continuing their dreams is to flee from Lebanon. Our team embraced the situation and continued with passion simply because we believe our dreams for the country should never die. This passion for our initiative was transmitted to the community and they found in it an opportunity for change and a small reason to have hope once again.

"How wonderful that you are all paying attention to our beloved Carob and the molasses production which creates traditional jobs for our community. You are encouraging the younger generations to never forget their natural heritage at a time when we lost our faith that this rural connection to land and nature will survive the changes and struggles of modern day life."

- Community member

Implementation

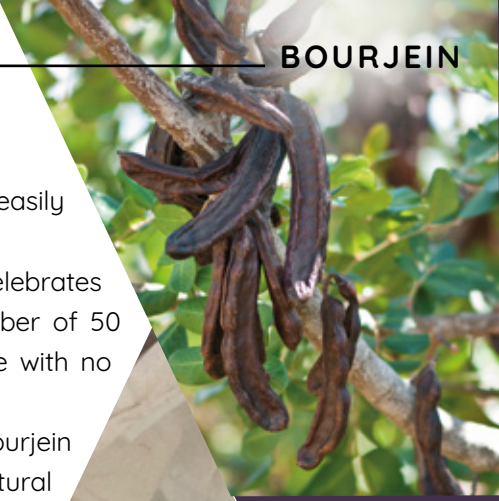
- **Stage 1**
  Understood the problem from young and old community members
- **Stage 2**
  Gained stakeholder approvals and used community knowledge to co-create an action plan
- **Stage 3**
  Assessed and identified suitable land for planting Carob trees
- **Stage 4**
  Established a social contract through consultations and consensus building
- **Stage 5**
  Rehabilitated the land, built retaining walls, and prepared the land for planting
- **Stage 6**
  Procured and planted robust Carob trees
- **Stage 7**
  Provided community access to the site
- **Stage 8**
  Continue maintaining the social contract and the planted site

Problems Identified

- Only the older generation is connected to their natural heritage
- Difficulties finding an ecologically and logistically suitable site
- Challenging community dynamic
- No clear way of ensuring the site would be maintained in the long-term and that returns from the Carob harvest would be used to benefit the community

Solution Achieved

- Secured and restored degraded land at an easily accessible site
- Created a micropark for the community that celebrates their natural heritage by planting a small number of 50 Carob trees in an area surrounded by concrete with no public space
- Developed the first ever social contract in Bourjein between the community, municipality, and agricultural cooperative to ensure the site would be maintained and harvests would go back to the community
- Improved the connection between young people and their natural heritage



Stakeholder approvals

- Numerous one-on-one and group meetings held between the team, the municipality, and the cooperative

- Consulted with the community surrounding the site

- Four iterations of the social contract were created before gaining the approval of all

Growth plan

- Continue following up with all stakeholders to ensure the social contract is maintained

- Monitor the health of the Carob trees and the post harvest procedure

- Use the momentum and enthusiasm that the community had for this initiative to explore other community demanded environmental solutions

Local Issue

Around 1.3-1.4 tons of organic waste from Selaata ends up in Batroun's landfill every week thereby:

1) Burdening the community with a high cost treatment option

2) Causing a lost opportunity to create an organic soil additive for the many small family farms in Selaata

3) Contributing to climate change and long-term environmental damage

SELAATA

"I grew up composting with my mother. We would dig a hole in our yard and put all the organic waste in and cover it with soil and leaves. We stopped after my mother passed away. This initiative reminds me of beloved childhood moments and I am so excited to be doing this important and fruitful process again but now in a more modern way and at a time when it is greatly needed."

