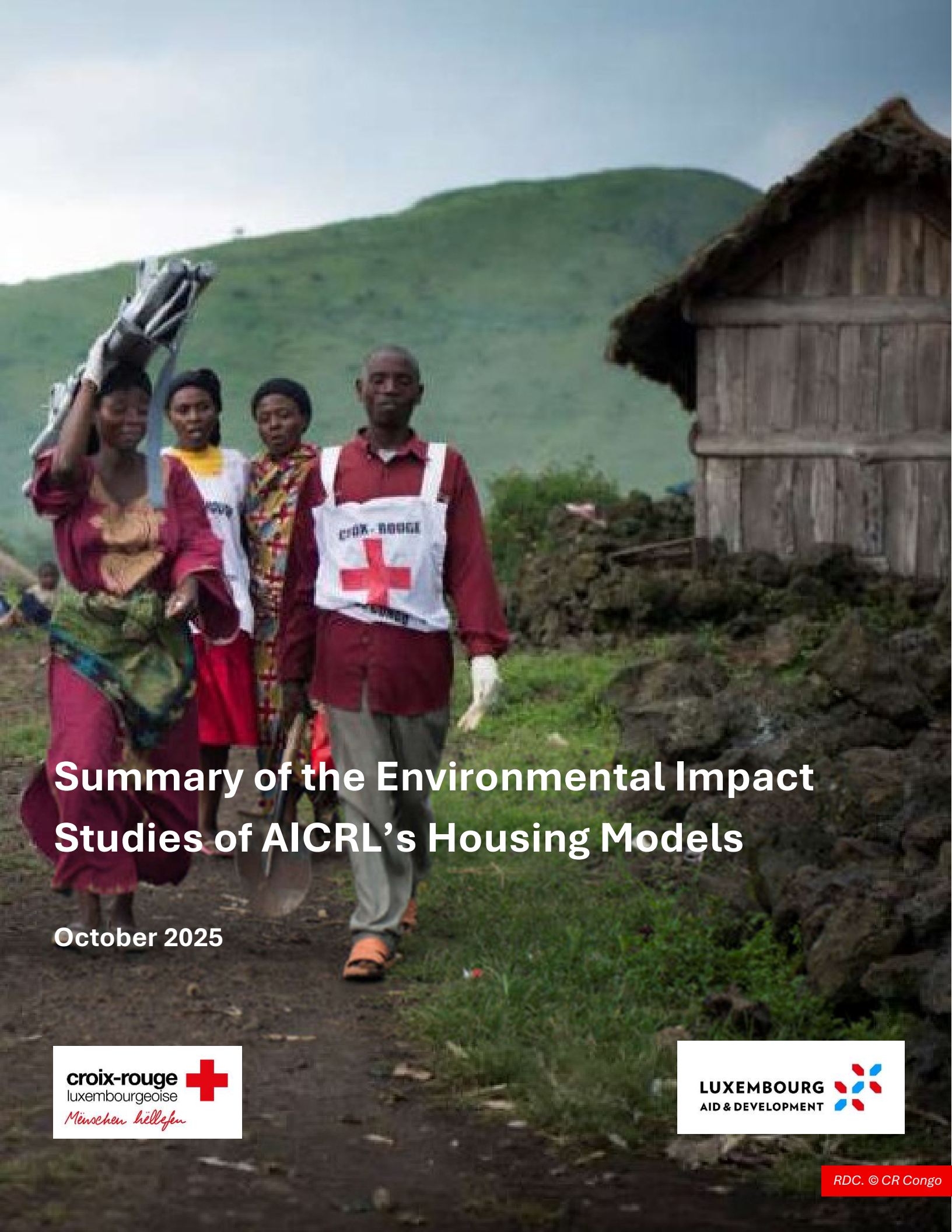

Summary of the Environmental Impact Studies of AICRL's Housing Models

October 2025

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LUXEMBOURG AID & DEVELOPMENT

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Executive Summary

The International Aid of the Luxembourg Red Cross (AICRL), in partnership with its National Society counterparts, has conducted a series of environmental studies on its humanitarian housing solutions. The goal is to comprehensively understand and significantly reduce the ecological footprint of housing interventions in crisis settings. This initiative is driven by a fundamental principle: safeguarding people is inseparable from safeguarding nature.

Why these Studies Matter

Shelter is essential for stability, safety, and dignity for families in crisis. However, its construction often imposes severe environmental pressure, contributing to deforestation, soil degradation, water depletion, greenhouse gas emissions, and creating challenging waste management issues.

