Global Shelter Cluster
ShelterCluster.org
Coordinating Humanitarian Shelter

Greening the Shelter Solutions Learning Document: Guidance for Wider Impact

Gazan workers adjust rebar from damaged housing units for reuse in casting secondary concrete items.

These analyses were undertaken before the escalation of conflict in Gaza in October 2023.

September 2023

Humanitarian Aid and Civil Protection
UNHCR The UN Refugee Agency
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CRS faith. action. results. CATHOLIC RELIEF SERVICES

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Introduction

Catholic Relief Services (CRS) Gaza supports households living in substandard or conflict-affected homes across the Gaza Strip with shelter rehabilitation support and non-food item (NFI) assistance. CRS projects use a participatory shelter rehabilitation planning process, during which all members of the household meet with a trained engineer and social worker to make shared decisions about their needs and priorities for the rehabilitation. Through the Greening the Shelter Pilot funded by the United Nations High Commissioner for Refugees (UNHCR) and the European Civil Protection and Humanitarian Aid Operations (ECHO), CRS and partner engineers focused on 1) minimizing the negative environmental impacts of the rehabilitation projects, and 2) supporting families in integrating environmentally friendly technologies in their shelter rehabilitation. The Gaza-specific *Environmental Management Plan* for shelter programming documents the approaches and tools that CRS used in this pilot project.

Under the "Greening the Gaza Shelter Response" pilot project, CRS and its partners reviewed project approaches and learned from strengthened environmental approaches within the second shelter cohort of the ongoing "Resilient Families: Multi-Sectoral Humanitarian Response" project, a $2.4-million project funded by Global Affairs Canada and implemented in partnership with Development and Peace. Participating households worked with engineers and social workers to identify both environmental risks and green solutions appropriate to their needs and living conditions. CRS invited potential participants to submit applications outlining their greening ideas, and CRS supported participants with technical advice and monitoring throughout the implementation period. Successful applications included the reuse of construction materials, the use of recycled materials, and the installation of rainwater harvesting systems.

Through this pilot project, CRS contributed to the following indicators:

- The number of local shelter response modalities for which options for reducing, reusing and recycling have been developed
- The number of country-level clusters supported in identifying and piloting new shelter solutions and more environmentally friendly approaches.

In this document, CRS will present the strategies and best practices learned from the Greening the Shelter Pilot. The objective of this document is to contribute to mitigating the environmental and climate impacts of shelter responses and to encourage shelter actors to more widely use the strategies resulting from the pilot in Gaza. CRS also hopes to leverage the insights from this document for future projects and collaborations with other actors and the Shelter Cluster.

1. Context: Environmental Challenges in Gaza

Gaza is one of the most densely populated areas in the world, with 2.11 million Palestinians living in an area of 365 square kilometers and a population density of 5,800 per square kilometer. As a result of this population density as well as the ongoing blockade, the poor economic situation and the effects of climate change, Gaza faces numerous environmental challenges and problems that negatively affect the health and well-being of households and limit their ability to maintain safe, dignified homes.

A very crowded and densely populated area within Gaza, with very limited green space.

The environmental challenges in Gaza include:

1.1. Water-related risks

- Scarcity of water
- Water pollution
- Saltwater intrusion and land erosion due to sea level rise
- Contamination of aquifers.

Flooding at Wadi Gaza during the winter season.

1.2. Extreme weather and natural disasters

- Harsh weather conditions, including winter storms and flooding
- Hot weather and its effect on agriculture and crops
- Increased rainfall, leading to drowning and damage to crops
- Coastal flooding and displacement due to storm surges.

1.3. Pollution and degradation

- Air pollution
- Accumulation and self-ignition of solid waste
- Land degradation, including overgrazing and deforestation
- Coastal degradation from pollution and overfishing.

A dumping site in Gaza with mixed solid waste and air pollution from exhaust fumes resulting from burning the waste.

1.4. Effects of climate change

- Rising temperatures
- Changing rainfall patterns
- Rising sea levels
- Reduced fish catch and the resulting effect on fishermen's livelihoods.

Other environmental impacts that have a negative effect on the health and well-being of Gazans include:

- Limited green space and land availability
- Houses with improper ventilation and lack of sunlight
- The high cost of construction materials
- Incomplete access to sewage systems and the use of cesspits
- A lack of public awareness around greening approaches.