- Community member

Why the team took action:

We live in a desperate country where:

1) Our government doesn't take actions toward enhancing our environment

2) Women are often not encouraged and trusted to be problem solvers as a result of patriarchal mentalities

We had the chance to meet Dr. Saliba during the EA launching and she gave us the inspiration to dream, take action, and believe that young women and men working together is "the light in this dark tunnel"

We committed to doing our best to be part of EA and help our community become the change

Implementation

- **Stage 1**
  Collect preliminary data on the local waste operation
- **Stage 2**
  Conduct the first ever waste characterization in Selaata with all households
- **Stage 3**
  Conduct the first ever waste generation assessment in Selaata
- **Stage 4**
  Fully investigate and identify the most suitable composting strategy
- **Stage 5**
  Develop a household composting plan and distribute 50 compost bins to households
- **Stage 6**
  Encourage behavioral change for successful composting in Selaata
- **Stage 7**
  Continually follow up with residents
- **Stage 8**
  Monitor and optimize the composting process

Solution Achieved

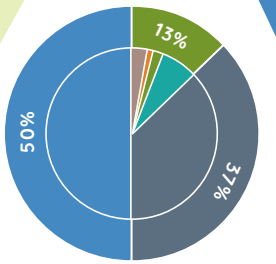
- **EVIDENCE BASED SOLUTION**
  Collected comprehensive data on the municipal solid waste operation
- **COMPOST BIN DISTRIBUTION**
  Built compost bins locally and distributed them to all households
- **SUCCESSFUL BEHAVIORAL CHANGE**
  Encouraged behavioral change with involved households through continuous follow up
- **OPTIMIZATION**
  Diagnosed issues with household composters and the women team effectively innovated low cost solutions

110 households

8 days

176 kg of organic waste produced per day

Results of solid waste characterization



- Organic (food) waste
- Recyclables (plastic, glass, paper and cardboard, metals, e-waste)
- Non-recyclables (rejects)

Two options suggested

OPTION A: COMPOSTING FACILITY

Expand sorting at the source in the community with green bins for organic waste, red bins for recyclables, and black bins for rejects. The organic waste are collected and transported to a composting facility. The composting process takes place inside 12 wood bins. The final compost product is to be managed by the municipality.

OPTION B: HOUSEHOLD COMPOSTING BIN

Expand sorting at the source in the community and provide household compost bins for organic waste, red bins for recyclables, and black bins for rejects. With a proper composting operation over a 2-3 month period, households can use compost to improve their gardens.

FIXING A COMMON COMPOSTING PROBLEM

Fruit flies are regularly found in household composters

Field experiment and diagnosis

The Selaata team measured four parameters; temperature, pH, moisture content, and intensity of flies in two different compost bin setups

Solution

Based on the data and findings obtained by the Selaata team, it was decided that the best solution is:

- No orange or citrus should be placed inside the bins
- Fasten a wire mesh at the top and bottom of the composter's aeration pipes which proved to be an effective adjustment innovated by the team

ACHRAFIEH

Local Issue

Initial issue

We have an abundance of air pollution, but accessible urban green spaces are almost nonexistent in Beirut. Residents near Sassine Square have no place to take a breath surrounded by some greenery.

Issue after the August 4th explosion

Many loved ones were lost and a huge part of Beirut was shattered including Ashrafieh. Help was offered to rebuild houses but few helped in the sustainable recovery of small businesses.

Why the team took action:

We went from trying to create a small community demanded green space to improve the emotional wellbeing of residents to picking up the pieces of our shattered homes and lives after the August 4th explosion.

Seeing our neighborhood suffering, we felt a moral duty to instead take part in the post explosion recovery by helping a small business get back on its feet.

"I'm ready to promote everything you're doing on my social media platforms and I can help by designing any technical part of this much needed micropark"

- Community member

"The collaboration with the Ashrafieh team not only went a long way in helping me reopen, it also made me feel supported by others who know the post explosion pain"

- Owner of Anidea

Implementation

Part 1: Build a Micropark

1) Conducted dozens of surveys with residents of Sassine Square to study their needs and decided to design and build a community demanded micro park

2) Three totally different designs were drafted and the community chose their preferred one

3) After numerous meetings with the Beirut Municipality, approvals to proceed with the micro park were finally granted

4) Started gathering quotations and preparing all the logistics for construction

Part 2: The August 4th Explosion

Suddenly, much of Beirut city and Ashrafieh were blown apart. Residents and friends in the area lost their lives and homes and members of the Ashrafieh team were badly affected. They decided to use the funds they raised to instead support in the post explosion recovery.