This environmental strain weakens ecosystems, jeopardizes local livelihoods, and fuels a cycle of degradation, poverty, and heightened vulnerability to climate and humanitarian shocks. Sustainable humanitarian assistance must decisively break this cycle by protecting both the affected populations and the vital natural resources they rely on.

Methodology and Scope

Studies were conducted across eight countries: Mali, Chad, Burkina Faso, DRC, Burundi, Madagascar, Niger, and upcoming in Benin.

Each assessment employed a simplified "scorecard approach" to examine the full life cycle of both temporary and durable housing models, from material extraction to disposal, against four core criteria:

1. Material consumption,
2. Carbon emissions,
3. Impact on local natural resources,
4. Waste management,

Key Findings

The assessments underscore several crucial principles for sustainable housing:

- **Local and Natural Materials:** These are often the most eco-friendly, provided they are harvested responsibly. Overexploitation must be strictly avoided to prevent ecosystem degradation.
- **Manufactured Materials**: Materials like cement, steel, and plastic carry a significant environmental cost. Their use must be balanced against technical necessity, availability, and affordability.
- **Waste Management:** Must be an integrated part of programme design from the outset to ensure construction activities do not become new sources of pollution.
- **Building for Durability:** Long-term structures are more cost-effective and resource-efficient, avoiding the need for repeated reconstruction and conserving resources.
- **Logistics and Transport:** These are major drivers of the carbon footprint. Essential mitigation measures include prioritising genuinely local materials, optimising transport routes, and implementing green logistics training.
- **The Right Balance:** Effective and relevant humanitarian housing hinges on achieving the right balance between environmental sustainability, social acceptance, and economic viability.

Key Message

A durable shelter is not just a solid structure; it must embody a necessary balance between social needs, economic realities, and environmental responsibility. *"To build a shelter is to protect a life. To build sustainably is to protect the future."*

Main Recommendations

The studies propose practical recommendations, including:

1. Planning & Design

- Integrate an environmental life-cycle analysis from project inception.
- Manage natural resources carefully.
- Carefully manage and reduce reliance on manufactured materials.
- Plan waste management from the programme design phase.

2. Procurement & Construction

- Prioritise local procurement while verifying the true origin of materials.
- Build for long-term durability to reduce costs and future reconstruction cycles.
- Promote sustainable construction practices and train local artisans/communities.

3. Environmental Protection & Coordination

- Collaborate closely with local partners to coordinate efforts.
- Protect and restore ecosystems through local initiatives like reforestation.
- Offset emissions and encourage clean, energy-efficient cooking solutions.

Conclusion

These findings confirm that urgent humanitarian needs can be met without escalating environmental harm. By embedding sustainability at the core of shelter programming, AICRL and its partners are fostering more responsible, resilient, and forward-looking humanitarian action.

Chad. © Luxembourg Red Cross

“To build a shelter is to protect a life. To build sustainably is to protect the future.”

Burundi. © Luxembourg Red Cross

1. The Big Picture: Why Environmental Studies are Essential

DRC. © Luxembourg Red Cross

The Crucial Balance: Shelter and the Environment

While humanitarian shelters are essential for protecting families and enabling them to rebuild their lives after a crisis, their construction can also lead to significant environmental consequences. Unsustainable timber harvesting, soil extraction for traditional bricks, and the intensive use of manufactured materials like cement and metal can result in deforestation, soil erosion, and the depletion of water resources. Furthermore, these activities contribute to increased greenhouse gas emissions and the generation of unmanaged waste within host communities.

Environmental Degradation: A vicious cycle

The degradation of vital natural resources, including forests, soil, and water, directly weakens ecosystems and drastically increases a community's vulnerability to crises. When environmental quality declines, vegetation disappears, leading to soil erosion and declining crop yields. Water becomes scarce, overall

land quality diminishes, livelihoods shrink, and existing imbalances are rapidly intensified by the effects of climate change.

This process creates a vicious cycle: shrinking resources fuel poverty, intensify competition for essential needs, and increase the frequency of crises. Consequently, communities become less resilient to the increasingly intense and unpredictable effects of climate change. These cumulative pressures often result in large-scale displacement, making already vulnerable populations even more susceptible to future shocks.

Addressing these challenges requires humanitarian aid to evolve beyond mere emergency response; it must integrate environmental protection into its core actions to preserve the natural resources that communities rely on and strengthen their long-term resilience to future crises.

In summary: To be truly sustainable and effective, humanitarian aid must protect both people and the nature on which their survival depends.

Understanding the Environmental Footprint

To address the challenges of environmental degradation, the International Aid of the Luxembourg Red Cross (AICRL) and its National Society partners are conducting vital environmental impact studies on both emergency shelters and sustainable housing.