2. Project Response: Greening the Shelter Pilot

CRS Gaza and Life and Hope Association (LHA) implemented the pilot project with close coordination with the National Shelter Cluster. The pilot project integrated environmental solutions to shelter repairs to damaged and substandard housing units.

A CRS field officer presents the details of the project to potential project participants during a face-to-face joint orientation session.

CRS used a participatory approach for this greening pilot, as it does in its overall shelter programming. Recognizing that not all participants would have the same base level of knowledge about the environment and potential greening approaches, CRS and LHA conducted two in-person orientations for a total of 228 households. In these orientations, CRS and LHA introduced the project, presented on the state of the environment in Gaza and outlined potential green solutions. To prepare for the orientations, CRS and LHA conducted a review of private sector companies, NGOs and consultants in Gaza that are working on green solutions, including solutions focused on reducing, reusing and recycling shelter materials.

Key messages shared in the orientations highlighted the importance of:

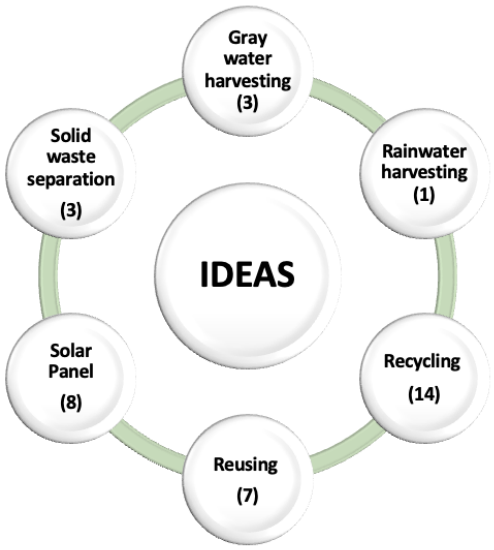
- Improving the construction management process, improving construction site cleanliness and controlling dust to reduce waste
- Encouraging households to reuse and recycle salvaged materials, including blocks and tiles
- Encouraging households to reuse steel reinforcement bars for secondary structures, ground slab and lintels.

In addition to sharing the above key messages, CRS and LHA guided participants on the proposal process and taught them how to identify their environmental and housing needs. CRS and LHA provided technical support to the interested families, helping them to complete their applications and submit their ideas.

CRS received a total of 104 proposals, including some promising and creative ideas focusing on the following topics:

- Gray water harvesting
- Solid waste separation
- Recycling
- Rainwater harvesting
- Solar panel use
- Material reuse.

The CRS team and a local environmental consultant evaluated the proposals on criteria including creativity, feasibility and cost. The team then selected 36 proposals to be part of the pilot. These proposals included gray water management, solid waste management, rainwater harvesting, recycling, reusing construction materials, using solar energy and urban gardening. The 36 households selected through the participatory application process completed their shelter rehabilitation projects, including their green shelter ideas, with financial and technical support from CRS. The project team, including CRS and the local partner organization, provided monitoring support and technical inputs as needed.



In parallel with the implementation of the pilot project, CRS engaged with the National Shelter Cluster through a survey. The survey asked shelter actors about the most pressing environmental needs and most promising solutions for environmental challenges in Gaza. The survey resulted in an updated list of constraints for greening the shelter, including political instability and conflict, limited resources (financial and human), limited local capacity, limited infrastructure, lack of capacity of local authorities and decision-makers in Gaza, and lack of community awareness regarding green solutions. Refer to Annex (1) for the complete survey results. To help shelter actors better understand the opportunities and challenges related to greening the shelter, CRS coordinated with the National Shelter Cluster and disseminated the survey results to all shelter actors.

CRS conducted two learning events with partners and local shelter actors. A total of 31 people participated in these learning events. During these events, CRS shared findings from the implementation of the pilot and facilitated a discussion on opportunities and challenges related to greening the shelter. As a result of these meetings, CRS and the other shelter actors agreed to establish an Environmental Working Group as a subgroup of the Shelter Cluster.

Additionally, The CRS team presented at the Middle East and North Africa (MENA) Housing Forum in Cario in November 2022 and at the MENA Shelter Forum in Amman in February 2023.