Part 3: Project Shift

The Achrafieh team, with the support of Khaddit Beirut and Backbone, scouted the area that was most affected by the explosion, and chose to collaborate with Anidea, a small locally owned resto-pub, to help them reopen and secure the jobs that the business creates.

Reopening Anidea

The owner of the small business let the Ashrafieh team know how they could help him in functioning again.

- Accordion door
- Exterior curtains
- Chairs and tables
- Lighting and electrical works
- Minor paint works
- Glassware

The team supported Anidea with securing all requested work and materials. With their help, the shop has been successfully reopened in full capacity.

1
small locally owned business reopened

3
community demanded microparks designed but not built

Gratitude from the team

The AUB-NCC's professional and emotional support started from day one.

Their continuous efforts and persistence kept us going after everything that we have lived through.

Backbone NGO and the Khaddit Beirut initiative supported us after the August 4th change of duty by providing assistance in matching the needs of a small business with the help we were offering.

BACKBONE
bringing back life

Local Issue

Even though the area is rich in water resources, residents believe the water that reaches their household is contaminated and they are caught spending up to 10% of their household's income on purchasing water

AIN EL KHARROUBE

Why the team took action:

Our community does not have a municipality. We have to take action into our own hands. EA offered us a unique opportunity to conduct quality science and turn our issues and our ideas into real solutions. It inspired in us the kind of thinking that can advance our country.

No matter how straightforward a core idea may be, execution is a long winding road. We knew EA would give us the momentum to follow the road all the way through.

With all the challenges present nowadays, the energy and the will of the youth is what makes change happen. We push each other to seek opportunities and be the solutions in our community. We saw EA as a hub for creating solutions in Lebanon and we dived right in.

"Your project has encouraged us to believe in our potential to bring about change in our communities despite all the struggles we face everyday"

-Community member

Implementation

- Surveyed the community to better understand the water quality situation of households, levels of water purchasing, and the perceptions of residents toward their water quality

- With citizen households, tested for chlorine in the domestic water

-Attained and digitized maps of the domestic water network and the wastewater network

ROUND 1 WATER TESTS

- Testing points were identified at the joints and at the end of each branch in the domestic water network

- 21 samples were taken from households near the determined testing points and analyzed at a collaborating lab

- Compared the water quality results at various points in the network

- Investigated source water quality

- Assessed if there are any leaks in the network pipes

RESULTS OF ROUND 1 WATER TESTS

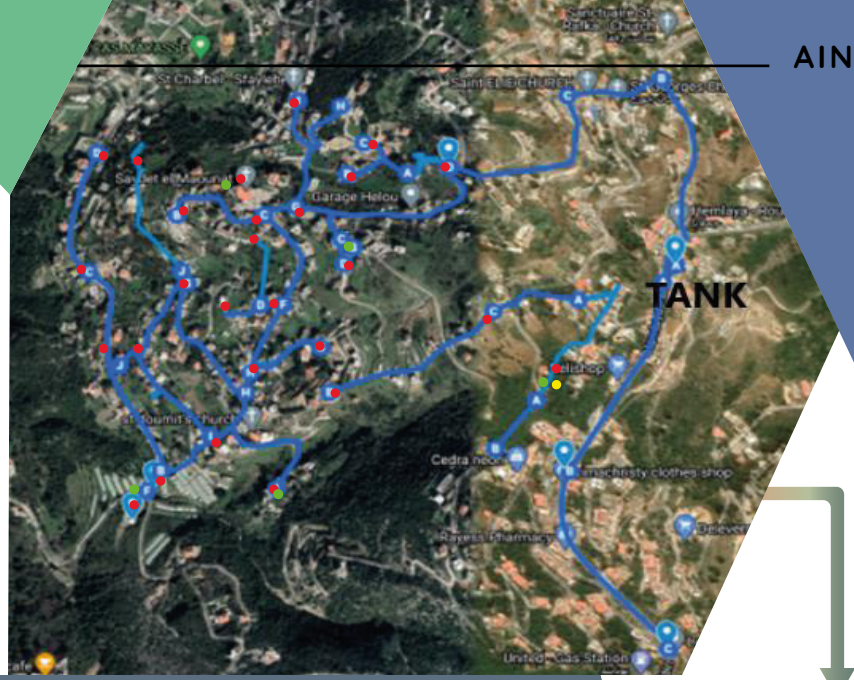
- No chlorine was found in the domestic water supply however no biological contamination was found either