Objective : to measure the environmental footprint of each shelter, from material production to end-of-life, in order to adopt more environmentally friendly solutions.

These studies help identify:

- The most harmful practices (for example, excessive use of cement).
- More sustainable and local alternatives (such as stabilized earth).
- Ways to reduce the overall impact of humanitarian programs.

Scope and Broader Mission

The studies have been carried out in several countries: Mali, Chad, Burkina Faso, the Democratic Republic of Congo (DRC), Burundi, Madagascar and, until recently, Niger. A new study is planned in Benin in 2026.

These studies are central to AICRL's broader mission to uphold the "do no harm" principle, extended to the environment. By developing a deep understanding of how shelters interact with local natural resources and ecosystems, the programme aims to design housing that is inherently safer, more sustainable, and more environmentally friendly, ultimately strengthening community resilience to climate challenges.

Burkina Faso. © Luxembourg Red Cross

2. What Has Been Studied

Each study examined the life cycle of a housing solution. In other words, this includes all stages: how materials are extracted from nature, transported, used in construction, maintained, and eventually reused, recycled, or disposed of when the structure is no longer needed.

By looking at the life cycle, it is possible to identify the stages where environmental impacts are greatest and find ways to reduce waste, emissions, and resource consumption in future shelter projects.

A Life Cycle in Action: The Example of Cement

- The process begins with the extraction of limestone, which uses up land and consumes energy.
- The limestone is then heated in factories for production, which generates carbon emissions.
- The cement is then transported to the construction site, adding further emissions from logistics.
- Finally, when the house is rebuilt or demolished, the cement waste often cannot be reused, creating pollution.

The environmental analysis was guided by four essential criteria:

1. Material Consumption
2. Carbon Emissions
3. Impact on Local Natural Resources
4. Waste Management

Each of these is explained in detail below.

1. Material Consumption

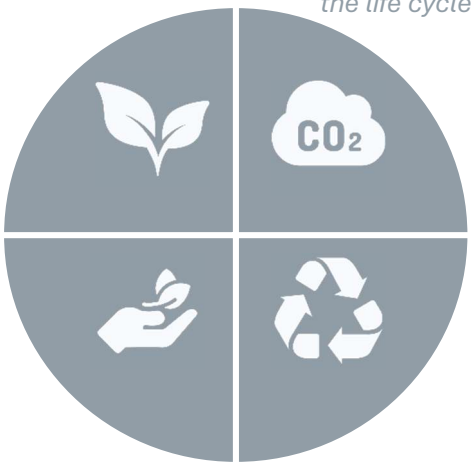
The quantity and type of materials used in each structure. This includes both natural materials (such as earth, sand, and wood) and manufactured materials (like cement, metal, and plastic).

In short: What is the house made of, and in what quantities?

2. Carbon Emission

The total amount of greenhouse gases (GHGs) emitted. Emissions are calculated across the entire life cycle of the structure, including the production,
transport, and disposal of all materials.

In short: How much pollution is generated over the life cycle of the shelter / housing solution?



3. Impact on Local Natural Resources

How the extraction of natural materials affects the surrounding local ecosystems. This includes specific damage such as deforestation, soil erosion, or the degradation of riverbeds.

In short: Are we harming the nature where the communities live?

4. Waste Management

Analyses the potential fate and longevity of materials when the shelter is no longer needed, checking if they can be reused, recycled, or how long they take to decompose.

In short: What happens to the materials at the end of the useful life?