The presentations focused on how CRS leverages its current participatory shelter approach to encourage more positive environmental outcomes.

3. Successes and Best Practices

3.1. Engaging Shelter Cluster Actors Effectively

- **Engaging Stakeholders:** CRS actively engaged with the Shelter Cluster coordinator in Gaza from the project's inception, fostering collaboration through consultation meetings with the CRS project team and technical advisors.
- **Shelter Cluster Input:** Shelter Cluster actors actively participated by providing valuable input through a circulated survey aimed at identifying environmental challenges and opportunities.
- **Knowledge Sharing:** To ensure transparency and knowledge sharing, CRS organized a meeting to disseminate survey results, present the actions of CRS and share recommendations and lessons learned.

3.2. Using Participatory Design and Application

- **Community Collaboration:** CRS and partner project teams worked closely alongside the targeted community, providing comprehensive guidance on aspects of the project.
- **Inspiring Creativity:** The teams shared examples of greening solutions and encouraged community members to think creatively, tailoring solutions to their specific needs.
- **Innovative Applications:** These participatory efforts resulted in a diverse range of innovative ideas custom-tailored to meet the unique needs of each applicant.

3.3. Implementing Cost-Effective Greening Solutions

- **Material Reuse and Recycling:** The project adopted eco-friendly practices, emphasizing the reuse and recycling of materials. This strategy significantly lowered the overall cost of greening solutions.
- **Technical Support:** Project field staff provided technical support to participants, assisting them in creating cost-effective project proposals and budgets.

3.4. Generating Income Through Greening Initiatives

- **Diversified Income Streams:** Greening efforts extended beyond environmental benefits and generated income for some participants. Examples of income generation through greening initiatives include:
    - **Rainwater Harvesting:** Growing vegetables using rainwater harvesting reduced water expenses, and participants generated income from vegetable sales.
    - **Solar Systems:** The use of solar systems decreased electricity bills, and participants gained the potential to sell excess energy.
    - **Waste Management:** Participants profited from the separation and sale of solid waste and plastics.

These successes and best practices not only promote environmental sustainability but also empower communities by fostering collaboration, creativity and economic opportunities.

4. Challenges and Solutions

4.1. Limited Policies and Awareness on Greening Principles

- **Challenge:** Gaza had few existing policies and standards related to greening practices, and there was a lack of community awareness about these principles.
- **Solution:** CRS recognized this challenge and embarked on a mission to raise awareness of greening principles among communities. CRS conducted awareness campaigns to educate the local population about the benefits and importance of greening. Additionally, CRS actively engaged with local authorities to advocate for the implementation of greening policies at the community level.

4.2. Introduction of a New Technical Area for CRS Partners

- **Challenge:** Implementing greening solutions was a new technical area for CRS partners, making it challenging to effectively communicate project objectives to participants.
- **Solution:** CRS invested in preparing its partner team by providing a clear orientation about the project, its goals and its key messages. Technical advisors and local consultants worked closely with the partner team to ensure the team had the necessary expertise to effectively communicate with and support the community.

4.3. Challenges with Low Education Levels of Some Participants

- **Challenge:** Some participants had low levels of education, making it difficult for them to fully grasp environmental concepts and technicalities.
- **Solution:** CRS and its local partner organized comprehensive orientation sessions, complete with practical examples of greening ideas, to help participants better understand environmental issues and solutions. The team hired local consultants to facilitate these sessions.

4.4. Difficulty in Drafting Proposals and Budgets

- **Challenge:** Participants struggled to draft greening proposals and develop clear budgets, especially due to their limited education.
- **Solution:** The partner field team stepped in to provide hands-on support. The team worked closely with participants, assisting them in clearly describing their ideas and creating accurate bills of quantities and budgets for their proposed greening initiatives.

4.5. Limited Funds for Greening Ideas

- **Challenge:** The available funds for greening ideas were limited, posing a challenge in implementing comprehensive solutions.
- **Solution:** Partner field staff conducted market assessments and collaborated with participants to explore cost-effective and budget-friendly options. They also helped participants develop precise bills of quantities, optimizing the use of available funds.