- Other key water quality parameters were found to be within the recommended WHO limits for potable water

- No leakages were found in the domestic water network

- Households across the community receive about the same water quality

- Both surface water sources that feed the primary reservoir deliver safe water quality



AIN EL KHARROUBE

90.2% of Ain El Kharroube residents don't rely on government water supplies for drinking

42 water quality tests conducted at households and source water

84% claim low confidence in water quality

▲ Domestic water network

▲ Environmental water tests

▲ Preliminary test

▲ Round 1 lab tests

Growth Plan

- To capture change over time, another round of water quality tests will be conducted using the same methods with the same households and at the same source water points

- Based off the results, a comprehensive report with the evidence based recommend policy and treatment solutions will be given to the District Governor of Metn and the Beirut Mount Lebanon Water Authority

- Conduct the appropriate awareness campaign with the community aiming to restore their faith in the quality of household water

Collaborators

- Beirut and Mount Lebanon Water Authority
- District Governor of Metn
- Public authority of Ain el Kharroube
- Hemleya Municipality

Local Issue

Amidst the economic crisis and refugee influx, public schools such as Riad el Solh have opened their arms to a tremendous number of new students. With twice the number of students, the school subsequently experienced a surge in single use plastic and was facing diffculties maintaining its environmental citizenship program.

RIAD EL SOLH

PUBLIC SECONDARY MIXED HIGH SCHOOL

Why the team took action:

We will not let the many crises that we are living through in Lebanon keep us from doing our part in raising the next generation of responsible citizens who understand the importance of environmental stewardship.

Major issue behind joining:

- The limitations of digital learning due to the COVID-19 pandemic
- Lack of resources to maintain and expand the environmental citizenship program
- The increase in students from 250 to 500 in a short period of time
- The pressures that the current situation in Lebnaon places on the morale of students

"The most important part of this project is that we are able to take these lessons home and influence our surrounding community. For example, in my home we reduced a lot of our single use plastic and we started buying alternative items that can be reused and last longer."

- Student

Implementation

Before EA

Realizing the importance of environmental knowledge, the Riad el Solh public school has been conducting awareness campaigns through several activities including activating an environmental club, issuing a school environmental magazine, incorporating environmental topics into educational curriculum, and creating an exhibition for students to display scientific environmental projects.

Start

- Formed a school committee (called the green team) made up of school administrators and teachers to oversee the implementation of school wide activities for the solid waste action and awareness (SAWA) program

Act

- Co-created a collective action plan to induce behavioral change and improve solid waste management at schools and homes
- Integrated awareness materials and waste topics into student courses and utilized out-of-class activities to spread environmental awareness in an easy and enjoyable way

Watch

Monitor the changes in awareness and solid waste improvements before and after the SAWA program through:
1) Simple exams to assess knowledge and practice
2) Qualitative measurements of waste reduction in homes and schools

Award

Give recognition to the most active students and green team participants and issue certificates to all participants in the SAWA program

Partner

World Health Organization Lebanon

The EA and the Riad el Solh public school greatly thank the WHO for their gracious support

Growth plan

Deepen the cherished collobration with WHO and the Ministry of Education and Higher Education to become a model for public schools across Lebanon who are interested in raising the next generation of responsible and active citizens who understand the importance of environmental stewardship

Solution Achieved

- Developed a partnership with the World Health Organization in Lebanon
- Secured safe water coolers to reduce the consumption of single use plastic bottles
- Replaced 15 corroded water faucets in the school bathrooms
- Provided all students with reusable water bottles and reusable lunch boxes to enable reduction in single use plastic consumption
- Actively conducting a digital education and action program to improve solid waste management at homes and schools using engaging games

Collaborator

Ministry of Education and Higher Education

1,100 reusable water bottles and lunch boxes

1 model environmental citizenship school program

550 students

2 safe water coolers


THANK
YOU

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