How the Shelters/Houses Were Evaluated

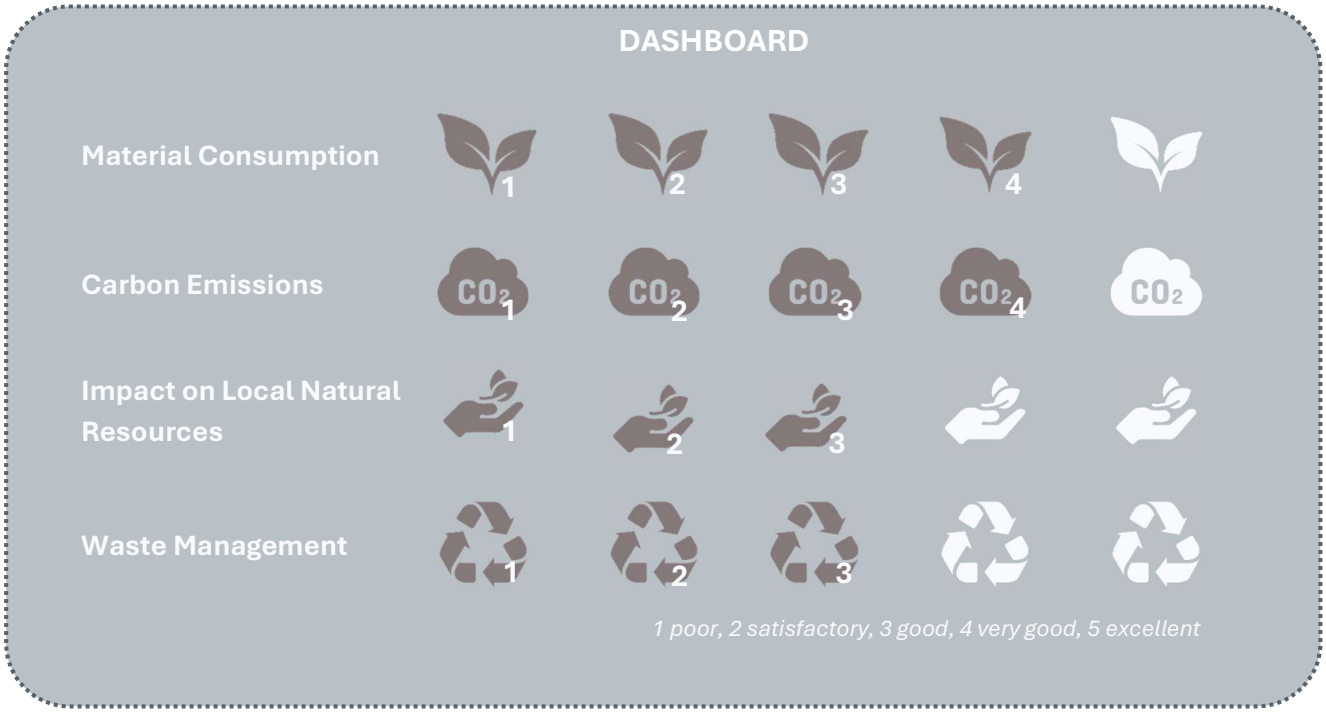
Instead of relying on complex calculations, a simple *Scorecard Approach* system was used to evaluate different housing models.

Each model was rated on a scale from 1 to 5 for each environmental criteria:

- **1 = poor** → high impact → **negative rating** : the model has a significant environmental impact for this criteria.
- **2 = satisfactory** → moderate impact → **intermediate rating** : some aspects are problematic, but others remain acceptable for this criteria.
- **3 = good** → limited impact → **generally positive rating** : the model demonstrates efforts toward sustainability for this criteria.
- **4 = very good** → low impact → **positive rating** : the model is overall environmentally friendly for this criteria.
- **5 = excellent** → very low impact → **highly positive rating** : the model is particularly sustainable and environmentally respectful for this criteria.

This simple and visual method made it easier to identify which materials and design choices were the most harmful, which options offered the best environmental performance, and which mitigation measures could be implemented to reduce negative impacts.

The illustration below shows an example of a scorecard used in the studies.



“Protecting natural resources means strengthening the resilience of the communities that depend on them.”

Chad. © Luxembourg Red Cross

3. Key Takeaways

From all the studies conducted across the various countries, several essential common findings have emerged. These findings are crucial because they help identify the main actions needed to make shelter construction more sustainable and environmentally friendly, while ensuring the solutions remain fully adapted to humanitarian realities.

The illustration below presents the six key takeaways:

Key Point 1

Local, Natural Materials are Sustainable – If Manage Responsibly

Natural and local materials, such as earth, wood, or gravel, have a significantly low environmental footprint. Their production consumes minimal energy and water, emits fewer greenhouse gases, and they are biodegradable at their end-of-life, making them environmentally sound. Using these resources also serves to support local economies, value traditional skills, and reduce pollution associated with long-distance transportation.

However, the extraction of these materials must be carefully managed. Excessive or poorly controlled harvesting can quickly lead to several major environmental problems.

Main Challenges :

- **Soil Erosion and Degradation:** Extracting large quantities of sand or clay, or cutting down too many trees, weakens the land and reduces valuable agricultural areas.
- **Water Pollution:** Uncontrolled material extraction can severely disrupt local water resources and contaminate groundwater supplies.
- **Ecosystem Destruction:** Activities like deforestation and riverbed gravel extraction directly degrade natural habitats, harming sensitive environments such as forests and rivers.

Essential Responsible Practices:

- **Sustainable Resource Management:** Control the quantities being extracted and ensure all degraded sites are actively restored (e.g., filling pits, replanting).
- **Ecosystem Protection:** Preserve soil, water, and forests by avoiding extraction in fragile or protected areas and actively promoting reforestation efforts.
- **Environmental Monitoring:** Ensure regular monitoring is in place to prevent overexploitation and protect local ecosystems before damage occurs.