4.6. Shifting Focus from Other Priorities

- **Challenge:** Participants initially prioritized basic shelter and livelihoods over greening solutions due to their vulnerability and income constraints.
- **Solution:** CRS and its partner teams worked closely with participants to align their thinking with the project's scope. They provided guidance and encouraged creative thinking. As a result, some participants proposed greening ideas that not only benefited the environment but also generated income, such as using rainwater harvesting for vegetable irrigation and selling separated solid waste for recycling.

By addressing these challenges with well-planned solutions, the project was able to overcome obstacles and achieve its greening goals while empowering the community and building awareness about environmental sustainability.

5. Flexibility in Greening Solutions

The initial project proposal outlined just two greening options: solar panels and solar water heaters. However, by adopting a participatory approach and actively involving the project participants (the targeted families), the project benefited from a wealth of creative and innovative ideas beyond these initial options. This experience underscores the importance of flexibility in selecting greening solutions. It is strongly recommended to continue using this participatory approach in similar future interventions. By involving the community and encouraging their active participation, projects can tap into local creativity and innovation, leading to a more diverse and effective range of greening solutions. This approach ensures that projects remain adaptable and responsive to the unique needs and ideas of the community.

6. Recommendations and Next Steps

6.1. Integration with Shelter Rehabilitation Projects

The team should consider incorporating Greening the Shelter solutions into shelter rehabilitation projects. Emphasize the "3Rs" approach (Reduce, Reuse, Recycle) and include greening elements in orientation sessions for project participants.

6.2. Expand Geographic Coverage and Partner Involvement

To widen the impact of the project, CRS should replicate the successful greening project in other geographical areas within the Gaza Strip, involving additional CRS partners to leverage their expertise and resources.

6.3. Engage Private Sectors, Banks and Universities

The team should collaborate with private sector entities, such as banks and universities, to promote environmentally friendly practices and increase awareness of greening initiatives. Private sector involvement can amplify the project's impact and foster a culture of sustainability.

6.4. Establish a Greening Working Group

The team should initiate discussions with the Shelter Cluster to form a dedicated greening working group. This group should include various Shelter Cluster organizations and relevant stakeholders to collectively advance greening efforts and share expertise.

6.5. Seek Ongoing Innovation

Continue to reach out to CRS technical advisors for new and innovative ideas that are applicable within the local context. Their insights can lead to creative and sustainable greening solutions.

6.6. Community Involvement Beyond Households

Extend greening interventions beyond household levels. Engage entire communities in greening initiatives to create a broader and more sustainable impact.

6.7. Establish Minimum Standards

Initiate discussions with the Shelter Cluster to establish minimum standards for greening shelter solutions when implementing shelter rehabilitation projects. These standards can ensure consistent and effective greening practices.

6.8. Share Learning and Knowledge

Share the project's learning document with Shelter Cluster actors through Shelter Cluster meetings to facilitate information sharing and inspire wider adoption of environmentally friendly practices.

6.9. Global Knowledge Sharing

Upload the learning documents, best practices and project experiences to the global Shelter Cluster website. This will enable other interested organizations and entities to access and use the materials, facilitating the replication of successful experiences worldwide.

6.10. Influence Policy and Legal Frameworks

Engage with decision-makers and relevant ministries, such as the Environmental Quality Authority, to advocate clear policies and legal institutional frameworks related to greening. Work collaboratively to develop and enforce laws that support environmental sustainability, as recommended by the Shelter Cluster.

These recommendations and next steps aim to not only expand the impact of greening initiatives but also foster collaboration, knowledge sharing and policy advocacy for a greener and more sustainable future in Gaza.

Conclusion

The "Greening the Shelter Solutions" project in Gaza has showcased the transformative potential of integrating environmentally sustainable practices into shelter rehabilitation. By adopting a participatory approach, the initiative tapped into the creativity and resourcefulness of the local community, leading to a diverse array of innovative greening solutions. These solutions not only addressed environmental challenges but also offered economic opportunities for the participants.

The project's successes underscore the importance of community engagement, flexibility, and collaboration among various stakeholders. Moreover, the challenges encountered and the solutions devised provide valuable insights for future endeavors in similar contexts.

Moving forward, it's imperative to scale up these efforts, expand geographical coverage and foster collaborations with a broader range of partners. By doing so, we can ensure that shelter solutions not only provide immediate relief but also contribute to a sustainable and resilient future for communities in Gaza and beyond.