Key Message 1 : Natural materials are sustainable only when they are harvested responsibly and managed in an environmentally friendly manner.

Key Point 2

Manufactured Materials Have a Higher Environmental Impact – But Are Sometimes Necessary

Industrial materials (such as cement, steel, plastics, etc.) carry a high environmental impact, but they sometimes remain indispensable for technical construction needs, or when no viable natural alternative exists due to availability, performance, cost, or logistics.

Main Challenges:

- **Highly Polluting Production:** Their manufacturing consumes large amounts of energy, emits significant quantities of carbon, and uses many natural resources, such as water.
- **Long-distance Transport:** Shipping these materials over long distances generates substantial additional emissions.
- **Difficult to Recycle:** In humanitarian settings, these materials are rarely recyclable and often end up in landfills, where they can pollute the environment for centuries.

Best Practices for Responsible Use:

- **Use Only When Necessary:** Restrict their use to critical areas.
- **Combine Materials:** Integrate manufactured materials with local, natural materials to reduce the overall environmental footprint.
- **Prioritise Quality:** Choose durable, high-quality materials to extend their lifespan and minimise the need for future replacements.
- **Plan for Disposal:** Plan for waste management from the design stage, actively promoting reuse and recycling whenever possible.

Key Message 2 : Using manufactured materials wisely reduces their environmental impact while still meeting the essential technical requirements of construction.

Key Point 3

Plan Waste Management from the Beginning

In many regions where humanitarian projects operate, existing waste collection and recycling systems are often very limited or entirely non-existent.

This critical lack of infrastructure means that if materials are not chosen and planned carefully, construction waste can easily turn into pollution.

That is why thinking about waste management must begin at the design stage, before the shelter or house is built.

Key Practices to Consider :

- **Manage Waste from the Start:** Plan for the systematic collection, sorting, and treatment of construction waste to reduce pollution and protect public health.
- **Design for Circularity:** Promote the use of materials that are recyclable, modular (easy to take apart and reuse), or biodegradable to effectively extend their lifespan and limit waste generation.
- **Avoid Non-Biodegradable Materials:** Intentionally reduce the use of materials like plastics, cement, and certain metals that cannot be naturally broken down and cause long-term soil and water pollution.

Key Message 3 : Anticipating waste management from the design stage helps reduce pollution and successfully extends the lifespan of construction materials.

Key Point 4

Build to Last

Building durable shelters is inherently sustainable. A shelter designed to last 15 to 20 years instead of just 5 significantly reduces the need for constant material renewal, minimises waste, and lessens the pressure on natural resources and the emissions associated with their production and transport.

However, implementing this approach is often difficult in emergency or displacement contexts due to constraints like temporary land rights, limited initial budgets, and certain political and social restrictions.

Despite these challenges, investing in solid, durable construction remains highly beneficial in the long term. It strengthens community resilience, proves to be more cost-effective over time, and delivers a substantially smaller overall environmental footprint.

Best practices for Durability:

- **Use Strong Materials:** Choose materials that are robust and durable enough to withstand time and harsh weather conditions, preventing premature deterioration and resource loss.
- **Design for Flexibility:** Create flexible, modular, and reusable shelters that can be easily dismantled, relocated, or adapted to meet future community needs.
- **Invest in Training:** Train local builders and communities in proper maintenance and repair techniques to effectively extend the lifespan of the structures.

Building for durability thus creates a vital balance between sustainability, resilience, and resource efficiency, provided this long-term approach is carefully adapted to the specific realities of humanitarian operations.

Key Message 4 : Durable construction today means lower costs, less waste, and a smaller environmental impact tomorrow.

Key Point 5

Rethink Transportation and Logistics

Transportation and logistics represent a significant portion of the environmental footprint in humanitarian projects. Often viewed as simple operational steps, they nonetheless generate substantial greenhouse gas emissions.

Main Challenges :

- **High Carbon Emissions:** The further materials travel, or the more they rely on polluting transport modes (like planes), the greater the environmental impact.
- **Overconsumption of Resources:** Reliance on single-use packaging and inefficient, multiple transport trips increase overall resource consumption.
- **Lack of Traceability:** Poor tracking makes it difficult to assess the true environmental impact of materials and verify the sustainability claims of suppliers.

Best practices for Sustainable Logistics:

- **Reduce Transport Distances:** Prioritise materials that are genuinely produced locally. Note that "buying local" does not always guarantee the materials were "locally made."
- **Choose Efficient Transport:** Select less-polluting transport modes and plan routes efficiently to minimise emissions.
- **Optimise Operations:** Consolidate deliveries and pool resources with partners to maximise efficiency.
- **Improve Procurement and Traceability:** Ensure material traceability and integrate clear social and environmental criteria into all procurement decisions.
- **Limit Waste:** Reduce disposable packaging by actively favouring reusable or readily recyclable options.
- **Training and Community Involvement:** Train internal teams and involve local communities to promote sustainable and circular logistics practices.

Key Message 5 : Managing logistics sustainably is the key to achieving operational efficiency while decisively reducing our environmental footprint.

Key Point 6

Find the Balance

There is no single or perfect solution for building a humanitarian shelter. Every approach has its own advantages and limitations, which depend entirely on the context, available local and economic resources, and the specific needs of the population.

The ultimate goal is to find a functional equilibrium, or balance, between environmental sustainability, social acceptance, and economic viability.

An environmentally friendly house loses its value if it is either too costly or culturally unsuitable for the people who will use it. Similarly, an economical solution is not truly sustainable if it ultimately harms the environment or local resources.

It is therefore essential to assess the overall impact of every material and design choice. The best strategy is to combine materials intelligently: some are chosen to reduce the ecological footprint, while others provide necessary strength, durability, or better cultural integration.

Good practices for Achieving Balance:

- **Assess the Local Context:** Ensure solutions are perfectly adapted to the available resources, local climatic conditions, and community needs.
- **Combine Materials:** Intelligently mix different material types to balance environmental impact, cost, and overall performance.
- **Involve Communities:** Actively include the whole community, including women, men, elders, young people, people with disabilities, and other marginalised or at-risk groups, in the design process to ensure the shelters are accepted, inclusive, and genuinely owned by everyone.
- **Aim for Overall Sustainability:** Reconcile technical efficiency, environmental responsibility, and economic feasibility to achieve true long-term sustainability.

Key Message 6 : Finding the right balance means building shelters/houses that are appropriate, durable, and respectful of people, resources, and the environment alike.

“Building sustainably means balancing immediate needs with the long-term preservation of resources.”

South Kivu, DRC. © Congo RC

4. Closing Message

Humanitarian programmes must often respond to urgent needs with limited budgets, a reality that frequently leaves little room for comprehensive long-term planning.

However, ignoring environmental issues makes recovery less sustainable and can even harm the very communities we seek to protect.

Integrating environmental considerations into humanitarian action is not a luxury, it is an absolute necessity.

By planning ahead, reducing waste, and managing natural resources responsibly, humanitarian shelter projects can successfully achieve a triple goal:

- Meet immediate needs,
- Protect the environment, and
- Promote long-term sustainability.

The International Aid of the Luxembourg Red Cross and its partners continue to lead by example, promoting a more sustainable, ecological, and humane approach to housing that ultimately benefits the countries and communities in which they operate.

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“Humanitarian shelter efforts must strike a balance between the urgency of protecting people and the responsibility to preserve the environment.”

Burundi. © Luxembourg Red Cross

5. Key Recommendations

1 Integrate Environmental Screening from the Start

Why This is Important: It is always easier, cheaper, and more effective to prevent environmental damage during the planning phase than to try and repair it afterwards.

How to Implement It:

- Use simple environmental screening tools (e.g., NEAT+) to identify risks before construction begins.
- Review the results as a team and ensure project plans are adapted based on the findings.

Caution: These tools must not be treated as mere administrative formalities; their purpose is to genuinely improve project design and outcome.

2 Use Natural Resources Wisely

Why This is Important: Over-extracting natural resources like sand, soil, and gravel can severely damage rivers, reduce soil fertility, and ruin agricultural land.

How to Implement It:

- When procuring natural materials, ensure suppliers practise sustainable extraction. The extraction rate must not degrade ecosystems or exceed nature's ability to regenerate.
- Never dig near rivers, existing wells, or productive agricultural areas.
- Reuse existing quarries or pits rather than opening new ones, which saves land.
- Always consult local authorities or community leaders before any extraction takes place.

Caution: Digging too deeply or too close to water sources can easily trigger erosion or flooding.

3 Use Wood Responsibly

Why This is Important: Wood is a valuable natural and renewable material. However, if trees are cut down faster than they can regrow, the practice leads directly to deforestation, loss of wildlife habitat, and severe soil erosion.

How to Implement It:

- Purchase wood only from legal or certified suppliers who practice verifiable sustainable forestry.
- Use wood sourced from fast-growing species or dedicated plantations rather than rare or protected trees.
- Treat wood using natural or low-toxicity products (such as lime, oils, or plant-based solutions) to protect it from termites and significantly extend its lifespan.

Caution: Under no circumstances must trees be cut down in protected forest areas.

4 Reduce the Use of High-Impact Materials

Why This is Important: Manufactured materials like cement, steel, and plastic are strong and useful, but they carry a high environmental impact. Their production consumes large amounts of energy and water, and crucially, their waste can persist and pollute the environment for centuries.

How to Implement It:

- Use cement only where it is indispensable.
- Build walls using adobe bricks when suitable. Use Compressed Earth Blocks (CEBs) only if the construction expertise, necessary machinery, and transport/production costs are feasible.
- Replace plastic elements (such as tubular sections or poles) with bamboo or treated wood if these materials are locally available.
- Instead of discarding plastic tarpaulins, reuse them creatively for flooring, shading, or storage purposes.
- Investigate and use natural roofing materials (such as thatch, palm leaves, or bamboo mats) when culturally and technically appropriate for the local climate.

Caution: Finding viable alternatives can be difficult, particularly during emergencies or when local resources are severely limited. Start by focusing on reducing the quantities used and finding ways to extend the lifespan of the manufactured materials you must use.

5 Manage Waste from the Beginning

Why This is Important: Planning for waste management early in the project lifecycle is crucial. Early planning helps prevent pollution on site and actively promotes the recycling or reuse of materials, reducing the total environmental footprint.

How to Implement It:

- Separate waste on site (soil, wood, metal, plastic).
- Reuse what can be reused, for example soil for landscaping or metal for repairs.
- Collaborate with community recycling groups when they exist.

Caution: Even when building temporary shelters, waste management must be planned from the design stage. While small local initiatives for sorting or recycling can be implemented, burning waste must be strictly avoided as it poses serious harm to both public health and the environment.

6 Purchase Materials Locally Whenever Possible

Why This is Important: Buying locally helps reduce transport-related pollution while supporting local businesses and workers.

How to Implement It:

- Purchase from suppliers located close to the project site who offer reliable and durable materials.
- If materials must be imported, consolidate deliveries into fewer, larger shipments to save fuel and reduce overall transport emissions.
- Always verify the actual origin of materials marketed as "local." Some products sold nearby may, in fact, have been transported long distances or sourced unsustainably.

Caution: The term "local" does not automatically mean sustainable. Materials sold near the site may still have been produced using methods harmful to the environment. It is therefore essential to always check the true origin and production methods of the materials.

7 Promote and Advocate for Sustainable Housing Construction

Why This is Important: Sustainable housing eliminates the need for repeated reconstruction, saving materials, time, and money while significantly lessening pressure on natural resources. Crucially, it provides families with safer, more stable, and dignified homes, ensuring the long-term sustainability of humanitarian interventions.

How to Implement It:

- Build shelters / houses that are repairable, maintainable, or adaptable, rather than simple structures designed for quick replacement.
- Select durable materials, even for temporary shelters, so that components can be easily recovered and reused later.
- Train local builders and households in basic maintenance and repairs to extend the lifespan of the structures.
- Advocate for modular designs that allow for improvements to existing structures rather than necessitating a complete rebuild.
- Inform local authorities, donors, and communities about the clear economic, social, and environmental benefits of sustainable housing.

Caution: In contexts of displacement or emergency, factors like land rights, government policies, and limited funding may restrict the construction of truly permanent housing solutions.

8 Train Builders and Communities

Why This is Important: Better knowledge enables the construction of stronger, more durable houses while using materials more efficiently and safely.

How to Implement It:

- Conduct hands-on, practical training sessions focused on eco-construction techniques.
- Include topics such as waste sorting, soil stabilisation, and effective structure maintenance.

Caution: Training must be adapted to local languages and cultural contexts to ensure it is accessible and relevant to everyone, including women, elders, persons with disabilities, and all other community members.

9 Work in Collaboration with Local Partners

Why This is Important: Collaboration helps avoid duplication of effort, saves time and resources, and enhances the effectiveness of humanitarian actions.

How to Implement It:

- Formally coordinate activities with local authorities, the Shelter Cluster, and other non-governmental organisations (NGOs) operating in the area.
- Actively involve community leaders in the planning, supervision, and monitoring of all projects.

Caution: Keep all stakeholders regularly informed to prevent overlaps or misunderstandings. Furthermore, ensure that the consultation process actively includes diverse community groups, such as women, elders, youth, and persons with disabilities, to guarantee that all voices and specific needs are heard in the planning and monitoring of projects.

10 Offset Emissions Through Local Actions

Why This is Important: some carbon emissions are unavoidable, but they can be balanced through positive local actions.

How to Implement It:

- Nature-Based Solutions: Directly absorb CO_2 by planting trees, restoring degraded soils, or creating communal gardens.
- Energy Efficiency: Reduce fuel consumption by promoting the use of solar lamps and low-energy tools within the project site and the community.

Caution: Focus on simple, visible actions that directly benefit both people and nature locally, rather than relying on complex or expensive external carbon offset programmes.

11 Protect and Restore the Environment: Support Reforestation

Why This is Important: Trees protect the soil, provide shade, and store carbon, helping to offset unavoidable emissions from humanitarian activities.

How to Implement It:

- Plant local, drought-resistant species suitable for the specific climate.
- Collaborate with youth groups or environmental NGOs to organise and maintain the planting efforts.
  Actively involve communities to clearly determine who will care for the trees and who will own them after planting.

Caution: Always choose local species that require little water, especially in arid areas. In displacement sites, it is crucial to define responsibility for the trees in advance to avoid misunderstandings and ensure their long-term survival.

12 Promote "Cleaner" Cooking Solutions

Why This is Important: Reliance on firewood for cooking contributes significantly to deforestation and causes indoor air pollution, which severely harms the health of families, particularly women and children.

How to Implement This :

- Distribute or actively promote improved, fuel-efficient stoves that consume significantly less wood than traditional open fires.
- Encourage the use of cleaner, alternative fuels such as briquettes, gas, or solar cookers, where appropriate and accessible.

Caution: Always test new equipment directly with the users, who are generally women. Stoves and cooking solutions must be carefully adapted to local cooking habits and cultural practices to ensure they are accepted and used effectively by the community.

“A material can only be classified as sustainable, if its extraction respects the balance of nature.”

Niger. © Luxembourg Red Cross

6. Glossary

Climate change: Climate change: a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

Community resilience: The ability of a community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

Ecosystems: An ecosystem refers to a geographic area which contains a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. The whole surface of Earth is a series of connected ecosystems. Every factor in an ecosystem depends on every other factor, either directly or indirectly. Ecosystems are immensely fragile to human impact and other stressors. If one element stops functioning, it affects other parts of the system.

Environment: The environment can be defined as all living things and natural materials. It is all of the external conditions affecting the life, development and survival of an organism, including people. The environment is the naturally produced physical surroundings on which humanity is entirely dependent in all its activities.

Environmental degradation: Environmental degradation is the deterioration of the environment through depletion of resources such as quality of air, water and soil; the destruction of ecosystems; the extinction of wildlife; and pollution. It is defined as any negative change or disturbance to the environment.

Environmental footprint: An environmental footprint is the effect that a person or entity (company, community, activity etc.) has on the environment. This includes how many carbon emissions they are responsible for (carbon footprint) but also includes other impacts on the environment such as the amount of natural resources they use, or the amount of land, water or sea required to supply the food, housing, mobility, and goods and services they use.

Environmental impact; The change in well-being of ecosystems, resulting from a process set in motion or accelerated by human actions.; Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

Environmental sustainability: A state in which human needs are met without compromising the environment's ability to support life, both now and in the future. This includes reducing climate

impacts and strengthening the resilience of populations[1].

Global warming: Increase in surface air temperature, referred to as the global temperature, induced by emissions of greenhouse gases into the air.

Greenhouse Gas (GHG) emissions: Gases released into the atmosphere, such as carbon dioxide, methane, and nitrous oxide, that trap heat and contribute to global warming and climate change. They mainly come from human activities including burning fossil fuels, agriculture, industry, and waste.

Lifecycle: refers to consecutive and interlinked stages of a product or service, from raw material acquisition or generation from natural resources, design, production, transportation/ delivery, use, end-of-life treatment and final disposal.

Natural resources: Materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain.

Sustainability: A characteristic or state whereby the needs of the present population can be met without compromising the ability of future generations or populations in other locations to meet their needs.

Waste: Waste is unwanted or unusable materials produced by human activity. Waste is any substance discarded after primary use, or is worthless, defective and of no use. Waste can be solid, liquid, or gas and each type has different methods of disposal and management.

Waste management: Waste management refers to the various approaches to manage and dispose of waste. It can be by discarding, destroying, processing, recycling, reusing, or controlling waste. The prime objective of waste management is to reduce the amount of unusable materials and to avert potential health and environmental hazards. Waste management deals with all types of waste, including industrial, biological and household. Waste management is intended to reduce adverse effects of waste on human health and the environment.

1 IFRC

“Humanitarian shelter efforts must balance the urgency of protecting populations with the responsibility to preserve the environment.”

Burundi. © Luxembourg Red Cross